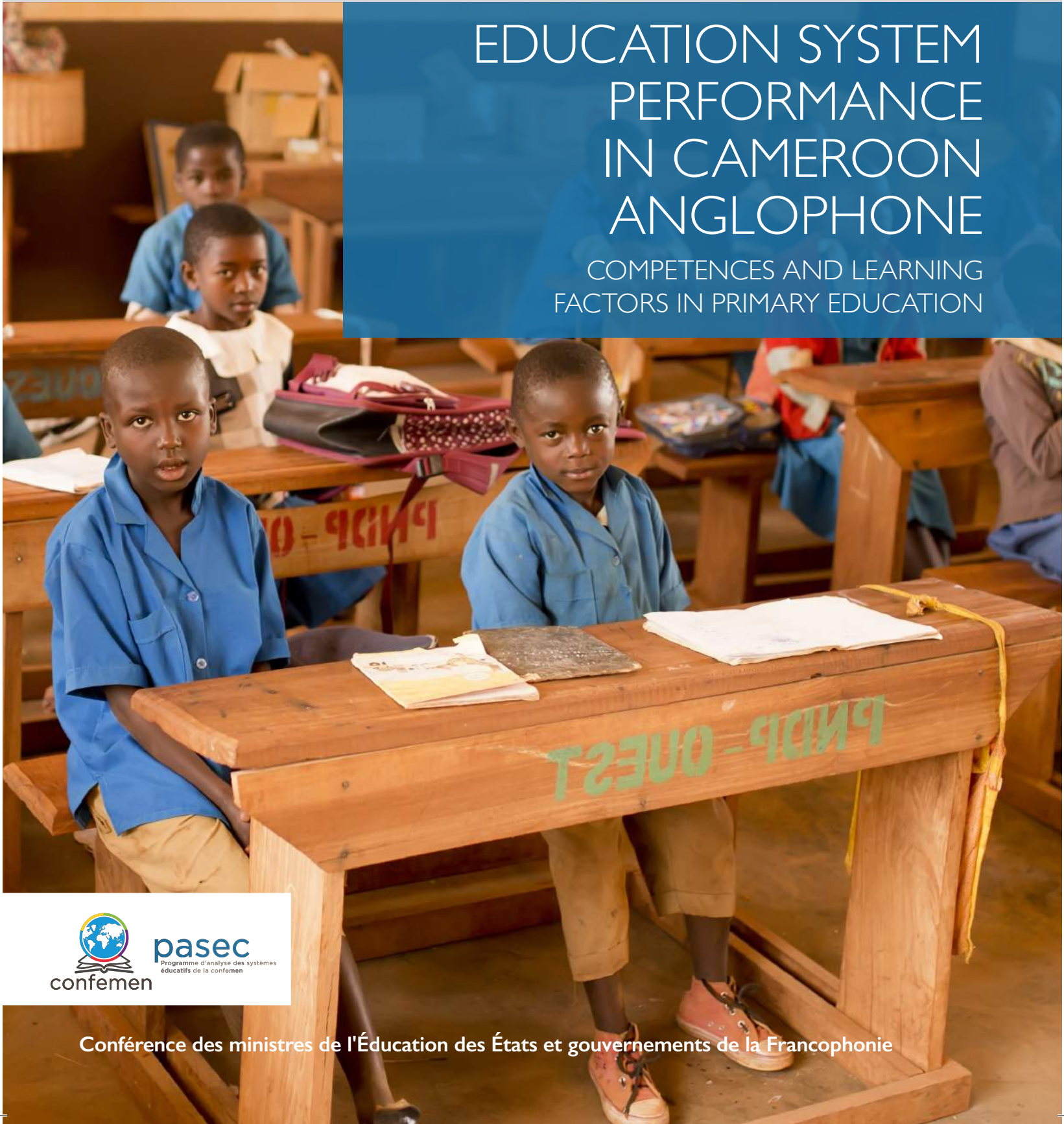**Republic of Cameroon**

Ministry of Basic Education

PASEC*2019*

EDUCATION SYSTEM PERFORMANCE IN CAMEROON ANGLOPHONE

COMPETENCES AND LEARNING FACTORS IN PRIMARY EDUCATION

pasec
Programme d'analyse des systèmes éducatifs de la confemen

confemen

Conférence des ministres de l'Éducation des États et gouvernements de la Francophonie

Republic of Cameroon

Ministry of Education

PASEC2019
EDUCATION SYSTEM PERFORMANCE
IN CAMEROON ANGLOPHONE

COMPETENCES AND LEARNING FACTORS IN PRIMARY EDUCATION

SIGLES ET ACRONYMES

WRITERS

Experts nationaux

- FABRICE NARCISSE KANA, Spécialiste en analyse des systèmes éducatifs
- ALBERT PARFAIT NOAH, Spécialiste en statistiques

Correspondant national de la CONFEMEN et Équipe nationale PASEC

1. MADELEINE DAIRFELE épse MAMAT, Correspondant national de la CONFEMEN ;
2. JULES KWEKEU, Education Policy Analyst, Responsable national de l'équipe PASEC ;
3. Joseph Yong TOHMOH, Conseiller Technique N° 2, Cabinet du Ministère de l'Éducation de Base, Pédagogue, membre EN/P2SEC du Cameroun ;
4. Mairama DOUBLA, Inspectrice de la Pédagogie Nationale chargée de l'Enseignement Primaire (IPN/EP) à l'Inspection Générale des Enseignements du Ministère de l'Éducation de Base, Pédagogue, membre EN/PASEC du Cameroun ;
5. Evelyne AYUKEGBA, Directeur des Sports, de la Santé et des Activités Post et Péri Scolaires, Pédagogue, membre EN/PASEC du Cameroun ;
6. Patience ATANGA MAMBO épouse TADJOU, Sous-directrice de la Certification, des Archives et des Statistiques, Pédagogue, membre EN/PASEC du Cameroun ;
7. Abel DOBE, Informaticien, membre EN/PASEC du Cameroun ;
8. Robert DJONWANG, Statisticien, Membre de l'EN/PASEC du Cameroun.

Avec la contribution de l'équipe internationale du PASEC représentée par :

1. M. Ousmane BIRBA, Conseiller technique,
2. Dr Labass Lamine DIALLO, Conseiller technique,

ACKNOWLEDGEMENTS

FOREWORD

The measurement of learners' achievement is essential for the proper monitoring of an education system and the improvement of the quality of teaching. It is well known that having information on learners' performance helps inform educational policies and promotes decision-making in education, especially in the design and implementation of curricula.

In Cameroon, the evaluation of learning has always occupied an important place in our education system. It is with this in mind that we have taken part in several international surveys on the measurement of learning achievements, particularly the first surveys promoted by CONFEMEN through its Programme for the Analysis of Educational Systems (PASEC), which was administered in each country that applied for.

The current vision of PASEC, which integrates an international component and whose tools developed and implemented make it possible to compare the learning results of primary school pupils in several Sub-Saharan African countries, immediately caught our attention. Indeed, PASEC reports provide guidance to the authorities in charge of education in these countries for informed decision-making with a view to constantly improving the quality of learning.

The current PASEC methodology has been designed with the aim of evaluating the efficiency and equity of the education systems of the participating countries, while trying to determine the in-school and out-of-school factors that may influence learning. To this end, the PASEC methodological model is based on the measurement of competences in the language of instruction and in mathematics, at the beginning and end of primary schooling, among a sample of pupil's representative of the school population of the targeted classes in each country.

Thus, Cameroon did not hesitate for a moment to commit itself to the PASEC2014 survey, which concerned the two education subsystems: Anglophone and Francophone. It was carried out on a representative sample of the school population in classes 2 and 6 in both public and private schools, following the grouping of regions into geographical zones. Pupils from the Anglophone subsystem were assessed in English and those from the Francophone subsystem in French, two official languages that are not the mother tongues of the vast majority of learners. The main determinants of the quality of education were addressed, including governance, availability of textbooks, the school environment, literacy and the socio-economic level of parents.

In the light of this very active participation, the results of PASEC2014 revealed insufficient and worrying performance in the areas covered by this survey. These results challenged all the actors of the education system and required their involvement in order to achieve the objectives, particularly those of the completion of quality universal primary education.

Following these major findings, the avenues of reflection identified by the survey were aimed at improving the success of pupils and the quality of education. Therefore, we have with the same enthusiasm committed our country to participate in the second edition of the grouped evaluations entitled PASEC2019, whose major innovation is the evaluation of teachers as much on the content of subjects as on their mastery of didactics, their characteristics and their perception of certain working conditions.

The performances recorded by the Cameroonian education system in this second edition, even if a slight improvement is noted; show that the challenges to meet are still enormous. Thus: (i) at the beginning of schooling, there are still major challenges in language and achievements to be strengthened in mathematics; (ii) at the end of schooling, performance is still far from meeting expectations, particularly in reading; and (iii) as far as teachers are concerned, we note that they have a satisfactory level of mastery of knowledge and skills in the subjects taught, but some difficulties persist in analysing pupils' approaches and in choosing situations that are sufficiently enriching to promote learning.

I hope that this report, whose conclusions are a clarion call to the actors and partners of our education system, will enable us once again to improve the overall performance of our education system.

The Minister of Basic Education

LIST OF CONTENTS

CHAPTER 3: ACADEMIC PERFORMANCE OF EARLY PRIMARY SCHOOL PUPILS 61

CHAPTER 4: SCHOOL PERFORMANCE OF PRIMARY SCHOOL LEAVERS 79

CHAPTER 5: ANALYSIS OF THE SCHOOL ENVIRONMENT AND LINK WITH PUPILS' PERFORMANCE......................................101

CHAPTER 7: CROSS-ANALYSIS OF THE PERFORMANCE OF PUPILS IN EDUCATIONAL PRIORITY AREA AND THOSE IN THE REST OF THE COUNTRY 225

CHAPTER 8: SUMMARY OF FINDINGS AND AVENUES FOR REFLECTION AND ACTION..253

1

2

3

4

5

6

7

8

LIST OF TABLES

LIST OF FIGURES

LIST OF BOXES

LIST OF GRAPHS

CHAPTER 1

PRESENTATION OF THE EDUCATION SYSTEM AND CHARACTERISATION OF QUALITY MONITORING

This chapter aims to present the country context with a particular focus on the education system. The following points shall be addressed in this chapter:

- Presentation of the economic, demographic, geographical and cultural context of the country in relation to the education system.

- Presentation of the primary education system. Aspects related to the official age of entry to primary education, the architecture of the education system (number of years in primary or basic education, different cycles and types of schools), the different pedagogical innovations, the educational policy in force for learning with a focus on reading and Mathematics, a synthetic presentation of the objectives of the curricula.

- Presentation of the main education indicators in the country.

- Presentation of the political orientations in education, the reforms in progress and the coherence of the curricula with the contents taught, the respect of the timetable, the main problems of the country's education system.

- Presentation of the national education evaluation system: structure and evaluation tools available in the country for monitoring the MDG4 as well as the steering instruments necessary for monitoring the qualitative objectives.

- Presentation of PASEC2014 data and the main findings for the country.

1.1. PRESENTATION OF CAMEROON: GEOGRAPHICAL, CULTURAL, DEMOGRAPHIC AND ECONOMIC CONTEXT

Located in Central Africa, Cameroon stretches from the Atlantic Ocean to Lake Chad and occupies an area of nearly 475,650 km2.

A decentralized unitary state governed by the Constitution of 18 January 1996, Cameroon is divided administratively into 10 regions, 58 divisions and 360 sub divisions. In addition, the communal organisation institutes 14 City councils. It is important to note that the principle of decentralization was instructed by Law No. 2004/018 of 22 July 2004 laying down the rules applicable to councils. Article 161 of Law No. 2019/024 of 24 December 2019 on the General Code of Decentralized Territorial Collectivities further strengthens the institutional environment of education in Cameroon. In this sense, the State transfers certain competences to the councils, such as in the areas of Education (161.a.), Literacy (161.b.) and Technical and Vocational Training (161.c.). The aim is to ensure local management of educational structures by decentralised local authorities.

Figure 1 : Cameroon Map
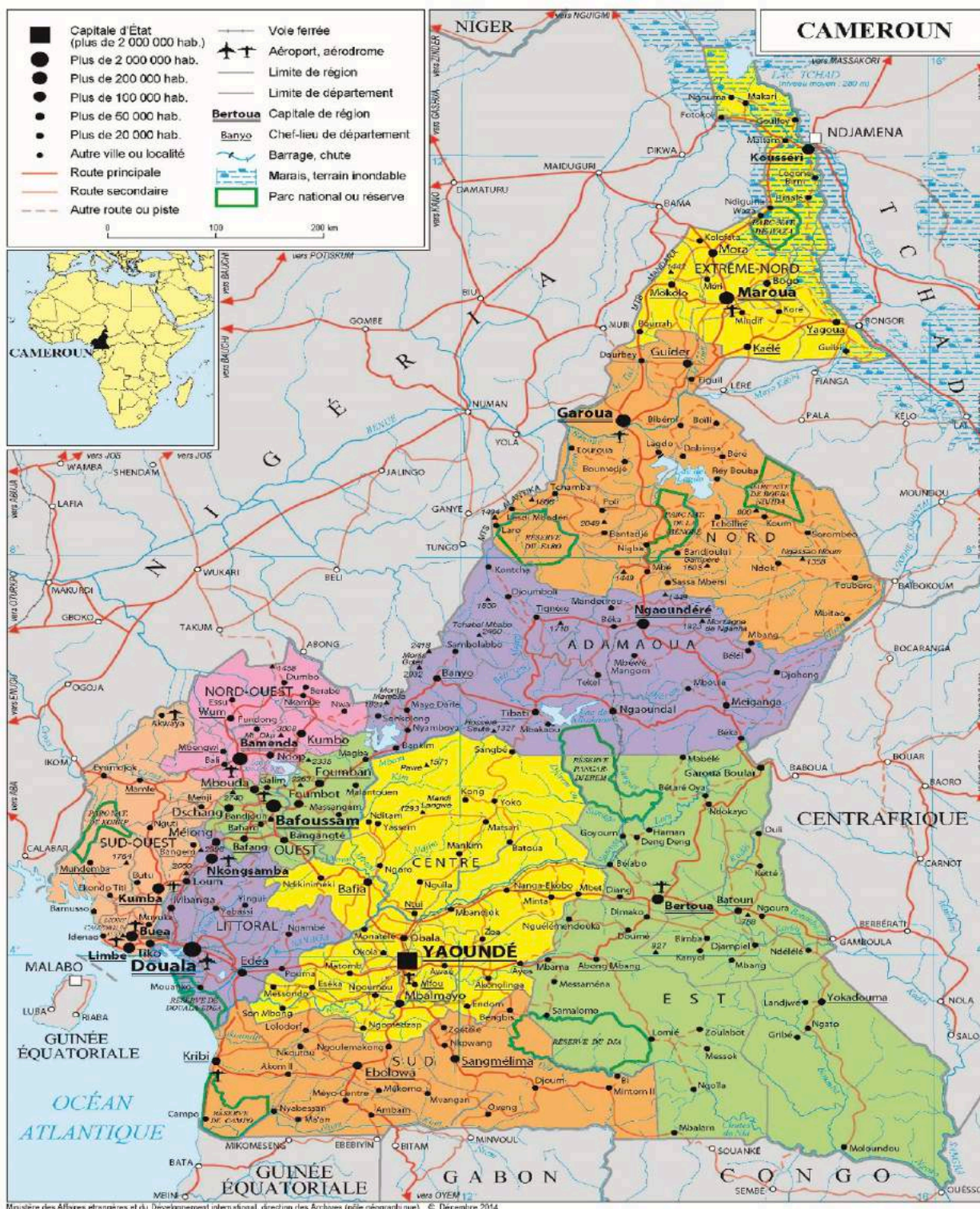
Source : https://wikimemoires.net/2019/11/cameroun-clans-a-la-formation-dune-republique-unie/

Cameroon's population was estimated at 24.3 million in 2019, with a density of 51 inhabitants per square kilometre. This population is rather young: those under 15 years of age represent 42% of the total population while the population aged 65 and above is only 3.5%. The population growth rate is 2.6% on average per year and the birth rate is 35%. [1] Nearly half of the population lives in urban areas, with Douala and Yaoundé being the largest cities.

The school-age population (4-23 years) represents 53% of the population for a total estimated population of 12.8 million inhabitants in 2019 against 9.4 million in 2005, which corresponds to an average annual growth of 2.3%. This shows, on the one hand, the significant weight of children and young people to be enrolled in school for the adult population of working age, which in fact provides the funding, and, on the other hand, the demographic weight that this age group exerts on the education system in terms of school provision.

Cameroon's development policy is set out in two reference documents which are the Cameroon's Development Vision for 2035 and the Growth and Employment Strategy Paper (GESP) which covers the period 2010-2020. The first document presents Cameroon, by 2035, as "an emerging country, democratic and united in diversity" while the DSCE focuses on "accelerating growth, creating formal employment and reducing poverty". One year before the expiry of the ECDS, the Cameroonian government has been engaged since the beginning of 2019 in consultations for the elaboration of a new development policy that should cover the period 2021-2030 on the one hand and align itself with the United Nations' Sustainable Development Goals (2015-2030) on the other hand.

In parallel to these two documents, the government drew up in 2014 the Emergency Plan for the Acceleration of Growth in Cameroon whose objective is to put the economy back on the growth path.

At the macroeconomic level, according to national accounting data, economic growth measured by gross domestic product (GDP) has experienced two major flows since 2010:

- **Acceleration of growth between 2010 and 2015 :** the implementation of the Growth and Employment Strategy (DSCE) has enabled Cameroon to maintain a real GDP growth rate of between 4.1% and 5.7% for the 2011-2015 period;

- **Reversal of the trend since 2015 mainly due to the fall in oil prices and the security crisis :** the occurrence in 2015 of the fall in the prices of the main raw materials including oil, and the multiple humanitarian and security crises experienced by Cameroon and its neighbouring countries have globally affected all CEMAC countries. The real GDP growth rate was only 4.1% in 2018 against 4.6% in 2016. The timid recovery of economic activity observed in 2018 (gain of 0.6 points) remains lower than that observed in 2015.

1.2. CAMEROON'S EDUCATION SYSTEM

Article 15 of Law No. 98/004 of 14 April 1998 on the Orientation of Education in Cameroon stipulates that "the education system is organised into two sub-systems, one Anglophone, the other Francophone, through which the national option of biculturalism is reaffirmed. The above-mentioned educational sub-systems coexist, each retaining its specificity in the methods of evaluation and certification. »

In addition to the fact that higher education is common, each sub-system consists of five levels of education: pre-school, primary, post-primary, secondary and Teacher Training.

Pre-school education is the first level. It officially lasts for 2 years, and the entry age is 4 years, although in some lay private schools, children are admitted at the age of 3 years.

The goal of primary education is to provide basic education in primary schools to all children aged 6 and older. It lasts six years and is sanctioned by the Certificat d'Etudes Primaires (CEP) for the Francophone subsystem and the First School Leaving Certificate (FSLC) for the Anglophone subsystem.

Post-primary education is composed of two sections in both subsystems: a craft section in which pupils are trained in technical subjects (masonry, carpentry, electricity, etc.) and a home Economics section (cooking, childcare, etc.). This education enables pupils who have dropped out of primary or lower secondary education to acquire skills that will facilitate their professional integration or enable them to continue their studies in order to obtain a Certificate of Professional Aptitude (CAP).

---

[1] World Bank database, 2018 is the year of the last known value

Secondary education, which lasts seven years overall, consists of two cycles in each sub-system (French and English-speaking). In the French-speaking sub-system, the first cycle of general secondary education comprises four years of study and is concluded with the Brevet d'Études du Premier Cycle (BEPC) or the Certificat d'Aptitude Professionnelle (CAP) in the case of technical secondary education; the second cycle lasts three years and is concluded with the Baccalaureate (general or technical). In the Anglophone subsystem, the first cycle comprises five years of study and is sanctioned by the General Certificate of Education Ordinary Level (GCE O Level) and the second cycle lasts two years and is sanctioned by the General Certificate of Education Advanced Level (GCE A Level).

There are two types of teacher education: (1) the Teacher Training Colleges for General Education (ENIEG), which train teachers working in pre-primary and primary schools; (2) the Teacher Training Colleges for Technical Education (ENIET), which train teachers working in post-primary and lower secondary technical education. The duration of training in these schools varies from one to three years depending on the entrance qualification, i.e. the Baccalaureate, probationary or BEPC/CAP. The studies are sanctioned by the Certificate of Pedagogical Aptitude of a Teacher of Nursery and Primary Education (CAPIEMP) or the Certificate of Pedagogical Aptitude of a Teacher of Technical Education (CAPIET).

Higher education includes a variety of training courses lasting from two to seven years. These courses are mainly managed by the Ministry of Higher Education, but other courses of a professional nature are under the supervision of other technical ministries.

1.3. FOCUS ON THE CAMEROONIAN PRIMARY CYCLE

The official age of access to primary education in Cameroon is six years. The primary cycle lasts six years and is structured in three levels: (1) Level I, which includes the first two years of the cycle (class 1 and 2); (2) Level II, which includes class 3 and 4; (3) Level III, which includes the class 5 and 6.

Within a level, promotion is collective. However, repetition of a pupil's year may be authorised exceptionally at the request of the parent concerned (Order 315/B1/1464/MINEDUB of 21 February 2006).

There are two primary education subsystems in Cameroon: the Anglophone subsystem and the Francophone subsystem. Both are established throughout the Cameroonian territory even though the Anglophone sub-system is in the majority in the North-West and South-West regions and the Francophone sub-system is more present in the other eight regions of Cameroon.

Each school is placed under the administration of the School Council headed by the chairman of the board and the school management headed by the school headmaster. At each level, there is a facilitator who coordinates pedagogical activities.

The primary schools in a sub division are placed under the authority of an inspector who has administrative and pedagogical functions. A group of nearby schools form a pedagogic basin, Pedagogic animation units (UNPEZD and UNAMAT), a meeting place for teachers during the Pedagogic Days. There are Practising Schools, annexed to the Teacher Training Schools of General Education, under the authority of the Divisional Delegate for Basic Education.

1.3.1 Types of schools in the primary cycle

Primary schools in Cameroon are categorised according to two dimensions: the educational subsystem (Anglophone or Francophone) and the promoter (state or private), which gives rise to two orders, the government and the private. In addition, there is a very small proportion of community schools (about 2%) which are intended to be transformed into public schools.

Primary schools in Cameroon operate under three regimes: (i) full time, that is, all the classes of the school are operational from Monday to Friday from 7:30 am to 3:00 pm except on Wednesday afternoon; (ii) half time, that is, all the classes are operational from Monday to Friday either in the morning or in the afternoon and possibly on Saturday morning; (iii) mixed, that is, some classes operate full time and others half time.

For the 2019-2020 school year, the primary cycle registered 4,578,708 pupils, of which 2,157,098, or approximately 47%, were girls. This is an increase of 3.9% over the 2018/2019 school year. Of this overall number, the number of pupils enrolled in government schools represents 76%, while the private sector accounts for 23%. Community or parent schools remain marginal, with only 1% of the total number of pupils. The Anglophone sub-system educates nearly 15.4% of the primary school population, compared with 84.6% in the Francophone sub-system. In contrast to pre-school, which is mainly developed in urban areas.

Table 1 : Changes in the distribution of pupils and schools by subsystem and type of school

School Year	Characteristics		Distribution of pupils			Distribution of schools		
	Francophone Sub system		Anglophone Sub-system	Total	Francophone Sub system	Anglophone Sub-system	Total	
2018-2019	Government	Number	2 979 531	371 003	3 350 534	10 453	2 941	13 394
		%	89	11	100	78	22	100
	Private	Number	682 593	305 386	987 979	4 466	3 795	8 261
		%	69	31	100	54	46	100
	Community	Number	55 855	3 079	58 934	655	142	797
		%	95	5	100	82	18	100
2019-2020	Government	Number	3 117 277	342 017	3 459 294	10 114	2 858	12 972
		%	90	10	100	78	22	100
	Private	Number	703 325	361 002	1 064 327	3 908	2 658	6 566
		%	66	34	100	60	40	100
	Community	Number	52 235	2 852	55 087	338	28	366
		%	95	5	100	92	8	100

Source: MINEDUB statistical yearbooks for the 2018-2019 and 2019-2020 school years.

Of pupils in private education, 65% attended lay private schools in 2019/20, and 35% attended religious private schools. The latter private suborder is divided as follows: 66% in Catholic schools, 21.7% in Protestant schools and 12.3% in Islamic schools.

For the same school year, there are 19,904 primary schools, of which 65.1% are government, 32.9% private and 2.0% community. The Francophone subsystem represents 72.1% of the schools and the Anglophone subsystem 27.9%. As for the private sector, the different sub-systems represent, in terms of percentage of private sector schools, 74.3% for lay, 14.8% for Catholic, 7.2% for Protestant and 3.6% for Islamic.

1.3.2. The Prescribed Pedagogy for Teaching reading and Mathematics

According to the official program in force in Cameroon in 2014, the pedagogic approaches adopted for teaching reading and Mathematics are: pedagogy by objectives (PPO), the Competence Based Approach (CBA), the new pedagogic approach, the Hands on Learning (Main à la pâte (MAP)) and the pedagogy of integration.

1.3.3. Curricula

The content of the primary school curricula in force during the 2018-2019 school year in the Francophone sub-system is described in the document entitled Cameroonian Francophone Primary Education Curriculum ' developed in 2018. This document is structured in three volumes of which the first covers level I (class 1 and 2) and the second and third cover levels II (class 3 and 4) and III (class 5 and 6), respectively. For the Anglophone subsystem, the curricula are described in a document, "Cameroon Primary School Curriculum", which was drawn up in 2018 like that of the Francophone subsystem. It is also structured in three volumes.

These documents set the purpose of the system and define the general objectives and specific goals to be achieved, and the learning units are built around eight areas of interest for each level. In addition, they list the subjects (compulsory and optional subjects) and determine the relevant time volumes.

According to the orientations of the Framework Document for Curricular Reform, the two (2) sub-systems have in common: the domains, the weight of the domains, the key and transversal competences and the subjects. However, each sub-system maintains its specificities as regards learning methods, assessment tools and teaching materials.

Primary curricula are therefore made public through decrees and circulars and implemented in textbooks included in the official list, state-recognised teaching materials (textbooks are authorised by the National Commission for the Accreditation of School Textbooks and Teaching Materials) and pedagogical guides for teachers.

1.3.4. Language teaching

For the teaching of the language in class 2, six main areas are targeted: (i) Reading; (ii) Reading Comprehension; (iii) Written Expression; (iv) Spelling, Grammar and Synthesis; (v) Listening Comprehension; (vi) Speaking.

The main objectives are to enable learners to: know letters and the alphabet; associate phonemes and graphemes; read words aloud; read silently; identify the correct spelling of words; understand the meaning of isolated words; read isolated sentences aloud; read short texts aloud; understand a text and answer questions about it; identify the main idea and characters in a text; and interpret and make inferences about a text.

The six main areas identified for language teaching in the first grade are repeated for the Middle Course in the second year (class 6). In addition, writing and the appreciation of literary works are also covered.

1.3.5. The teaching of Mathematics

For the teaching of Mathematics, three main areas are listed at the level of class 2: (i) number and operations; (ii) geometry and space; and (iii) measurement. In addition to these three domains, a fourth, problem solving, is added, which corresponds to the cognitive process involved.

The skills expected of learners at the end of Class 2 are: to recognise the verbal chain of numbers; to identify written numbers; to count and count correctly; to carry out mental operations; to understand and apply the rules of addition and subtraction; to solve every day mathematical problems involving collections and sets, numbers and calculation; to compare quantities; to know geometric shapes and the principles of spatial location and to solve logical sequences of numbers, shapes or patterns.

The aim is therefore to promote good mental structuring and the acquisition of fundamental knowledge on which learners will have to base their further learning.

For learners in class 6, they should be able at the end of the course to solve every day mathematical problems involving the four operations with whole numbers, decimals, fractions, sexagesimals and relationships in sets. The set objectives contribute to the general training of the mind and the development of thinking and research skills. In order to achieve these objectives, pupils must be able to: count, count and appreciate quantities; know the rules of operation; know geometric forms and formulas for calculation in geometry; calculate mentally; solve and apply operations; reason and solve problems.

1.3.6. School time

The school year runs from September of year n to June of year n+1. It is subdivided into six sequences of six weeks each for all primary pupils. The week consists of five effective teaching days for full-time schools (Monday to Friday) and six days (Monday to Saturday) for part-time schools. The effective weekly teaching time is 30 hours for full-time schools (about 690 hours annually) and 25 hours for half-time schools (about 575 hours annually) for all levels (I, II and III). It should be noted, however, that these theoretical timetables are not always strictly adhered to, especially in rural areas, because some teachers do not respect the actual date of the start of the school year or have to travel frequently to urban centers to receive their salaries, and also because the agro- pastoral calendar in some parts of the country causes many absences among pupils who are called upon by their parents to fill a labour need.

Language teaching covers one-third (30%) of school time in primary school because it is the basis for other learning. For the teaching of Mathematics, a subject at the basis of reasoning and logic, the time allocated represents about 13% of the timetable. For class 6, although the time allocated to language teaching is somewhat reduced, it remains around 25%, as is the time allocated to Mathematics.

1.4. KEY INDICATORS FOR PRIMARY EDUCATION

Overall, in terms of school coverage, Cameroon's performance in pre-school and primary education is good compared to countries with comparable incomes and Sub-Saharan Africa (SSA). However, at secondary level, at both lower and upper secondary level, the level of coverage in Cameroon is below the average of SSA countries and those of comparable economic level.

Specifically, at primary level, the gross enrolment ratio (GER) used to assess coverage is 114.7%. This rate is above 100% due to authorised repetition and, to some extent, early entry into the cycle. The rate is 108% for girls and 121% for boys, which gives a parity index for girls and boys close to unity, at 0.89.

Moreover, it should be noted that in Cameroon, the primary cycle is also characterised by high access, in all regions of the country and irrespective of gender. The gross access rate (GAR) is 128% at national level, with an average of 120% for girls and 136% for boys. This rate is also above 100% because the data include not only children of legal school age (6 years) but also those who entered school late or early. Contrary to the other school levels, the rate of access to preschool is very low, both for girls and boys (39,03% and 38,62%, respectively).

Table 2: Some key indicators of Education in Cameroon in 2019

Cycle	Indicators	Girls	Boys	Total
Pre-school	Gross rate of pre-schooling	39,03%	38,62%	38,83%
Primary	Gross rate of access (GRA)	120,6%	135,8%	128,2%
	Gross rate of schooling (GRS)	108,3%	121,1%	114,7%
	Completion rate (PCR)	67,2%	75,0%	71,1%
1st cycle of secondary	Gross rate of access (GRA)	48,54%	57,25%	52,87%
	Gross rate of schooling (GRS)	48,27%	54,80%	51,56%
	Completion rate (PCR)	51,19%	56,77%	54,02%
2nd cycle of secondary	Gross rate of access (GRA)	36,81%	42,36%	39,61%
	Gross rate of schooling(GRS)	34,02%	39,67%	36,89%
	Completion rate (PCR)	33,06%	35,22%	34,15%

Despite the fact that the problem of access does not exist for the primary cycle in Cameroon, the number of pupils, in relation to the school-age population, who have the possibility of completing their primary schooling is slightly behind schedule. In fact, the completion rate in 2019 was 71.1%, which is about 29 points below the 100% objective that the country has set itself within the framework of Quality Education for all by 2030 and particularly for sustainable literacy in adulthood. The completion rate for girls (67.2%) is lower than for boys (75.0%).

Retention in primary school remains problematic, since out of 100 young people who enter SIL/CL1, only 51 will reach CM2/CL6. The anticipated enrolment profile indicates that if current conditions remain unchanged, the primary completion rate in five years' time should be 69%. This trend indicates a weak performance of the system, particularly at primary level, and also shows that major challenges in terms of retention are still to be met in the perspective of universal primary education, which remains the main objective of the education development strategy.

It should be noted that disparities are even more marked in the different regions of the country. Thus, the completion rate is only 69.9% in the country's Priority Education Zones (PEZs), which are made up of the Adamawa, East, Far North and North regions.

However, it should be noted that all primary education indicators in Cameroon have been growing steadily in recent years due to the improvement in supply both in terms of infrastructure and qualified teaching staff, before experiencing a significant decline in 2016 due to the security crises that Cameroon is going through. Since 2019, however, a growth trend has been observed.

With regard to public expenditure on education, the Cameroonian government has devoted in 2019 nearly 13% of its budget for this sector, which represents 681.613 billion F CFA or about 3.1% of GDP. The basic education sub-sector, for its part, has benefited from 216.485 billion F CFA, i.e. a little more than 31.7% of the share allocated to the education sector; far from the 45% recommended by the major international agendas.

Table 3: Evolution of the budget allocated to the basic education sub-sector 2015 to 2019 (in millions of FCFA)

Budgetary Year	Budget of Basic Education	Global Budget of the Education sector	State Budget(in billions)
2016	206,16	527,867	4 234
2017	222,123	640,715	4 373
2018	210,553	673,494	4 513
2019	216,485	681,613	5 156

Source: Cameroonian Finance Laws

Depending on the nature of the expenditure, the budget allocated to the basic education sub-sector in 2019 is distributed as follows: (i) current expenditure: 186.363 billion F CFA, or 86% of the budget; (ii) capital expenditure: 30.122 billion F CFA, or the equivalent of 14% of the budget. Per pupil expenditure for the year 2019 is therefore estimated at around 54,100 F. CFA

It should be noted that the unit cost is lower at the primary education level. A child in pre-school education costs 1.2 times the cost of a primary school pupil. Moreover, it is the staff that takes up the lion's share of the unit cost, and within this expenditure on staff, expenditure on teachers predominates (more than 90% of the unit cost).

1.5. THE MAIN ORIENTATIONS OF CURRENT EDUCATION POLICY

Cameroon's current normative mechanism is characterised by the following essential features:

1. The recognition of education by the National Constitution as a fundamental mission of the State. The preamble of the Constitution of 18 January 1996 states that: (a) the State shall ensure the right of the child to education; (b) primary education shall be compulsory; (c) the organisation and control of education at all levels shall be the responsibility of the State.

2. Recognition of education as a national priority. Law No. 98/004 of 14 April 1998 on the Orientation of National Education in Cameroon and Law No. 2001/005 of 16 April 2001 on the Orientation of Higher Education contain explicit provisions on this point in Articles 2 and 3, respectively.

3. The setting up of a specific legal mechanism to support private education. This is Law No. 2004/022 of 22 July 2004 laying down the rules relating to the organisation and functioning of private education in Cameroon.

4. The deliberate choice of a legal-administrative system favouring state control of the institutional development of education. Indeed, the system provides for : (a) the creation and discretionary opening by the State of government training institutions throughout the national territory; (b) the awarding of diplomas at all levels under the exclusive competence of the State; (c) the establishment of the legal regime of "prior authorization" by the State administration for the exercise of training activities by private promoters; (d) the establishment of regulations establishing both the preparation of pupils and pupils of private institutions for national degrees and a mechanism for the recognition and granting of academic equivalences to foreign degrees in relation to national degrees.

5. The institution of the promotion of equal opportunities for all Cameroonian citizens. Indeed, the orientation laws on education (1998, 2001) prescribe that: (a) the State shall guarantee access to training institutions to persons fulfilling the required academic conditions and according to the capacity of each institution; (b) higher education institutions shall develop assistance policies enabling pupils from all social strata to have access to higher education.

6. The compulsory nature of primary education and the fact that government primary schools are free of charge, which therefore calls upon public authorities to establish throughout the national territory the conditions for the effective application of this constitutional prescription.

The major orientations assigned to primary education in Cameroon aim at : (i) to train future citizens "rooted in their culture but open to the world and respectful of the general interest and the common good", "in the great universal ethical values, which are dignity and honour, honesty and integrity as well as a sense of discipline" and "respect for human rights and freedoms, justice and tolerance, the fight against all forms of discrimination, love of peace and dialogue, civic responsibility"; (ii) enable young people to "cultivate a love of effort and work well done, the quest for excellence and the spirit of partnership, to be creative and to have a sense of initiative and entrepreneurship"; (iii) provide young people with a good "physical, sports, artistic and cultural education" and give them a sense of hygiene and health. In short, it is a question of training young Cameroonians capable, at the end of primary education, "to communicate orally and in writing in both official languages, French and English, to quickly adapt to the socio-economic context of their living environment and to pursue secondary education".

1.6. CURRENT REFORMS

The Education and Training Sector Strategy Paper (DSSEF), revised and endorsed by the technical and financial partners in 2013, covering the period 2013-2020, provides for a priority intervention program broken down into four main areas on which all the reforms underway in the Cameroonian education system are based. These are : (i) widening access to education and retention in the system while correcting disparities; (ii) improving the efficiency and quality of the education service; (iii) developing an effective partnership with the various members of society; (iv) improving the management and governance of the education system.

To this end, the Cameroonian government has set up a steering committee for the Education Sector Strategy, which is currently reflecting on the introduction of basic education, which requires the definition of a minimum knowledge and skills base for young Cameroonians on completion of basic education, as well as the reform of initial teacher training.

As the Sectorial Strategy for Education and Training is due to end in 2020, the Cameroonian government has already started the consultative work of updating the Sectorial Strategy for the period 2021-2030, in order to bring it into line with the MDG4 and the new national strategy that is also being drawn up. The major reforms already envisaged are as follows: (i) the operationalization of discussions on basic education through the introduction of a compulsory and free eight-year cycle (the six years of primary education and the first two years of lower secondary education) and (ii) the implementation of a textbook policy through the use of a single textbook per subject and per class for at least six consecutive school years.

1.7. THE AGENDA OF THE MINISTRY OF BASIC EDUCATION AND THE MAJOR ISSUES FACING THE EDUCATION SYSTEM

The Ministry of Basic Education, which is in charge of the management of the primary cycle in Cameroon, has a Medium Term Expenditure Framework covering the period 2019-2021 and targeting the major issues of the sub-sector. This plan is divided into four major programs, the first three of which are operational and the last one serves as a support.

The first operational program (n°196) focuses on Pre-school Development, with the objective of increasing the pre-school enrolment rate throughout the national territory. This extension of pre-schooling is based on support for community pre-schooling, the promotion of formal private initiative, the improvement of public pre-school provision and the training of trainers.

The second operational program (No 197) aims to universalise the primary cycle and aims to improve access to and completion of the cycle. To achieve this, it is a question of: (i) strengthening access to and retention in primary

education; (ii) improving the quality of education in primary schools with a view to continuous schooling, balanced socialisation or successful socio-professional integration; (iii) supporting the schooling of young girls in order to combat gender disparities; (iv) developing the oral and written use of national languages in and out of school.

The third operational program (No. 199) focuses on literacy with a view to : (i) develop the acquisition of instrumental skills (reading, writing and arithmetic), everyday life skills and the empowerment of literate people through income-generating activities; (ii) promote the reintegration of out-of-school children and early school leavers; (iii) strengthen the literacy environment in national languages. The strategies implemented to achieve these objectives focus on : (i) defining a conceptual framework for implementing literacy and supporting functional literacy activities; (ii) defining and building bridges between non-formal basic education and formal basic education and monitoring the operation and activities of the Non-Formal Basic Education Centers (CEBNF); (iii) developing a common core of national language skills for literacy and non-formal basic education centers; (iv) developing a national language competency framework for literacy and non-formal basic education centers; (v) promoting the use of national languages in literacy and non-formal basic education.

Finally, the support program (n°198), which represents the last program, is aimed at governance and institutional support with the aim of enabling the system to rationalise the allocation of educational resources and the steering of the system for the effective and efficient implementation of operational programs. In this perspective, it is envisaged to rationalise the allocation and management of educational resources, improve the working environment and living conditions of staff, consolidate the education information and management system, strengthen monitoring and evaluation activities for the management of public investment budget (BIP) resources and consolidate the planning, programming, preparation and monitoring process of budget execution.

1.8. THE NATIONAL EDUCATION EVALUATION SYSTEM

Through the Program for the Improvement of Equity and Quality of Education (PAEQUE, 2013-2018) on the one hand, and then the Program of Support for Education Reform in Cameroon (PAREC, 2018-2026), both supported by the Global Partnership for Education (GPE), Cameroon has set up a unit in charge of measuring learning achievement (UAS). To date, there are two national assessments conducted by the Unit, namely for the first, the Assessment of Learning Achievement, in 2016 for pupils in CP/CL2, CE2/CL4 and CM2/CL6 in language of instruction and Mathematics, the results of which were published in 2017. For the second, the EGRA/EGMA assessment in 2018, for pupils in CP/CL2 classes, published in 2019.

It should be noted that, at present, the sustainable education evaluation system in Cameroon does not make explicit provision for the evaluation of learning outcomes of a standardised type, but it does make use of it on an ad hoc basis either by recruiting consultants or through its participation in international evaluations (e.g. PASEC2014 and PASEC2019) through its technical and financial partners.

In addition to the assessments carried out by the unit in charge of measuring learning outcomes, the Cameroonian education system has regularly scheduled certificate evaluations. These are generally organised at the end of the cycle and give rise to the issue of certificates attesting to the completion of the cycle concerned, to candidates who have met the requirements. These evaluations are national and are organised either by the dedicated directorate within the ministry in charge of the cycle or by dedicated bodies such as the Baccalaureate Office and the GCE Board.

As a brief history, Cameroon has in the past participated in a number of international assessments of learning achievement and commissioned some assessments of learning achievement through consultants. For the first type of assessment, we can cite: the Monitoring Learning Achievement, (in french "Suivi Permanent des Acquis Scolaires"), in 1992 for grades 4 and 5 and in 2003 for grade 8, and the PASEC assessment in 2004-2005, the results of which were published in 2007. For the second, we can note the study carried out in 2011 by the SOFRECO firm, "Measurement of the level of mastery of pupils in terms of basic skills in language and Mathematics", among CM1 pupils in Cameroon, the reports of which are available.

1.9. PASEC2014 DATA AND THE MAIN FINDINGS OBSERVED

Data from the PASEC2014 evaluation in Cameroon at the beginning and end of primary education had shown the following results:

- At the beginning of schooling, the Cameroonian education system showed the existence of a significant proportion of pupils (70.3%) who do not master the knowledge and skills considered sufficient in the language to continue schooling in good conditions. In Mathematics, the situation is less worrying but also deserves attention (44.7% with learning difficulties).

- At the end of schooling, more than half of pupils (51.2% in reading and 64.6% in Mathematics) fall below the 'sufficient' skills thresholds.

As far as the Francophone sub-system is concerned, both at the beginning and at the end of the cycle, the performance of pupils in the Grand West zone is higher than the national average. The Grand Center zone shows performances similar to the national average. As for the Grand North zone, its performance is below the national average.

In the Anglophone sub-system, at the beginning of the cycle, the performance of pupils in the private Anglophone zone is higher than the national average. The Francophone zone shows performances similar to the national average. As for the government Anglophone zone, it shows lower performance than the national average in reading and similar performance in Mathematics. On the other hand, at the end of the cycle, it is rather the Francophone zone that shows average performances above the national average. At this level, the private Anglophone zone performs similarly to the national average. The government Anglophone zone performs below the national average in Mathematics and similarly in reading.

On the basis of the results observed, the main findings were as follows:

The Cameroonian education system occupies an average place among the countries in the PASEC2014 survey. However, a remarkable proportion of pupils do not yet master the knowledge and skills considered sufficient to continue schooling in good conditions.

- The performance of certain areas is worrying, particularly that of the Far North in the Francophone sub-system and the Anglophone public area, where, at the beginning and end of schooling, pupil results are particularly low;

- The Far North zone (Francophone subsystem) and the Anglophone government zone concentrate on average more disadvantaged pupils who have not benefited from pre-school education, compared to the other zones;

- Schools are differently equipped, both in terms of classroom equipment and school infrastructure; this is generally to the disadvantage of the Far North zone (French-speaking subsystem) and the Anglophone government zone;

- Pupils enrolled in the schools with the most pedagogical resources have higher average performances than their peers in the schools with the least resources;

- Differences in performance are observed according to the location of the school: pupils in urban areas perform much better than pupils in rural areas in both subsystems;

- Public schools would perform as well as public schools if they have a comparable school environment;

- Girls perform lower than boys in Mathematics in the Francophone subsystem;

- High pupil age is negatively associated with school performance;

- Repeaters always perform lower than non-repeaters. The evaluation shows that repetition as practised is not an effective pedagogical measure enabling pupils in difficulty to catch up.

CHAPTER 2

METHODOLOGY

The PASEC survey seeks to study the level of efficiency and equity of education systems, as well as the evolution of the achievement of these objectives in the countries. The methodology adopted for this purpose makes it possible, among other things, to assess the level of performance of pupils and to determine the in-school and out-of-school factors likely to influence the teaching-learning process.

In order to evaluate the achievement of these objectives, the PASEC methodological model is based on the measurement of pupils' knowledge and skills in the language of instruction and in Mathematics at the beginning and end of primary schooling, on the one hand, and of teachers' knowledge in Reading Comprehension, Mathematics and the didactics of these two learning areas, on the other. Data collection is carried out among a sample of pupils, representative of the school population in the surveyed grades in each country and among teachers in the surveyed schools.

Two key concepts in this report should be understood in the context of the characteristics and objectives of the PASEC surveys (2014 and 2019).

- **An effective education system** ensures that all children have the expected skills and attitudes (set by the curriculum) at the end of primary school. A system is considered effective when it enables all children, or at least a critical mass of them, to acquire certain basic skills: at the beginning of the primary cycle, those that must be acquired to continue the cycle profitably and successfully; and at the end of the primary cycle, those that are essential to continue their schooling under good conditions.

- **An equitable education system** tends to reduce inequalities in enrolment and achievement between different learner profiles, between different types of schools and between regions. A fair distribution of educational resources between regions and between schools within regions is a first step towards this goal.

The PASEC2019 evaluation also collected a great deal of contextual information on pupils, teachers, head teachers, classes and schools to assess the profiles of learners and teachers, to judge the level of resource allocation, and to understand school practices in order to link them to pupil performance (see Table 1).

Linking this information to PASEC test scores provides benchmarks of system effectiveness and equity. The tests, questionnaires, survey procedures and data analyses are standardized for all countries throughout the assessment process to ensure comparability of results across countries and over time.

Table 4: Structure of the PASEC2019 assessment

	Instruments	Themes analyzed
Pupil Competence Scale	Pupil Tests	Level of knowledge, skills, abilities of the pupil
Competence scale of Teachers	Teachers' tests	Level of skills and knowledge of the contents taught and the didactics of these contents among the teachers
Characteristics of the school, the classroom and the family	Pupils' Questionnaire	Socio-economic and cultural status of families; educational resources and learning opportunities at home; personal characteristics of pupils; pupils' educational background; physical conditions for learning; perception of school and desire to learn
Characteristics of the school, the classroom and the local community	Questionnaire for teachers and head teachers	Classroom infrastructure, equipment, functioning and resources; absenteeism and learning opportunities in the classroom; personal and professional characteristics of teachers; teaching practices and teachers' representations; school infrastructure, equipment, functioning, resources and control; resources and involvement of the local community in the school; personal characteristics and professional profile of the head teacher; administrative and pedagogic practices and head teacher's representations; school support practices in the school and actors' representations
Characteristics of the country, its education system and its education zones	Exploratory study for the establishment of a common reference framework of competences for CONFEMEN countries/ National education policy documents and international databases relating to education	Socio-economic and geographical context; curricula and official school time; multilingualism and language of instruction; learning assessment policy; education model and schooling

2.1. PASEC2019 TESTS AND QUESTIONNAIRES

PASEC tests are constructed on the basis of:

i.   the different stages of learning reading and Mathematics, the mechanisms involved in this learning and the difficulties encountered by pupils.

ii.   the main areas of teaching in reading and Mathematics in the curricula of the participating countries.

iii. the measurement standards in reading and Mathematics commonly used at the international level.

PASEC tests, as indicated by their characteristics presented above, do not specifically assess the degree to which pupils have effectively mastered the national curricula, but contribute to assessing pupils' abilities to achieve more general objectives ('key competences') based on a common, universal language-reading and mathematical reference framework that is adapted to the challenges of today's schools and societies (LMTF, 2013).

The PASEC assessment is therefore an external, international measure that complements national assessments, which set their own standards according to the specific objectives of national education systems. To this end, PASEC supports several countries in the establishment and development of national assessment systems that include large-scale assessments.

The teacher survey instruments assess, in part, the competences expected of a pupil at the end of primary school, regardless of the class the teacher is teaching. This option is based on the principle that a primary school teacher must be capable of teaching at all levels of the cycle, since he or she may be assigned at any time to a class at a level other than the one he or she teaches. It is also based on the requirement that every teacher should have in mind the exit profile of a pupil at the end of primary school in terms of skills. On the other hand, the teacher tests assess a specific dimension of the profession, namely the use of didactic knowledge through two major professional competences:

•   Planning a learning situation,
•   Identifying the types of errors made by pupils.

The development of the tests followed a scientific process in line with international assessment standards. The test items were designed in French and English by PASEC in collaboration with the PASEC national teams of all the countries participating in the PASEC2019 international assessment. These items have been validated by the PASEC Scientific Committee. A committee of experts from the Center for Educational Research of the University of Liège in Geneva, together with the national experts, contributed to the development of these measurement instruments.

Two separate cognitive workshops were held respectively in Togo on the pupil testing instruments and in Niger on the teacher survey instruments in order to observe, pre-test and adjust these instruments.

All these steps were carried out in collaboration with national and international experts with strict respect for standards of technical quality and international comparability. The translation and adaptation of the tests into languages other than French was carried out by a group of national translators and experts under the supervision of a specialized agency. This agency specializes in the linguistic adaptation of items for international assessments. The adaptation process included independent verification and final validation by the country.

The administration procedures and the functioning of the items in all language versions (French, English, Arabic, Hausa, Zarma, Kirundi, Malagasy) were tested during a pilot of the instruments in April 2018 in all participating countries with a small sample of 20 schools. This phase assessed the individual functioning of the items and the overall consistency of the tests at national and international levels. Deficient items were adjusted or removed on the basis of their psychometric characteristics. The analysis of the data from this piloting led to the selection of the items and context questions included in the final tests. These final tests were validated in November 2018 and then administered in all countries between April and May 2019 with a nationally representative sample of schools. As in the piloting phase, items were analyzed to assess the overall consistency of the tests and the functioning of individual items at national and international levels. The items retained after the psychometric analyses were integrated into the PASEC2019 international score scales.

In Cameroon, as in 2014, this PASEC2019 survey concerned the two educational subsystems: Francophone and Anglophone. Pupils in the Francophone subsystem were assessed in French and those in the Anglophone subsystem in English.

2.1.1. The primary school entrance tests

The PASEC2019 tests at the beginning of primary schooling are administered to pupils in the second year of primary school to measure the skills acquired during their first learning of the language of instruction and Mathematics. This makes it possible to make an early assessment of their basic skills. The test also makes it possible to identify the learning difficulties that pupils generally face at the beginning of the primary cycle. The average duration of the tests is about 30 minutes per subject.

2.1.1.1. Test in the language of instruction

At the end of the second year of primary school, which in most countries corresponds to the end of the first sub-cycle of learning, the curricula indicate that all apprentice readers in CONFEMEN countries should be able to read and understand a short, simple and familiar message. This ability implies that the pupil has reached a first level of deciphering to recognise familiar words, to automate the mechanisms related to deciphering the written word and to have a sufficient level of oral comprehension in the language of instruction. These different abilities are assessed in this test.

The PASEC2019 test assesses the three core areas of:

1. Listening comprehension;
2. Reading-decoding;
3. Reading Comprehension (see table below).

Each of these areas is assessed in turn, in phases, through a series of exercises. Each exercise includes an example and a sequence of items.

Table 5: Areas assessed by PASEC2019 in Early Language

Composition of the test	Domains assessed	Exercises and skills assessed
37,2%	Listening comprehension: Oral comprehension is assessed through oral messages combining isolated words and phrases and texts. The development of skills in this area allows pupils to extend their vocabulary to automate decoding in reading through the correspondences established between oral and written language.	1. Understanding vocabulary 2. Recognising vocabulary 3. Recognising word families. Recognising 4. Understanding a text Understanding a
27,9 %	Reading-decoding: Reading-decoding is assessed through graphophonological identification situations (of letters, syllables and words) and easy letter and word reading activities. The development of skills in this area enables pupils to automate their reading to determine the meaning of words and sentences, and thus extend their vocabulary.	
34,9 %	Reading Comprehension: Reading Comprehension is assessed through reading situations involving isolated words and sentences and texts in which pupils are required to locate, combine and interpret information. The development of skills in this area enables pupils to read independently in a variety of everyday situations, to develop their knowledge and to participate in society.	Decoding the meaning of words Reading and understanding sentences Understanding texts

2.1.1.2. Mathematics test

The PASEC Mathematics tests reflect the processes necessary for the acquisition of basic skills in arithmetic, geometry, space and measurement, and enable the pupil to move from an analogical and intuitive knowledge to a symbolic knowledge of mathematical concepts. The aim is to identify the stages in the acquisition of basic skills at which pupils experience difficulties in order to guide educational policies in the implementation of remedial measures or in the reorientation of curricula and teaching practices.

The PASEC2019 Mathematics test measures pupils' basic skills in two key areas:

1.   Arithmetic;

2.   Geometry, space and measurement (see table below).

The test focuses on arithmetic and geometry, which provide the foundation for broader knowledge. These are also the most commonly taught subfields in the early primary years. Some measurement knowledge is also assessed. Measurement is usually associated with arithmetic. However, in the Grade 2 PASEC test, measurement refers to more general concepts such as weight, size and volumes and is distinguished from arithmetic, which refers only to quantities of objects or numerical quantities.

Table 6: Areas assessed by PASEC2019 in Mathematics - Early Schooling

Composition of the test	Domains assessed	Exercises and skills assessed
72,5 %	Arithmetic : Arithmetic is assessed through counting, enumerating and manipulating quantities of objects, operations, number sequences and problem solving. The development of skills in this area enables pupils to move from an intuitive to a symbolic knowledge of numbers.	Count to 100; Count to 100; Recognising digits and numbers; Counting objects; Counting objects; Discriminate between quantities of objects; Discriminate between quantities of objects; Ordering numbers - (largest); Ordering numbers - (largest); Ordering numbers - (smallest); Completing sequences of numbers; Adding and subtracting; Solving problems; Solving problems;
27,5 %	Geometry, space and measurement: Measurement is assessed through situations involving the recognition of geometric shapes and around notions of size and spatial location. The development of skills in this area enables pupils to move from an intuitive knowledge to a symbolic knowledge of the concepts of geometry, space and measurement.	Recognizing geometric shapes; Finding one's bearings in space; A appreciate quantities.

2.1.2. Primary school leaving tests

The PASEC2019 end-of-primary-school tests assess the knowledge and skills in reading and Mathematics that are essential for pupils to continue their education in secondary or vocational education. They also assess the ability of pupils to use their skills to understand, learn and integrate into situations in their everyday environment. The tests consist of multiple-choice questions (MCQs), and their overall duration is a maximum of two hours per subject.

2.1.2.1. Test in the language of instruction

At the end of primary school, the PASEC2019 test assesses knowledge and skills in Reading Comprehension based on two categories of written material offered to pupils: (i) narrative texts (ii) informative texts and documents. This classification of written materials by sub-component is based on the work of Werlich (1976) and more recent ones (Crinon, Lectaire-Halté and Virot-Goeldel, 2017), but also on international experiences in measurement. Decoding activities of isolated words and sentences are of minor importance at this stage (see Table 7).

Table 7: Areas assessed by PASEC2019 in reading - end of school

Composition of the test	Domains evaluated	Reading material
16 %	**Comprehension of single words and phrases**: Comprehension of isolated words and sentences is assessed through reading situations involving the discovery of the explicit meaning of isolated words and sentences. The development of skills in this area allows pupils to automate their reading to gradually access the meaning of sentences and texts and to expand their vocabulary. The level of these tasks is very basic and corresponds to the objectives of the early primary school curriculum.	Images, words and phrases in isolation
84 %	**Reading Comprehension**: Reading Comprehension is assessed through reading situations involving narrative, informational and document texts, from which pupils are required to extract, make simple inferences, interpret and combine information. The development of skills in this area enables pupils to read independently in a variety of everyday situations to develop their knowledge and participate in society.	Narrative texts (39%) and informative texts and documents (45%)

2.1.2.1. Mathematics test

Mathematics tests reflect the processes necessary for the acquisition of basic skills in arithmetic, geometry, space and measurement, enabling the pupil to move from analogical and intuitive knowledge to symbolic knowledge of concepts. The aim is to identify the stages in the acquisition of basic skills at which pupils experience difficulties in order to guide educational policies in the implementation of remedial measures or in the reorientation of curricula and teaching practices.

Table 8: Areas assessed by PASEC2019 in Mathematics - end of school

Composition of the test	Domains evaluated
47,6%	**Arithmetic**: Arithmetic skills are assessed through understanding numbers: knowledge and understanding of the priorities of operations and the properties of the four operations; operations on numbers such as add, subtract, multiply, divide. They are also assessed through understanding decimal numbers and percentages.
35,7%	**Measurement and magnitude**: Skills relating to measurement and magnitude are assessed through knowledge and understanding of units of measurement for length, mass, capacity, angles, duration, and the conversion of these units of measurement. They are also assessed through calculations of magnitude (length, duration, mass, capacity, angle, area, volume) in different contexts using geometric figures in the plane (triangles, rectangles, squares, parallelograms or disks) or solids (cube or rectangular parallelepiped).
16,7%	**Geometry and space**: Skills related to geometry and space are assessed through situations involving the recognition of properties of two- and three-dimensional geometric shapes; geometric relationships and transformations; and spatial positions and representations.

2.1.3. The instruments of the teacher survey

Compared to the PASEC2014 assessment, the 2019 assessment introduces an additional module for teachers to assess their mastery of the content taught in primary school in Reading Comprehension and Mathematics and their level of knowledge in the didactics of these subjects on an international and national scale.

2.1.3.1. Tools in the language of instruction

The language of instruction tools makes it possible to measure and compare, at national and international levels (i) teachers' level of mastery of the subject knowledge taught in primary school and (ii) their level of knowledge of the didactics of Reading Comprehension.

Table 9: Areas assessed by PASEC2019 in Reading Comprehension and didactics of Reading Comprehension

Composition of the test	Domains evaluated
72,2%	**Reading Comprehension** : Competence in Reading Comprehension is assessed through mastery of the language of instruction, access to the meaning of the text and knowledge of the structures of the language.
27,8%	**The didactics of Reading Comprehension**: Competences in the didactics of Reading Comprehension are assessed through the analysis of a learning situation in Reading Comprehension: knowing how to extract the targeted objectives, making choices to make a learning objective and a coherent exercise and then identifying and analysing the types of errors in pupils' productions in this subject area.

2.1.3.2. Mathematical tools

The Mathematics tools make it possible to measure and compare at national and international levels (i) the degree of mastery by teachers of the mathematical knowledge taught at primary level and (ii) their level of knowledge in Mathematics didactics.

Table 10 : Areas assessed by PASEC2019 in Mathematics and Mathematics didactics

Composition of the test	Domains evaluated
86,1%	**Mathematics**: Knowledge and skills in Mathematics are assessed through exercises in arithmetic, magnitude - measurement, and geometry and space, allowing the mastery of mathematical knowledge to be taught throughout the primary cycle and developing the ability to reason in order to solve
16,7%	**The didactics of Mathematics**: Knowledge in didactics of Mathematics is assessed through the analysis of a learning activity in Mathematics: knowing how to extract the targeted objectives, making choices to make a learning objective and a coherent exercise, identifying and analysing the types of errors in pupils' productions.

2.1.4. The PASEC2019 contextual questionnaires

The PASEC2019 evaluation collected contextual data to assess the relationship between pupils' school environment and their performance. This information was collected from pupils, teachers and head teachers of the sampled schools. The PASEC questionnaires enables the analysis of the most relevant questions for countries in order to provide them with useful, reliable and comparable data and indicators in space and time. Through these instruments, the survey describes educational resources and practices at different levels of the system. Pupils' performance on PASEC tests is linked to these different contextual data on the determinants of learning and teaching processes.

The contextual questionnaires of the PASEC2019 assessment show an evolution guided by the findings of the review of the PASEC2014 questionnaires and by the consultation with countries and CONFEMEN partners.

The work of updating the questionnaires resulted in the streamlining of the Pupil Questionnaires. The Teacher Questionnaire has been renamed Teacher/Classroom Questionnaire. This questionnaire, in line with the implementation of the teacher survey, focuses on the teacher while remaining focused on the description of the class. The questionnaire is administered to all teachers in the sampled schools.

The head teachers' Questionnaire was renamed the head teacher/School Questionnaire in order to describe mainly the school environment and to reduce the number of Items concerning the head teacher. The focus on the school is intended to shed light on the learning conditions of the pupils tested.

Take into account the wealth of information reflected in the specification tables in section 1.1.1.2 of this chapter. Thus, 4 booklets are developed and distributed randomly in each class to the selected pupils.

For the teacher survey, data collection in the school is carried out by a test administrator with all teachers in the school on the fourth day of the survey. The administration of the entire survey (tests and contextual questionnaire) is carried out over one morning in each school. Four booklets are also prepared for this survey and are distributed randomly according to the principles of the "rotating booklet".

2.1.5. The samples

As with PASEC2014, the PASEC2019 international survey targets all pupils at the beginning (class 2) and end (class 5/6) of primary school, regardless of the type of school (government, private, etc.) and their location (rural/urban). The data are collected on a nationally representative sample of primary schools in a country with the levels of education considered.

The PASEC sample allows the estimation of educational outcomes of the countries participating in the assessment with a certain degree of accuracy without having to survey all pupils enrolled. Standards and quality control mechanisms are put in place by the program throughout the assessment process to ensure the completeness of the samples and the comparability of the results across countries and over time.

The sampling procedure for the selection of schools is conducted by PASEC in collaboration with the countries. Schools are sampled in each country from the most recent school sampling frame, which provides detailed information on the schools. Schools were selected in each country according to a standardised procedure: systematic sampling proportional to the cumulative enrolment size of pupils at the beginning (class 2) and end (class 5/6) of primary school.

The standard sample size of schools in PASEC2019 for the assessment of pupils at the end of the primary school year is 180 schools. A larger sample of schools was selected when a country wished to investigate specific educational issues. In this case, PASEC oversampled schools in some of the areas of that country in order to have a large sample size to disaggregate the results to the level of the relevant subgroup. Because of the specificity of the early schooling survey, a subsample of the full primary school sample is drawn to form the early schooling sample.

Within each of the schools selected at both the beginning and the end of schooling, a single class of the target level is selected from all classes of the same level, using a simple random procedure at the time of data collection. A sample of 25 pupils is selected from each sampled primary school leaving class. At the beginning of school, 16 pupils are selected from each sampled class.

The first level of stratification variables used in Cameroon's education subsystems concerns administrative regions or their geographical groupings. These different groupings are called "strata". The second level of grouping relates to the type of school (public, private). Thus, the sampling of schools in Cameroon was based on the eight French-speaking administrative regions of the country, because the two English-speaking administrative regions have been experiencing a security crisis since 2016. For the French-speaking subsystem, eight strata were retained, corresponding to the eight administrative regions and this made it possible to have two more strata than during the PASEC2014 evaluation. For the English-speaking sub-system, groupings made it possible to create four strata, i.e. one stratum less than in the previous assessment. These different strata are summarised in the table below.

Table 11 : Strata sampled in the two subsystems

Regions	Francophone Stratum	Anglophone stratum
Center	Center	Center Anglophone
West	West	Littoral Anglophone
Littoral	Littoral	West Anglophone
Adamawa	Adamawa	
East	East	
Far North	Far North	Elsewhere Anglophone
North	North	
South	South	
North- West	Not retained	Not retained
South West		

2.1.6. Administration of tests and questionnaires

Through the national teams, participating countries implement the assessment within the framework of the administration procedures established by PASEC. Test administrators, recruited in advance by the PASEC country teams, are responsible for data collection at school level. They are trained, supervised and monitored by the national teams. In order to ensure comparability of the data collected, a standard survey protocol has been put in place by PASEC. Administrators must scrupulously respect the standardised instructions contained in this protocol.

At the beginning of primary school, tests are administered individually to pupils by an administrator. The tests are administered over four mornings and involve a maximum of 16 pupils divided into two subgroups from the same class for each of the selected schools.

At the end of primary school, administration begins with the contextual questionnaire. The reading and Mathematics tests are administered over the following two days. The duration of the reading and Mathematics tests is a maximum of 2 hours each, with a 10-minute break after one hour. PASEC has adopted the technique of 'rotating booklets' to accommodate the wealth of information reflected in the specification tables in section 1.1.1.2 of this chapter. Thus, four booklets were prepared and distributed randomly in each class to the selected pupils.

For the teacher survey, data collection in the school is carried out by a test administrator with all teachers in the school on the fourth day of the survey. The administration of the entire survey (tests and contextual questionnaire) is carried out over one morning in each school. Four booklets are also prepared for this survey and are distributed randomly according to the principles of the "rotating booklet".

2.1.7. Data quality assurance

Quality assurance procedures were applied throughout the PASEC2019 evaluation under the control and validation of the PASEC scientific committee. The implementation of the different stages of design and selection of the assessment items (cognitive workshops and instrument testing) in strict compliance with the standards is a first guarantee of the quality of the assessment data. The PASEC2019 assessment technical standards specify, among other things, how the assessment should be implemented in each country. PASEC therefore prepared test administrator workbooks detailing in chronological order all the steps of the administration and the related protocol. A pair of PASEC technical advisers and PASEC country team members oversee the assessment administration process in each country and ensure that the agreed protocols are followed. The country team members provide quality control of the field operations through unannounced visits to the survey schools to observe test administration and compliance with procedures.

In order to guarantee the quality and linguistic equivalence of the instruments, PASEC involves an international agency traditionally involved in large international assessments to ensure the linguistic adaptation of its various instruments. As the instruments were designed in French, their adaptation into English, Arabic, Hausa, Kirundi, Malagasy and Zarma is ensured according to the required standards (double translation, conciliation, verification and national validation).

Based on their experience in similar surveys, their knowledge of education and their non-engagement in teaching during the year of the survey, test administrators are recruited and trained to ensure quality data collection in each country. They are divided into two groups, one in charge of administering the school entry test and the other in charge of the school exit test plus the teacher survey. They are trained separately with respect to the specificity of the survey targets. The best performing administrators are selected at the end of the training on the basis of their test results and their observed level of practice. The actors involved in the data collection process certify their willingness to ensure the confidentiality of the tests and data by signing a confidentiality agreement.

In each country participating in the PASEC2019 international evaluation, the instruments returned from the field are sorted by language version, by level surveyed, by type of instrument and by ascending order of PASEC identifier (schools) and pupil or teacher identifiers.

A coding manual was made available to the national teams responsible for recruiting and training coding agents. The latter sign a confidentiality clause and work under the direct supervision of the national team members.

The collection instruments as well as the computers used for data entry are placed in a room with restricted access to ensure the security and confidentiality of the data collected.

In order to ensure that coding and data entry procedures are strictly adhered to and that data is made available on time, the coding and data entry phases are monitored by PASEC during a support visit to each participating country.

In general, to guarantee the production of scientifically robust data, PASEC favours a participatory approach in the implementation of the evaluation by involving national teams, national and international experts in the various stages of the process through distance work and international workshops.

2.2. COUNTRIES OF THE PASEC2019 EVALUATION

The PASEC2019 assessment covers 14 sub-Saharan African countries that are members of CONFEMEN: Benin, Burkina Faso, Burundi, Cameroon, Chad, Congo, Ivory Coast, Democratic Republic of Congo, Gabon, Guinea, Madagascar, Niger, Senegal and Togo.

Table 11 below provides information on the demographic and socio-economic characteristics of the participating countries. The table shows that the annual population growth rate of these countries is on average less than 3%. The African average is 2.8%. Furthermore, the percentage of the population in the 0-14 age group varies between 37% (Gabon) and 50% (Niger), which puts a lot of pressure on educational provision requiring adequate financial investment (CONFEMEN, 2017).

With regard to the Human Development Index (HDI), three categories of countries participating in PASEC2019 emerge from the data in Table 1) one country with a high HDI (Gabon, 115th), 2) two countries with a medium

HDI (Congo, 138th and Cameroon, 150th), 3) low HDI (all other countries). In addition, according to the World Bank's updated classification of countries by income, three categories also emerge: 1) one upper-middle income country (Gabon), 2) five lower-middle income countries (Benin, Senegal, Cameroon, Congo and Ivory Coast), 3) seven low-income countries (Burkina Faso, Chad, Madagascar, DRC, Togo, Niger and Guinea).

The financing situation in the PASEC2019 countries appears to be just as varied as their socio-economic characteristics. Thus, six countries (Cameroon, Gabon, Guinea, Madagascar, DRC and Chad) devote less than 4% of their GDP to education, this percentage varying between 2.1% (DRC) and 2.9% (Chad). The other eight countries devote between 4% (Benin) and 5.1% (Senegal) of their GDP on education. Furthermore, the percentage of public expenditure on education allocated to primary education varies between 29.2% (Gabon) and 64.1% (Togo), while expenditure per pupil as a percentage of GDP varies between 6.3% (Chad) and 16.5% (Niger). These data confirm the fact that primary education is the priority sub-sector in the countries assessed as in all low- and middle-income CONFEMEN member countries (CONFEMEN, 2017; EQO, 2019).

Table 12: Demographic and socio-economic characteristics of participating countries

	Population			PNB	Public expenditure on education			IDH
	Total (in millions)	% of 0-14 years	Annual growth rate	(in billions of $US)	% of PIB	% affected to primary	Expenditure per primary school pupil (% PIB/inhab.)	Rank (over 189 countries)
Year	2019	2018	2018	2017	2016	2016	2016	2018
Benin	11,8	42,4	2,7	25,4	4	49,8	10,3	163
Burkina Faso	20,3	44,9	2,9	35,9	4,2	57,9	16,1	182
Burundi	11,5	45,5	3,2	8	4,7	45,4	12,9	185
Cameroon	**25,8**	**42,6**	**2,6**	**89,5**	**2,7**	**33,9**	**5,4**	**150**
Congo	5,3	41,8	2,6	29,4	4,6	--	11,7	138
Ivory Coast	25,7	41,9	2,6	97,2	5,4	44,5	15,8	165
Gabon	2,1	37	2,6	36,7	2,7	29,2	4,7	115
Guinea	12,7	43,9	2,8	28	2,5	40,5	6,8	174
Madagascar	26,9	40,7	2,7	39,9	2,8	--	6,6	162
Niger	23,3	50	3,8	21,9	4,1	50,7	16,5	189
RDC	86,7	46,2	3,2	68,6	2,1	61,6	7,2	179
Senegal	16,2	43,1	2,8	54,8	5,1	31,3	11,8	166
Chad	15,9	47,1	3	28,6	2,9	--	6,3	187
Togo	8	41,3	2,4	13	5	64,1	16,2	167

Source: UIS database, http://data.uis.unesco.org/?lang=fr, accessed February 2020; UNDP database (http://hdr.undp.org/en/2019- report) for HDI, accessed February 2020; CIA World Factbook (https://www.cia.gov/library/publications/the-world-factbook/) - version of 1 January 2018 for GNP, and World Bank database (http://donnees.banquemondiale.org/) for other indicators, accessed February 2020.

The 2030 Agenda, which defines the Sustainable Development Goals (SDGs) and in particular SDG4 on education, requires the adequate mobilization of significant financial resources for its achievement (Focus2030, 2018). For example, US$340 billion/year is needed to enable low- and lower-middle-income countries to achieve MDG4 (UNESCO, 2015). Moreover, even mobilising 6.56% of GDP in education spending would result in a US$39 billion gap, of which US$21 billion is for low-income countries (UNESCO, 2015). Given that spending on education in PASEC2019 countries does not exceed 6%, additional efforts are needed to achieve the goal of inclusive and quality education for all. This is particularly valid for Cameroon whose situation in this area is among the worst.

Table 12 shows an average primary school age population of around 3.4 million, with large disparities between Gabon (around 250 000), Niger (around 4 million) and DRC (over 14 million). Gross primary school enrolment rates vary widely, from less than 80% in Niger (74.4%) to more than 100% in several countries including Benin (121.9%) and Madagascar (142.5%). Furthermore, the education systems of the PASEC2019 countries appear to be relatively parity-based, with gender parity indices close to 1 for almost all the countries except for Guinea (0.81),

The HDI (Human Development Index) is a composite index based on life expectancy at birth, adult literacy rate, gross enrolment ratio and the decimal logarithm of GDP per capita in purchasing power parity. It is calculated by the UNDP.

Niger (0.86) and Chad (0.77). Finally, there is almost uniformity in the language of instruction, which remains French, except in Burundi (Kirundi), Madagascar (Malagasy), Cameroon (English) and Chad (Arabic).

Table 13: Primary school enrolment indicators

	Primary school age Population	Gross enrolment rate	Completion rate	Gender parity index Gender parity index	Languages of instruction Languages of instruction	Youth literacy rate
Year	2019	2018	2018	2018	2019	2018
Benin	1 868 668	121,90%	47,60%	0,93	French	60,90%
Burkina Faso	3 420 701	96,10%	----------	0,98	French	58,20%
Burundi	1 859 892	121,40%	53,30%	1,01	French and Kirundi	88,20%
Cameroon	**4 160 744**	**103,40%**	**73,60%**	**0,9**	**French and English**	**85%**
Congo	858 816	----------	80,00%	----------	French	82%
Ivory Coast	3 991 298	99,80%	56,70%	0,92	French	58,40%
Gabon	250 029	----------	----------	----------	French	89,80%
Guinea	2 052 385	91,50%	53,70%	0,81	French	46,30%
Madagascar	3 467 514	142,50%	----------	1,00	French and Malagasy	81,20%
Niger	4 015 255	74,70%	----------	0,86	French [3]	----------
RDC	14 684 467	108%	68,90%	0,93	French	85%
Senegal	2 646 357	81,00%	50,10%	1,11	French	69,50%
Chad	2 767 970	86,80%	27,30%	0,77	French and Arab	30,80%
Togo	1 274 448	123,80%	61,30%	0,96	French	84,30%

Source: UIS database, http://data.uis.unesco.org/?lang=fr, accessed February 2020, CONFEMEN 2017

Gross enrolment rates in primary education have stagnated or declined in most of the countries in the assessment over the past five years, as shown in the UIS database. Beyond the various socio-economic, political and security contingencies that characterise the region, this situation means, among other things, that the expansion of access to school has been slower than the rate of population growth in the countries.

In this same context, achieving MDG4 remains a very difficult challenge for many of these countries. The goal of inclusive quality education for all requires not only enrolment and quality learning for all, but also retention of pupils in the education system. However, more than half of the countries, according to the UIS database, have not been able to improve their completion rates over the past five years. But it can also be noted that few countries have made significant progress in improving their gender parity index, and in reducing disparities and inequalities in schooling between rural and urban areas (UNDP, 2017).

As for literacy-one of the components of the HDI-despite continued improvement in its indicators worldwide, the literacy rate remains relatively low in sub-Saharan Africa (UNESCO, 2018). The number of illiterate youths aged 15 to 24 is still stagnating in 2019 in this part of the African continent, while it has declined in North Africa and West Asia (UNESCO, 2018).

Despite the persistent issue of schooling for all as a challenge for countries in the region, the emerging concern is that of moving from access to success in school. The challenge of quality, which is at the heart of political commitments, is manifested in the region by a particular interest in relevant teaching content, and more broadly in a curriculum adapted to the actual needs and expectations of the populations.

In Niger, Hausa and Zarma are not yet official languages of instruction as Kirundi and Malagasy are in Burundi and Madagascar respectively. The extension of the experimentation of national languages in the Nigerien education system is underway, and as a result the country is carrying out an evaluation of the achievements of a sample of national language schools in the framework of PASEC2019.

Figure 2: Map of countries participating in the PASEC2019 assessment

Note: Four countries (Gabon, Madagascar, Guinea, DRC) have been added to those in 2014.

---

21 According to UNESCO, the adult literacy rate continues to improve steadily and reached 86% globally in 2017. This means that 750 million adults were illiterate. Regionally, the rate ranges from about 65% in sub-Saharan Africa to almost 100% in Europe and North America.

22. According to UNESCO, the adult literacy rate continues to improve steadily and reached 86% globally in 2017. This means that

750 million adults were illiterate. Regionally, this rate ranges from about 65% in sub-Saharan Africa to almost 100% in Europe and North America.

2.3. TRENDS IN CURRICULAR POLICIES IN THE PASEC2019 ASSESSMENT COUNTRIES

The education systems of the PASEC2019 evaluation countries share important commonalities as indicated by the characteristics revealed by their official curricula (CONFEMEN, 2018).

In terms of curricular policy and the structure of school systems, it is clear that these countries have defined an educational and curricular policy over the last two decades that is intended to break with previous policies. It appears to be more concerned with the quality of pupils' learning and remains marked by a strong focus on the actual framework of schooling. In all the countries surveyed by PASEC, in various ways, a set of documents (CONFEMEN 2018) testifies to this attention characterised by a search for a few constants, namely a marked interest in basic education, the aims of the school, the coherence of schooling and, more particularly, largely common concerns about knowledge and skills (CONFEMEN 2017, Cros et al. 2010).

The trend in the evolution of the official curriculum in the PASEC evaluation countries is that of a school aiming at the acquisition of competences by pupils - and not only of knowledge. It is within this dynamic that the curricular reforms carried out over the last two decades have largely converged towards a competency-based approach, understood in a broad sense to include knowledge, culture, attitudes and values, with an emphasis on cross-curricular competencies previously neglected because of the traditional emphasis on disciplinary or academic knowledge.

Teacher education is affirmed, through national and regional policies, as central to the quest for quality and equity in education for all. The training schemes and programs declared in almost all the countries of the evaluation show a desire to move towards practices centred on the needs of pupils, both in classroom activities and in everyday life. These practices seek to make the learner the actor of his or her own learning, which directly implies teaching based on active learning.

The preparation of teachers for the implementation of the curricula is based on guidance documents in the form of teaching guides.

Initial teacher training is provided in most countries through training institutes or teacher training colleges. The training programs of these institutions, which have been renovated in some cases, are not very closely aligned with those of basic education, or have not yet been so. The coherence of teacher training and education as practised at the basic education level remains a challenge in almost all French-speaking sub-Saharan countries.

In-service training is present in many countries with the setting up of pedagogical conferences, training groups, pedagogical animation units and training modules. Some training courses are also delivered in alternation (between study and professional internship) and accelerated when it comes to contractual staff.

Despite the existence in some countries of pedagogical implementation guides that accompany the programs, the consistency of the training envisaged for teachers with the new orientations prescribed by the curriculum is still problematic.

As regards the assessment of learning outcomes in the countries, it should be noted that, at the end of the teaching-learning process, the logic of examinations and promotion has most often remained relatively unrelated to curricular developments. Analysis of texts on evaluation and examination practices (CONFEMEN, 2017) first of all allows us to perceive, for most countries, the de facto contradiction between a policy that would like to welcome all children in basic education and problems of regulation of the flow at the entrance to secondary education. Also, practices such as repetition, based on annual assessments, remain an important tool of this regulation, contradicting the logic of cycle or even continuous schooling. The logic of sanctions seems to be more present than the logic of certification and capitalisation of competences when these are effectively installed.

If attention to competences is although examinations are to be found in almost all curricular texts, they seem to have remained alien to this attention.

Thus, the curricula of several sub-Saharan countries mention the political will to abolish transitional examinations, in particular between primary and secondary education. However, according to the formal texts, there is little evidence that such projects are being implemented.

In terms of language, in all the countries included in the PASEC2019 evaluation, French as a language of instruction coexists with national or local languages and even with English in Cameroon and Arabic in Chad. The general texts refer to the promotion of bilingualism in schools (with the languages referred to as national or regional) and the introduction of French from primary school.

On observation of the knowledge and skills in the field of language teaching in the countries concerned, a diversity of language policies is noted. It appears, however, that in many cases, the realities are even more complex than the national normative texts indicate.

In most of the education systems evaluated, the introduction of bilingualism in schools, with English and national languages as mediums of instruction, is planned. The initiative presented as beneficial in terms of learning for pupils (IUL and ADEA, 2010; ELAN Afrique, 2015) is characterised by a gradual linguistic transition through the use of national languages or languages of socialisation from the first years of learning before leading to English as the language of instruction during the course of the curriculum. This approach is being tested or extended in many PASEC2019 countries.

The PASEC2019 evaluation retains the program's methodology of grouped evaluation, with updated instruments through a participatory approach involving all countries. Fourteen sub-Saharan countries are participating. These countries vary in their demographic and economic importance and have relatively diverse characteristics in relation to education, all of which will be used throughout this report to analyse the effectiveness and equity of educational outcomes.

This report shares the results of the ground-breaking survey of teachers' professional competencies, and initial analyses of changes in the performance of education systems over time.

2.4. READER'S GUIDE

2.4.1. Construction of the PASEC performance scales

In 2014, the PASEC reading and Mathematics performance scales were constructed to have an international mean of 500 and a standard deviation of 100. In order to monitor the evolution of the performance of education systems, the cognitive tests items of the PASEC2014 assessment have been included in extenso in the PASEC2019 assessment tests. These common items, classically referred to as anchor items, allow the 2019 results to be brought back to the 2014 scales.

The PASEC2019 assessment data were thus calibrated according to an item response model, as in 2014, and then transformed to the 2014 scales in order to estimate the evolution of pupils' average performance.

2.4.2. Definition of 'sufficient' competency thresholds

As in 2014, for each competency scale, a so-called 'sufficient' threshold is used to determine the proportion of pupils who have a greater probability of mastering (above the threshold) or not mastering (below the threshold) the knowledge and competencies deemed essential to pursue their schooling normally without difficulty.

The thresholds are defined on the basis of the concepts assessed in the PASEC tests and according to the priority objectives of language/reading and Mathematics set in the curricula at the beginning and end of primary school.

2.4.3. Construction of contextual indices

Several questions administered to pupils, teachers and head teachers were synthesised in the form of indices. An index combines and synthesises several pieces of observed information (variables) intended to measure the same construct. For example, the index of families' socio-economic capital uses pupils' declarations on the possession of a certain number of goods, more specifically the number of books, electricity, a television set, a computer, a radio, a telephone, a freezer, an air conditioner, a car, a tractor, a moped, a running water tap, a latrine with running water, etc. Like the performance scales, these indices were constructed using Item Response Theory (Rasch model). To facilitate the interpretation of these indices, the scores are reported on an international scale of mean 50 and standard deviation 10.

2.4.4. Estimation, standard error and significance of differences

All the results published in this report are based on observations of samples and not of the whole population. This is what is classically called in statistics as estimates of population parameters since, with other samples of the same size, these results would have been slightly different. They therefore do not correspond as exactly to the values that might have been observed if all the pupils in a country had been surveyed by PASEC. The differences in results that might be observed from one sample to another is quantified by the standard error. It allows the construction of confidence intervals around the estimated parameters in which the desired values of the population could be found, albeit with a small risk that they will not be found. The higher the risk, the narrower the range and the lower the risk, the wider the range. Generally, in the humanities and social sciences, scientists work with a maximum risk of 5%. Tests of comparisons of means and analyses are therefore carried out at the 1% and 5% thresholds. The symbols ''**'' and ''***'' are used to indicate significance levels of 5% and 1% respectively.

The standard errors are presented opposite each estimate in the annexed tables. The standard error plays an important role in determining, for example, whether the estimated means of two countries differ. For example, let us assume that the average performance of country A is 5 points higher than the average of country B. In this particular case, the underlying question of the statistical test is to calculate the probability of drawing two samples (one per country) that would give us a difference of at least 5 points in absolute value, samples that would be drawn from two populations with perfectly identical average performance. If this risk is high, we accept the equality and if this risk is low (smaller than 0.05), we reject the equality. Indeed, in the latter case, since it is very unlikely to draw two samples that would give us a difference of at least 5 points, we conclude that the populations are different.

In the graphs published in this report, if the difference between two means is said to be significant, it is represented by a dark colour. A light colour indicates that the differences are not significant. The tests for comparisons of means are performed at the 1% and 5% thresholds.

2.4.5. Differences and dispersion of scores between pupils

In some countries, pupils' scores may be concentrated around the mean, while in others, the dispersion of scores may be very large. This greater or lesser variability is generally used as an indicator of equity. Indeed, the more scores are dispersed around the average, the greater the differences in scores between high and low performers and the more inequitable the education system will be considered to be. Conversely, the more a country manages to limit the differences in performance between these two groups of pupils, the more equitable it will be considered to be. Generally, the dispersion of performance is quantified by the standard deviation. Alternatively, as in this report, the difference between the 90th percentile (the score that separates the top 10% of pupils from the bottom 90%) and the 10th percentile (the score that separates the bottom 10% of pupils from the top 90%) can be presented.

2.4.6. Crude effects and relationships between scores and contextual variables

In this report, various relationships between contextual variables and pupil performance are presented. However, these contextual variables are often closely related to each other. For example, parents with higher levels of qualification tend to have a better professional situation which often translates into higher material comfort, better command of the language of instruction, more books at home, etc. Therefore, when looking at the effect of the number of books at home on Reading Comprehension, this contextual variable carries with it some of the other variables mentioned above. The results should therefore not be over-interpreted. In order to know the net effect of the number of books, for example, it is necessary to insert the other contextual variables into the model. In this case, we would say that the effect of the number of books at home, controlling for the other modelled variables, amounts to X. This raises the question of what the effect of the number of books in the home would be if the pupils tested were perfectly similar with respect to the other variables included in the model, with the exception of the number of books of course. This problem does not only concern the pupil variables. For example, schools in urban areas are generally better equipped than rural schools and are attended on average by more advantaged pupils. The simple comparison between rural and urban schools therefore carries with it these other differences. It is therefore, important to put into perspective the effect of other contextual factors that might attenuate, erase or amplify the identified links. In statistical terms, comparisons between two or more groups are not made 'all other things being equal' in this report.

2.4.7. Rounding

All values are rounded to one digit after the decimal point. The values presented are calculated and rounded beforehand. As a result, small differences between the total or the deviation of the values available in a table may occur.

CHAPTER 3

ACADEMIC PERFORMANCE OF EARLY PRIMARY SCHOOL PUPILS

This chapter will be devoted to the presentation of the results of pupils at the beginning of primary school. The aim is to present the performance levels of pupils in reading and Mathematics. Thus, the distribution of pupils on the PASEC2019 competency scale will be presented. An analysis in relation to the international level will be briefly discussed. Thereafter, the results for the different zones of Cameroon will be presented independently for each of Cameroon's education sub-systems.

The following analyses of the school performance of pupils at the beginning of primary school in Cameroon will be discussed: (i) an international comparison and (ii) an intra-national comparison between the different strata of the country, as retained in the framework of PASEC2019.

3.1. THE CAMEROON PUPILS IN INTERNATIONAL COMPARISON

It should be noted at the outset that the results of pupils at the beginning of primary school in Cameroon in the PASEC2019 evaluation constitute useful information on the strengths and weaknesses of the Cameroonian education system. However, when reading the comparative analyses that will be presented below, it is important to take into account the economic, socio-political and security context in which these results were obtained.

3.1.1. Pupils' Language and Mathematics skills

Tables 13 and 14 present the PASEC2019 proficiency scale for early primary schooling in language and Mathematics. This proficiency scale reports on the performance of pupils in the first grade in Cameroon on the language and Mathematics test. It presents the range of scores for each level, the distribution of pupils at the different levels of the scale and the description of the knowledge and skills corresponding to these levels. Pupils at a given level are likely to be fluent in the tasks at that level, less fluent in the tasks at higher levels and better in the tasks at lower levels. The 'sufficient' threshold in language or Mathematics, defined by a red band in the table, is in line with the standard set internationally in the PASEC2019 assessment.

This language threshold corresponds to the lower limit of level 3 of the international proficiency scales, i.e. at least 540 points for the language proficiency scale, at the beginning of school.

Table 14: PASEC2019 Language Proficiency Scale - Early Schooling

Levels	Score	International distribution of pupils in the scale levels (%)	National distribution of pupils in the scale levels (%)	Description of competences
Level4	> 610 points	23,5%	20,0%	Intermediate reader: towards independent reading to understand sentences and texts Pupils have reached a level of reading and listening comprehension that enables them to understand explicit information in short sentences and texts. They are able to combine their decoding skills with their command of oral language to reconstruct the literal meaning of a short text.
Level 3	Between 540 and 610 points	21,0%	19,4%	Apprentice reader: towards perfecting reading, listening and Reading Comprehension skills Pupils have developed their listening and decoding skills to focus on word comprehension. In listening comprehension, they are able to understand explicit information in a short text with familiar vocabulary. They gradually develop links between oral and written language to improve decoding skills and extend vocabulary. In Reading Comprehension, pupils are able to identify the meaning of single words.
Sufficient' threshold of competence				
Level 2	Between469 and 540 points	28,5%	28,1%	Emergent reader: towards the development of Reading Comprehension skills and the strengthening of listening comprehension skills Pupils have improved their listening comprehension skills and are able to identify a lexical field. They develop the first rudimentary links between oral and written language, and are able to carry out basic deciphering, recognition and graphophonological identification tasks (letter, syllable, grapheme, phoneme).
Level 1	Between 399 and 469 points	18,3%	20,7%	The awakening reader: first contacts with oral and written language Pupils are able to understand very short oral messages (isolated words) and familiar objects. They have great difficulty in deciphering the written word and in graphophonological identification (letters, syllables, graphemes and phonemes).
Below level 1	< 399 points	8,7%	11,8%	Pupils at this level do not sufficiently demonstrate the skills measured by this test in the language of schooling. These pupils have difficulty with the knowledge and skills of level 1

The data in Table 13 shows that, overall, around 55.5% of pupils in all the countries that took part in the PASEC*2019* assessment did not reach the 'sufficient' language proficiency threshold at the start of primary school. This category of pupils therefore has difficulties in improving their reading, listening and Reading Comprehension skills. However, 44.5% of pupils have reached the language proficiency threshold.

This is very worrying in Cameroon, since an average of 60.6% of pupils do not reach the 'sufficient' threshold in language at the beginning of schooling and 11.8% do not demonstrate any of the most basic skills measured by the PASEC2019 assessment in the language of schooling (these pupils, who are below level 1, are not capable of understanding an oral message in the language of instruction). Only 39.4% of pupils at the beginning of schooling in Cameroon have reached the threshold of language competence, with 20% being at level 4 of the competence scale. So about 2 out of 5 pupils have sufficient listening and decoding skills to focus on word comprehension. These pupils develop links between oral and written language to strengthen decoding skills and extend vocabulary to convey the literal meaning of a short text. They are also able to identify the meaning of single words.

The comparison within each level of knowledge and skills shows, however, slight disparities between the percentages for Cameroon and the average for the countries combined, only for "Below level 1" where the gap is significant. Indeed, while for all countries combined 8.7% of pupils at the beginning of primary schooling are not capable, on a routine basis, of applying the most basic knowledge and skills that the PASEC2019 survey sought to measure, in Cameroon this percentage rises to 11.8%. As observed at the international level, this automatically implies that these pupils do not demonstrate any language skills. Their language difficulties indicate that they are unable to solve more than half of the items in tests that consisted exclusively of Level 1 tasks, which explains their positioning below Level 1. These pupils could therefore experience serious difficulties in their further education if no effective measures are taken now.

Table 15: PASEC2019 Mathematics Competency Scale - Early Schooling

Levels	Score	International distribution of pupils in the scale levels (%)	National distribution of pupils in the scale levels (%)	Description of competences
Level 3	> 577 points	37,5%	29,1%	Pupils master the verbal chain (counting to 60 in two minutes) and are able to read numbers, compare numbers, complete sequences of numbers and carry out operations (addition and subtraction) on numbers above fifty. They can reason about basic problems with numbers below 20.
Level 2	Between 489 and 577 points	33,7%	29,0%	Pupils are able to read numbers, compare numbers, complete logical sequences and carry out operations (addition and subtraction) on numbers below 50. They manipulate spatial concepts (e.g. in front of, on, etc.). They begin to develop reasoning skills on basic problems with numbers below 20. They also identify most simple geometric shapes.
Sufficient' threshold of competence				
Level 1	Between 400 and 489 points	21,5%	30,2%	Pupils gradually develop their knowledge of mathematical language: they begin to read the first digits (below 10) and master the first notions of quantity (counting, comparison) with numbers below 20. They appreciate the relative size of objects and begin to identify simple geometric shapes.
Below Level 1	< 400 points	7,3%	11,7%	Pupils at this level do not sufficiently demonstrate the skills measured by this Mathematics test. These pupils are struggling with Level 1 knowledge and skills.

At the beginning of schooling in Mathematics, 71.2% of pupils in all countries participating in the PASEC2019 assessment did not reach the 'sufficient' threshold of competence. Their score was above 489 points. These pupils are able to read numbers, compare numbers, complete number sequences, perform operations and reason about basic problems. In the area of geometry, they can identify most simple shapes.

The top level is made up of pupils who scored above 577 points; they constitute a proportion of 29.1% in all PASEC countries. These pupils are at the top of the proficiency scale. They are able to identify information in small texts and deduce the procedures needed to solve the expected tasks. These pupils can engage in basic problem solving. They show a more refined understanding of addition and subtraction operations on numbers well above 50.

However, this proportion of pupils at the top remains low, whether at the beginning of primary school or not. It would therefore be necessary to quickly take cohesive measures to reduce the gaps and weaknesses of pupils in this subject.

On average, 28.2% of the pupils in all the countries that took part in this test scored less than 489 points in the test. They are below the sufficient competence threshold. These pupils have difficulties, for example, in answering short questions using the three processes assessed: knowing, applying and solving problems. In the area of numbers and operations, they have difficulty performing operations on numbers. Approximately 11.7% of these pupils are below level 1 on the competency scale. They have difficulties with level 1 knowledge and skills.

The situation is very worrying in Cameroon, given that Cameroonian pupils perform below the average of all PASEC countries. Only 58.1% scored at least 489 points on the test. These pupils can mobilize their basic knowledge to solve tasks that require analysis of the situation. In the area of magnitude and measurement, three out of five randomly selected pupils were able to solve a variety of problems involving area or perimeter calculations and were able to manipulate concepts of spatial location.

41.9% of pupils at the beginning of primary school in Cameroon are below the "sufficient" threshold of competency, with an average score of less than 489 points. Two out of three randomly selected pupils at the beginning of primary school in Cameroon cannot read the first numbers and master the first notions of quantity. They are not able to appreciate the relative size of objects or identify the first simple geometric shapes. Of these, 11.7% score less than 400 points, and do not sufficiently demonstrate the skills measured by this test in the language of schooling. These pupils have difficulty with level 1 knowledge and skills. As they are at the beginning of their primary education, they must be taken in hand quickly to avoid the risk of dropping out of school.

3

Graph 1: Percentage of pupils according to the level of language and mathematical skills achieved - Beginning of schooling
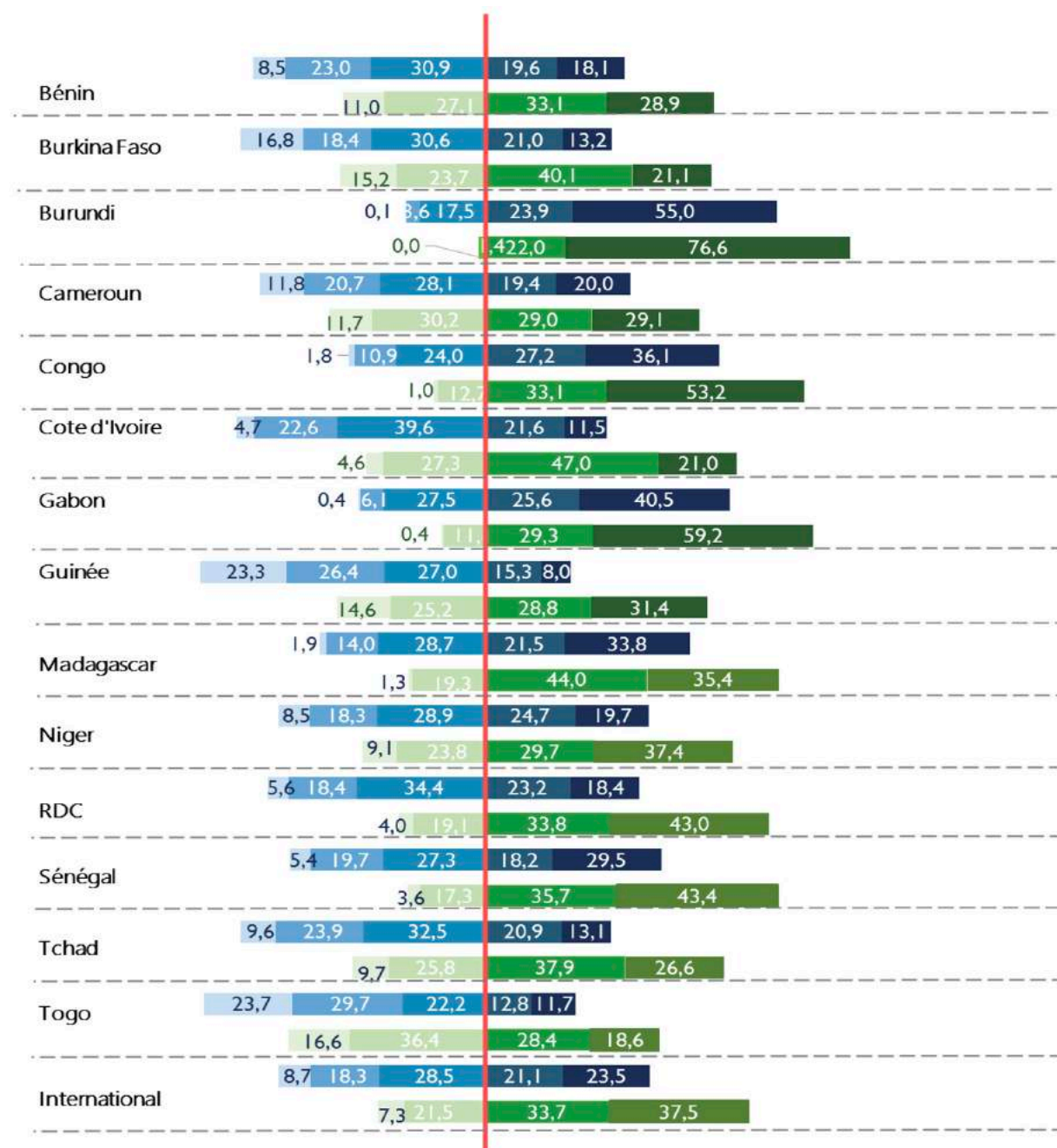
PASEC2019 scale in language	Level < 1	Level 1	Level 2	Level 3	Level 4
PASEC2019 scale in mathematics		Level < 1	Level 1	Level 2	Level 3

Source: PASEC2019 - Quality of Education Systems in Sub-Saharan Africa: Teaching Performance and Environment-Primary Learning

At the beginning of the primary cycle, on average, more than seven out of ten (10) pupils reach the 'sufficient' thresholds of competence in reading and Mathematics. The vast majority of the countries evaluated were able to position more pupils in the upper scales, i.e. above the competence threshold. In both subjects, the following findings can be made:

• **In reading**

Countries where the majority of pupils are above the threshold of competence in language: Burundi (78.9%), Gabon (66.1%), Congo (63.3%) and Madagascar (55.3%) are characterized by a significant proportion of pupils above the proficiency threshold on the PASEC*2019* language assessment. In all four countries, the majority of pupils who reached the proficiency threshold were at the highest level of the scale. The percentage of pupils above the threshold is even more remarkable in Burundi, where more than half (55.0%) of the pupils assessed reach the highest level of the proficiency scale.

Countries with the majority of pupils below the language proficiency threshold: Ten countries out of the 14 participating in the PASEC2019 assessment have a distribution in which a significant proportion of their pupils do not reach the sufficient language proficiency threshold. Among these countries, Senegal (52.4%), Niger (55.7%) and DRC (58.4%) have a small majority below the sufficient proficiency threshold. However, it can be seen that larger proportions of pupils in Guinea (76.7%), Togo (75.6%), Ivory Coast (66.9%), Chad (66%), Burkina Faso (65.8%), Benin (62.4%) and Cameroon (60.6%), do not have the skills to continue learning without difficulty. However, in all ten countries, at least a quarter of pupils are at level 1 of the skills scale and below. Large proportions of pupils in these countries are experiencing severe language learning difficulties. By falling below level 1 on the proficiency scale, these pupils are not sufficiently demonstrating the most basic skills measured in language.

• **In Mathematics**

Burundi stands out from the other countries (98.6% of pupils are above the proficiency threshold). It is followed by five countries that have a relatively high percentage of pupils above the proficiency threshold. These are Gabon (88.5%), Congo (86.3%), Madagascar (79.4%), Senegal (79.1%) and the DRC (76.9%).

A second category of countries (Ivory Coast, Niger, Chad, Benin, Burkina Faso, Guinea and Cameroon) has a percentage of pupils above the competence threshold of between 58.1% and 68.1%. Togo is the only country where less than 50% of pupils are above the competence threshold.

3.1.2. Average score in language and Mathematics and variation of scores between countries

In addition to these results, the information presented below in tables 15 and 16 allows for a more in-depth comparison of Cameroon's performance vis-à-vis the other countries by indicating, for each subject, whether it has an average score that is statistically equivalent to, higher than or lower than that of the other countries.

Table 16: Average of Cameroon Score in Language and Multiple Country Comparisons - School Entry

Language	Country with an average language score statistically higher than Cameroon	Country with an average language score statistically equal to Cameroon	Country with an average language score statistically lower than Cameroon
Cameroon	Burundi, Gabon, Congo, Madagascar, Senegal, Niger, RDC	Benin, Ivory Coast	Chad, Burkina Faso, Togo, Guinea

In language, with 522.2 points, Cameroon has an average score below the international average of 537.1 points at the beginning of schooling of the 14 countries participating in the PASEC*2019* evaluation. Cameroon's score is statistically equal to that of Benin (524.8 points) and Ivory Coast (516.6 points).

The performance of Cameroonian pupils in language is statistically superior to that of pupils from 7 countries: Burundi (625), Gabon (610.3), Congo (582.4), Madagascar (568.8), Senegal (557.1), Niger (534.7) and DRC (531). In contrast, Chad (508.5), Burkina Faso (493.5), Togo (474.9) and Guinea (469) have statistically lower language scores than Cameroon, with Togo and Guinea having very low national average scores.

Table 17: Average of Cameroon Mathematics Score and Multiple Country Comparisons - School Entry

Mathematics	Country with an average Mathematics score statistically higher than Cameroon	Country with an average Mathematics score statistically equal to Cameroon	Country with an average Mathematics score statistically lower than Cameroon
Cameroon »	Burundi, Gabon, Congo, RDC, Madagascar, Niger, Senegal, Benin	Ivory Coast, Chad, Guinea	Burkina Faso, Togo

In Mathematics, eight countries (including the seven already observed in language) stand out from Cameroon with a statistically higher average score in language: Burundi (614.4), Gabon (595.9), Congo (591.9), DRC (567.8), Madagascar (649.7), Niger (544.9), Senegal (536.4) and Benin (525.1).

Ivory Coast, Chad and Guinea have average scores in Mathematics equal to that of Cameroon. Only Burkina Faso (498.7) and Togo (489.5) have Mathematics scores statistically lower than Cameroon's, also having very low national average scores.

As presented in table 18 below, at the beginning of primary school, the variations in national averages in reading and Mathematics compared to the average for all PASEC countries, fall into two categories. The variations shown with 'up' arrows indicate countries whose national average is higher than the average for all countries, and those shown with 'down' arrows for countries whose national average is lower.

Table 18: Average score and variation of scores from the international average in reading and Mathematics for countries - Early years

	Language			Mathematics		
	Average score	Variation from the international average (arrow 'up' or 'down')	Percentage of pupils below the expected competency threshold	Average score	Variation with respect to the international average («up» or «down» arrow)	Percentage of pupils below the expected competency threshold
Burundi	625	↑	21,2	614,4	↑	1,4
Gabon	610,3	↑	34,0	595,9	↑	11,5
Cameroon	**522,2**	⬇	**60,6**	**516,7**	⬇	**41,9**
Congo	582,4	↑	36,7	591,9	↑	13,7
Madagascar	568,8	↑	44,6	549,7	↑	20,6
Senegal	557,1	↑	52,4	536,4	⬇	20,9
Niger	534,7	↑	55,7	544,9	↑	32,9
RDC	531	⬇	58,4	567,8	↑	23,1
Benin	524,8	⬇	52,4	525,1	⬇	38,1
Ivory Coast	516,6	⬇	66,9	522,5	⬇	31,9
Chad	508,5	⬇	66,0	522,4	⬇	35,5
Burkina Faso	493,5	⬇	65,8	498,7	↑	38,9
Togo	474,9	⬇	75,6	489,5	↑	53,0
Guinea	469	⬇	76,7	519,3	⬇	39,8
Average PASEC2019	531,1		55,5	544,5		28,8

In language at the beginning of schooling, six countries have variations with "high" arrows, i.e. with national averages above the international average of the 14 PASEC*2019* countries: Burundi, Gabon, Congo, Madagascar, Senegal and Niger. Of these countries, only two (Madagascar and Niger) have average proportions of pupils below the expected competency threshold that are higher than the average proportion for all countries (55.5%). The other eight countries show variations with "low" arrows, notably Guinea (76.7%) and Togo (75.6%), where more than 70% of pupils are below the sufficient threshold of competence in language.

As in Mathematics, six countries also have national averages above the overall average. They show variations with "up" arrows: Burundi, Gabon, Congo, DRC, Madagascar and Niger. With the exception of Niger, which has a percentage of pupils (32.9%) below the expected competency threshold that is higher than the average percentage for all countries, the other five countries have national percentages of pupils below the average percentage for all countries. The other eight countries have variations with arrows at the "bottom" and some like Togo (53.0%), Guinea (39.8%), Burkina Faso (38.9) and Benin (38.1%) have more than 38% of pupils below the sufficient threshold of competence in Mathematics.

3.1.3. Variation in average scores between 2014 and 2019

As Cameroon participated in the PASEC assessments in 2014 and 2019, we will present the variations in reading and Mathematics scores at the beginning of primary school. With the restructuring of the 2014 strata in the 2019 assessment, it will not be possible to present the same analysis of score variations at the level of the different strata.

Table 19: Average performance in language, by assessment cycle and by country at the beginning of schooling

Country	2014		2019		Difference[4]	
	Average	Standard Deviation	Average	Standard Deviation	Estimate	Standard Error
Benin	458,3	4,3	524,8	7,7	66,5***	8,9
Burkina Faso	513,8	6,3	493,5	9,7	-20,3	11,7
Burundi	627,7	5,7	625,0	4,5	-2,8	7,1
Cameroon	502,4	8,7	522,2	8,4	19,7	12,2
Congo	522,7	6,6	582,4	7,5	59,7***	10,2
Ivory Coast	484,1	6,4	516,6	5,4	32,5***	8,0
Niger	435,2	7,7	512,1	10,5	76,9***	13,2
Senegal	501,9	9,5	557,1	9,3	55,3***	13,2
Chad	480,4	7,8	508,5	7,8	28,1**	12,7
Togo	473,6	6,8	474,9	7,2	1,3	9,1
Average	500,0	2,1	532,5	2,3	32,5***	2,8

In language at the beginning of primary schooling, the average for all countries that participated in both the 2014 and 2019 assessments increased by 32.5 points. Of the ten countries concerned, six show a very highly significant change in the average score between the two assessments. These are Benin (+66.5), Congo (+59.7), Ivory Coast (+32.5), Niger (+76.9), Senegal (+55.3) and Chad (+28.1), where a considerable improvement in school performance between 2014 and 2019 can be noted. However, in two countries, Cameroon and Togo, although scores have increased by 19.7 points and 1.3 points respectively in 2019 compared to 2014, these scores are not significantly different between the two cycles.

Niger and Benin were able to improve their average score by more than 60 points, Congo and Senegal by more than 50 points. Compared to the average variation of all 10 countries that participated in the two assessments, these four countries show average variations that are higher.

The average performance of pupils at the beginning of schooling in Burundi (-2.8) and Burkina Faso (-20.3) fell between the two assessments, particularly in Burkina Faso where the drop is very noticeable. It is necessary to question current practices, especially in Burundi, whose education system is presented as a model.

With regard to Cameroon in particular, the score at the beginning of the primary cycle is 522.2 points in the PASEC2019 evaluation, compared to 502.4 points in the PASEC 2014 evaluation. As already noted, the variation in scores between the two assessments is not significant due to a large standard error of 12.2 points.

The reader is invited to refer to the «Reader's Guide» section for the meaning of the asterisks on certain figures.

Table 20: Average performance in Mathematics, by assessment cycle and country, at the start of schooling

Country	2014		2019		Difference	
	Average	Standard Deviation	Average	Standard Deviation	Estimate	Standard Error
Benin	454,7	5,4	525,1	7,2	70,4***	9,0
Burkina Faso	505,8	4,9	498,7	8,2	-7,1	10,3
Burundi	605,1	4,5	614,4	2,4	9,3	5,0
Cameroon	502,7	9,3	516,7	8,0	14,0	12,7
Congo	541,2	5,6	591,9	6,3	50,7***	8,8
Ivory Coast	465,9	5,8	522,5	4,1	56,6***	6,8
Niger	437,4	8,3	526,6	8,9	89,2***	12,6
Senegal	521,4	8,9	563,4	6,1	42,1***	10,9
Chad	491,3	10,6	522,4	6,8	31,2**	13,7
Togo	474,5	6,1	489,4	5,3	14,9	7,6
Average	500,0	2,1	537,5	1,9	37,5***	2,7

As observed in language, the average for all countries participating in both the 2014 and 2019 assessments increased in early primary Mathematics. This increase amounts to 37.5 points more in 2019 than in 2014. Of the 10 countries, six show a very highly significant change in average score between the two assessments. These are Benin (+70.4), Congo (+50.7), Ivory Coast (+56.6), Niger (+89.2), Senegal (+42.1) and Chad (+31.2), where a considerable improvement in school performance between 2014 and 2019 can be noted. However, in three countries, Burundi, Cameroon and Togo, although scores have increased by 9.3 points, 14.0 points and 14.9 points respectively in 2019 compared to 2014, these scores are not significantly different between the two cycles.

Niger and Benin were able to improve their average score by more than 70 points, Congo and Ivory Coast by more than 50 points. Compared to the average variation of all 10 countries that participated in the two assessments, these four countries show average variations that are higher.

The average performance of pupils at the beginning of schooling in Burkina Faso (-7.1) has regressed between the two assessments. Those in charge of the education system must quickly question current practices, in order to quickly set up remediation systems, knowing that this is at the beginning of schooling.

With regard to Cameroon in particular, the score at the beginning of the primary cycle is 516.7 points in the PASEC*2019* evaluation, compared to 502.7 points in the PASEC*2014* evaluation.

3.1.4. Variation in the different competency scales

The gains associated with the improvement in average language performance in several countries must, however, be tempered by the increasing inequity of most education systems as identified by this comparative study. Indeed, in the vast majority of countries, as the data in tables 3.8 and 3.9 indicate, the variability of performance (measured by the standard deviation) has increased significantly between the two cycles, and even considerably in three countries (Benin, Burkina Faso and Burundi). The higher the standard deviation, the greater the difference in performance between the lowest and highest performers. An education system that amplifies the inequalities in performance between the least and the most successful is indeed less equitable than a system that manages to minimise them. This increase in inequality between pupils could be the result of educational policies implemented during the period.

Table 21: Changes in language performance between 2014 and 2019 at different proficiency levels at the beginning of schooling

Country	Standard Deviation		P 10		P 25		P75		P 90	
	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.
Benin	38,2	7,3	25,5	10,8	34,9	8,0	85,0	12,8	128,6	22,9
Burkina Faso	33,8	12,0	-60,1	25,9	-12,5	14,1	-3,9	12,2	-4,6	14,7
Burundi	-1,4	5,1	-0,7	7,0	-2,2	9,0	-3,2	10,5	-2,1	15,5
Cameroon	33,0	6,5	14,7	17,2	5,5	16,2	35,2	14,1	65,1	23,6
Congo	13,4	7,8	36,8	9,6	56,1	11,1	67,7	16,4	60,9	23,7
Ivory Coast	8,6	5,7	18,7	8,2	27,3	7,7	39,5	10,1	46,5	19,5
Niger	28,7	10,7	51,6	19,0	53,0	12,0	85,2	19,3	139,3	38,6
Senegal	13,2	9,0	40,9	14,2	41,2	11,9	80,2	27,3	65,5	29,5
Chad	16,5	7,3	5,5	17,4	15,6	14,6	43,7	18,8	60,3	27,5
Togo	15,9	8,2	-15,3	13,3	-6,3	9,0	11,4	15,8	32,6	28,3
Average	15,0	2,6	12,5	4,8	25,3	3,0	47,5	4,0	43,4	6,2

Note: Est=Estimation; S.E.=Standard Error;
P10=10th percentile38 characterizes pupils with the lowest performance
P25=25th percentile characterizes the pupils with the lowest performance
P75=75th percentile characterizes pupils with good performance
P90=90th percentile characterizes pupils with better performance

In Cameroon, for example, in 2014, the standard deviation increased by 33.0 points between two assessment cycles, as shown in Table 22 While on average language performance improved by 19.7 points on the PASEC language scale (see Table 20), this improvement peaked at around 15 points for the lowest performers, while it rose to almost 65 points for the highest performers. The situation in Cameroon is not an exception, as this trend is found in many of the countries that participated in both assessments.

It is clear that the weakest pupils have improved their performance very little, while the best performing pupils are maintaining their level. The increasing number of security crises in Cameroon and their repercussions on the education system could thus make pupils who were already less successful in language at the beginning of their schooling more vulnerable.

Table 22: Evolution of performance in Mathematics between 2014 and 2019 at different levels of competence at the beginning of schooling

Country	Standard Deviation		P 10		P 25		P75		P 90	
	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.
Benin	16.5	7.7	41.3	11.4	55.2	8.9	74.6	11.7	86.4	18.7
Burkina Faso	25.3	9.6	-31.7	19.5	-4.7	17.3	5.9	10.8	8.1	11.1
Burundi	-7.6	3.5	19.1	7.5	15.2	5.9	3.6	6.8	0.7	11.0
Cameroun	20.2	6.0	-5.4	18.7	2.2	16.8	30.6	15.1	38.2	15.2
Congo	12.3	6.4	-5.4	18.7	2.2	16.8	30.6	15.1	38.2	15.2
Ivory Coast	-6.0	5.4	41.8	9.8	56.3	9.5	54.8	10.2	38.4	12.9
Niger	10.8	7.6	63.9	17.9	71.3	13.1	99.0	17.2	96.0	24.0
Senegal	-12.8	8.4	54.0	15.3	53.9	14.1	28.3	14.5	37.7	23.4
Chad	-3.7	6.2	26.4	17.4	42.3	12.9	21.8	20.0	12.7	20.7
Togo	-3.0	4.3	19.3	9.2	19.0	9.3	14.2	10.7	12.0	14.1
Average	1.5	2.5	31.8	3.6	42.2	3.9	33.1	3.6	30.5	4.7

Note: Est=Estimation; S.E.=Standard Error;
P10=10th percentile38 characterizes pupils with the lowest performance
P25=25th percentile characterizes the pupils with the lowest performance
P75=75th percentile characterizes pupils with good performance
P90=90th percentile characterizes pupils with better performance

If, at the level of all the countries participating in this comparative study, there is no increase in the variability of performance in Mathematics (the standard deviation increases by 1.5 points between 2014 and 2019 and this difference is not statistically significant), some countries see the variability of their average performance increase. This is the case for Cameroon. In other countries, the variability observed in 2019 is not statistically different from that observed in 2014.

Furthermore, in Mathematics, to a lesser extent than in language, the improvement in performance is more marked for the best performing pupils. An analysis of the educational reforms undertaken in these few countries could explain these trends. To this end, a questionnaire was sent to education officials in the 10 PASEC*2014* countries to find out what education policy actions have been implemented in their country between 2015 and 2019. The questionnaire also aimed to understand whether these actions have had an impact on the improvement of pupils' academic performance in the country. The increase in the average level of performance in several countries, both in language and Mathematics, is an important achievement, which needs to be confirmed by further studies. It is now up to those responsible for education policies in these countries, particularly in Cameroon, to understand why some of the least successful populations in terms of school performance do not manage to derive the same benefits from these reforms as the most successful ones, and then to correct these growing inequalities by means of appropriate measures.

3.2. CAMEROON PUPILS IN INTRA-NATIONAL COMPARISON

In order to be able to present the results of the different countries that participated in the PASEC*2019* evaluation with their specificities, an adapted methodological framework has been developed. This framework has undergone significant modifications compared to the previous framework developed for the PASEC2014 evaluation and allows for the comparison of results and major educational characteristics between geographical, political or institutional entities within a country. In Cameroon, the education system has two sub-systems: Anglophone and Francophone. Each sub-system has its own specificity independently of the other. All analyses from this level will focus on the Anglophone subsystem. The analyses for the French-speaking subsystem will be the subject of a separate report entirely in French.

The sample of the English-speaking subsystem for PASEC*2019* was thus divided into four strata corresponding to eight regions allowing reliable comparisons to be made according to the methods of analysis used for international comparisons: the Center, the Littoral, the West and the remainder, which includes the regions of Adamawa, the East, the Far North, the North and the South. The sample did not include the North-West and South-West regions because of the high level of insecurity there. These strata are shown in the map below (Figure 3).

Figure 3: Map of Cameroon with representation of the different zones (strata) in the francophone subsystem
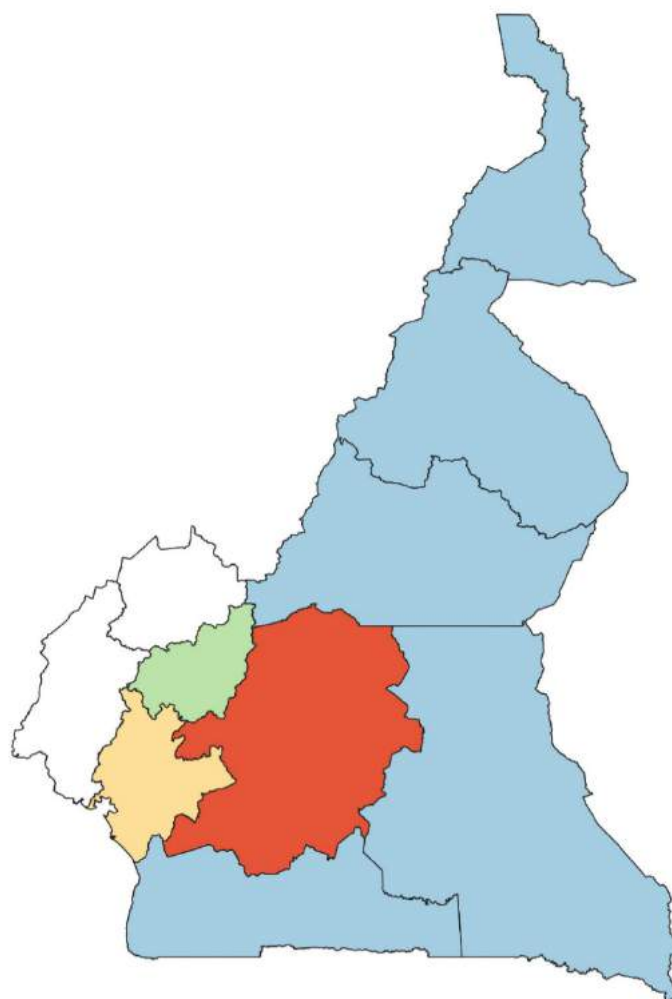
3

The weighting assigned to each of these strata allows the sample to reflect the distribution of pupils in order to estimate the average results and the level of educational characteristics in Cameroon without surveying the entire population of pupils enrolled in school.

3.2.1. Pupils' skills (geographical distribution)

At the beginning of schooling, overall 60.6% of Cameroonian pupils are below the "sufficient" threshold of language skills. This proportion is much lower in the Anglophone sub-system (see graph 2), where 48.7% of pupils are below the "sufficient" threshold of expected language skills, with almost 5.6% of pupils having difficulty with level 1 knowledge and skills.

However, 51.3% of pupils in this sub-system are above the 'sufficient' threshold of competence, with almost 28.7% of pupils at level 4 of the expected competence scale. This proportion of pupils at level 4 of the proficiency scale in the English-language subsystem is well above the average of the two subsystems (see Table 13.) combined.

• **Language**

Graph 2 : Percentage distribution of pupils in the strata of the Anglophone subsystem in Cameroon according to the language proficiency scales – Beginning of schooling

NATIONAL	100	0
WOLEU-NTEM	100	0
OGOOUE-MARITIME	100	0
OGOOUE-LOLO	100	0
OGOOUE IVINDO	100	0
NYANGA	100	0
NGOUNIE	100	0
MOYEN-OGOOUE	100	0
HAUT-OGOOUE	100	0
ESTUAIRE	100	0
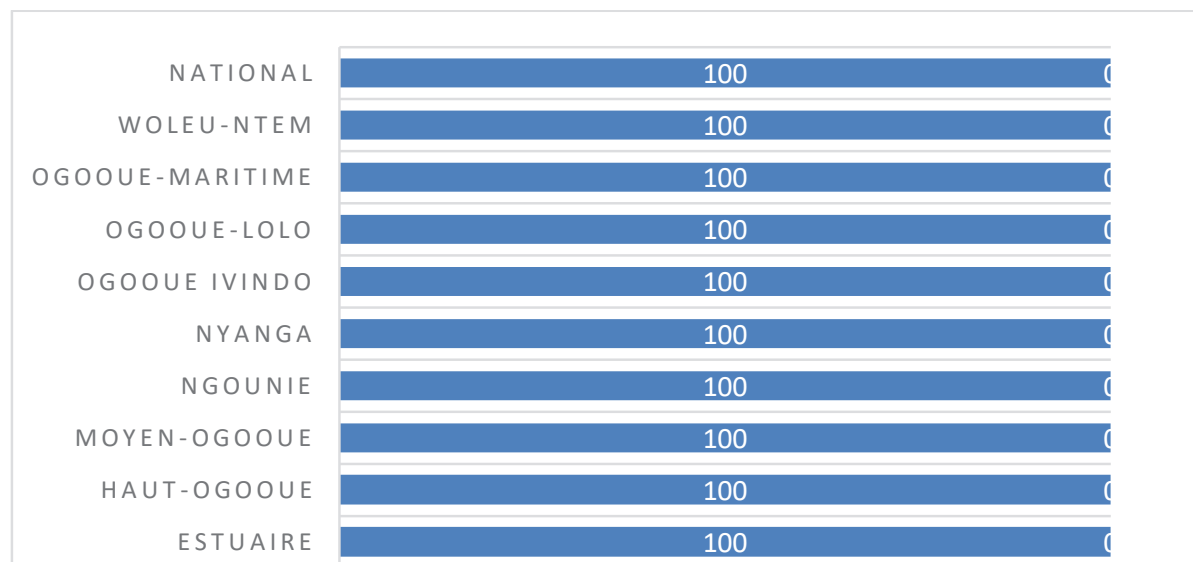
It is interesting to note that the national average in language in the Anglophone sub-system hides some disparities between the different strata.

With only 31.6% of pupils below the 'sufficient' level of competence, the Center stratum has the lowest proportion, with almost 1.9% of pupils having difficulty with level 1 knowledge and skills. It is followed by the Littoral stratum (41.0%), with almost 2.4% of pupils having difficulty with level 1 knowledge and skills. Conversely, the Western stratum (64.0%) and the Rest of the Anglophone stratum (79.1%) had the highest proportion of pupils below the 'sufficient' level of skills, with up to 17.6% of pupils having difficulty with level 1 knowledge and skills in the Rest of the Anglophone stratum alone. These pupils have difficulties, for example, in answering short questions using the three processes assessed: knowing, applying and solving problems. However, the Western stratum, which has high proportions of pupils below the 'sufficient' competency threshold, had only 4.9% of pupils struggling with Level 1 knowledge and skills.

The position of the Western stratum, where more than half of these pupils do not reach the minimum threshold of expected competences, is surprising when one considers that it is a region with a high rate of primary school enrolment, which performs very well in national examinations. On top of this, it was part of the Littoral and West 'Grand-West' grouping in the PASEC2014 assessment, which ranks at the top of the strata performance in reading. This suggests that, given the ranking on this assessment, the performance of Grand-West in 2014 was mainly from Littoral.

At the top end of the PASEC2019 proficiency scale, the same trends are observed. Language performance in the Littoral (59.0%) and Center (68.4%) strata show the highest shares of pupils above the sufficient competency threshold, with shares all above the average share for all strata.

Only 20.9% of pupils in The Rest of Anglophone stratum are above the 'sufficient' threshold of language proficiency, with 11.9% of pupils at level 4 on the proficiency scale. It is followed by the Western region, with 36.0% of pupils above the 'sufficient' proficiency threshold and 18.7% of pupils at proficiency level 4.

It is very interesting to note a very symmetrical distribution of strata performance (below or above the 'sufficient' threshold of competence) in relation to the average performance of the Anglophone subsystem, taking into account the minimum threshold of competence expected at the beginning of primary school in Cameroon. Two strata above: Littoral and Center; two strata below: West and Rest of Anglophone.

• **Mathematics**

In the country as a whole, the two education subsystems taken together, 58.1% of pupils at the beginning of the primary cycle are below the minimum threshold of expected competences in Mathematics. This share of pupils is very high (76.5%) in the Anglophone subsystem, with up to 44.6% of pupils at level 4 of the PASEC2019 competency scale. This system records only 23.5% of pupils below the 'sufficient' threshold, with 4.8% of pupils struggling with level 1 knowledge and skills.

Graph 3: Percentage distribution of pupils in the strata of the Anglophone sub-system of Cameroon according to the scales of competence in Mathematics - Beginning of schooling
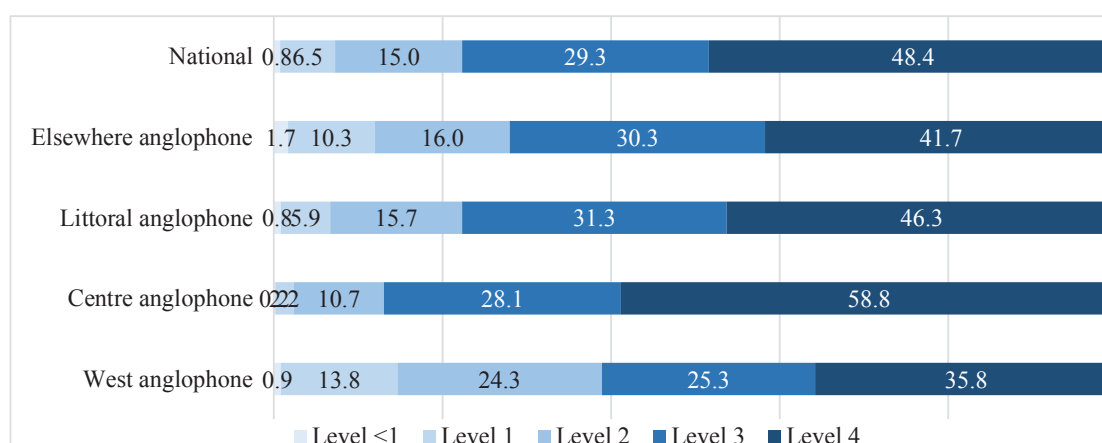
As observed in language, the Center (86.8%) has the highest proportion of pupils at the beginning of the primary cycle above the sufficient threshold of expected competences in Mathematics. This stratum records about 87% of these pupils who scored at least 489 points in the Mathematics test, with 48.7% at the top of the scale with more than 577 points.

The Littoral stratum (84.3%) follows the Central stratum, with shares of pupils above the minimum expected competency threshold on this test, and even at the highest level of the competency scale, that are also higher than the shares for the country as a whole (both subsystems taken together) and for the Anglophone subsystem. This is the only stratum in the Anglophone subsystem that manages to lift more than half of these pupils to the 'sufficient' threshold of level 4 skills.

As observed in language previously, in Mathematics as well, the Western stratum (31.5%) and the Rest of Anglophone (48.3%) have very high proportions of pupils who have not reached the 'sufficient' threshold of competencies expected in this test. These two strata have almost half of their pupils (one in two) who cannot mobilize their basic knowledge to solve tasks that require analysis of the situation in the solids and figures domain.

3.2.2. Variation of the average score (geographical distribution) in relation to the national average

In this section, the average scores in reading and Mathematics by geographical distribution will be presented in comparison with the national average for the English-speaking subsystem. This makes it possible to target the areas where pupils are globally the least successful at the beginning of primary school in the two subjects assessed.

Graph 4: Variation in the average score of strata in relation to the national average in language in the Anglophone subsystem - Beginning of schooling
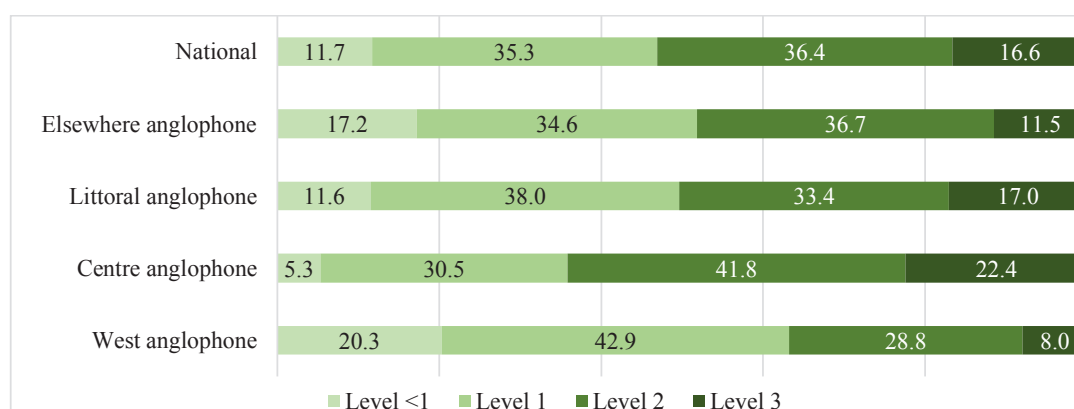
Overall, in reading at the beginning of primary school, the Center stratum, followed by the Littoral stratum have the highest average scores, well above the national average. The stratum with the lowest score is the Rest of Anglophone and shows much more disparity in the distribution of pupils' scores

Graph 5: Variation of the average score of the strata in relation to the national average in Mathematics in the Francophone subsystem - Beginning of schooling
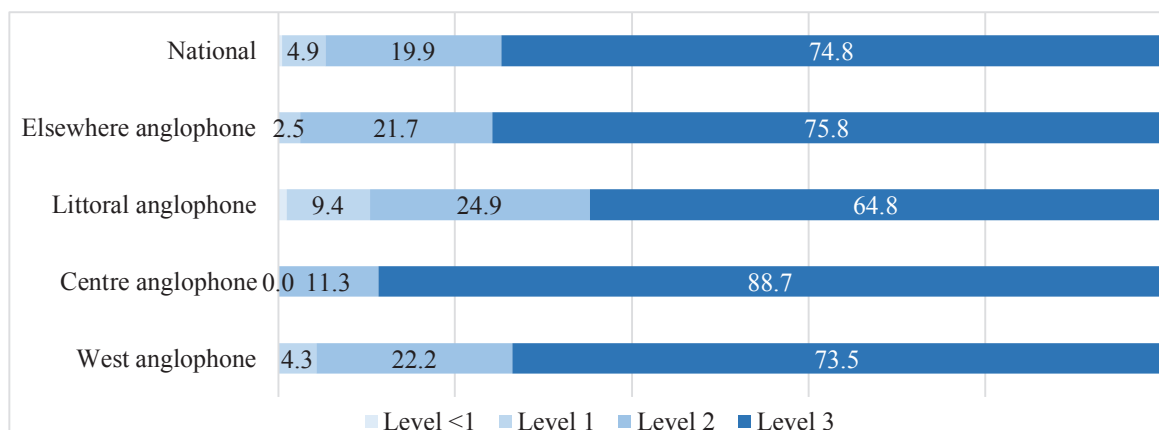
In Mathematics, on the other hand, it is the Littoral that records the highest score and with less disparity around the regional average. This stratum is followed by the Center, which shows even less disparity around the regional average. As in reading, the Rest of Anglophone stratum also has the lowest score in Mathematics. However, there is less disparity around the regional average in the Rest of Anglophone than in the West, which has more disparity.

Overall, the performance of pupils in the six regions grouped under Remaining Anglophone is statistically lower than the national averages in the two subjects assessed. The West stratum is the only one of the non-'PEZ' strata that performs unsatisfactorily on this assessment, below the national averages recorded in reading and Mathematics.

Box 3.1: Definition of the relationship between the average score and its standard deviation

The relationship between the average score and its standard deviation reflects the level of disparity of pupils' scores around the national average, which also gives a picture of the equity of the education system in general, and in a particular subsystem.

Thus, a high average score with a low standard deviation would be the result of an education system that is both efficient and equitable, with pupils performing close to the national average. Conversely, a high average score and a high standard deviation would indicate a well-performing but not very fair education system. A low average score with a low standard deviation reflects homogeneity of low pupil performance around the national average.

Graphs 6 and 7 show the performance of the different strata in the French-speaking sub-system in relation to the level of disparity of the pupils' scores around the national average performance of the English-speaking sub-system. The aim here is to give a general idea of the homogeneity of pupils' results in language and Mathematics at the beginning of schooling, bearing in mind that a more in-depth analysis will be carried out from chapter 5 onwards, in search of factors marking these inequalities.

Graph 6: Relationship between average reading scores and standard deviations - Early schooling
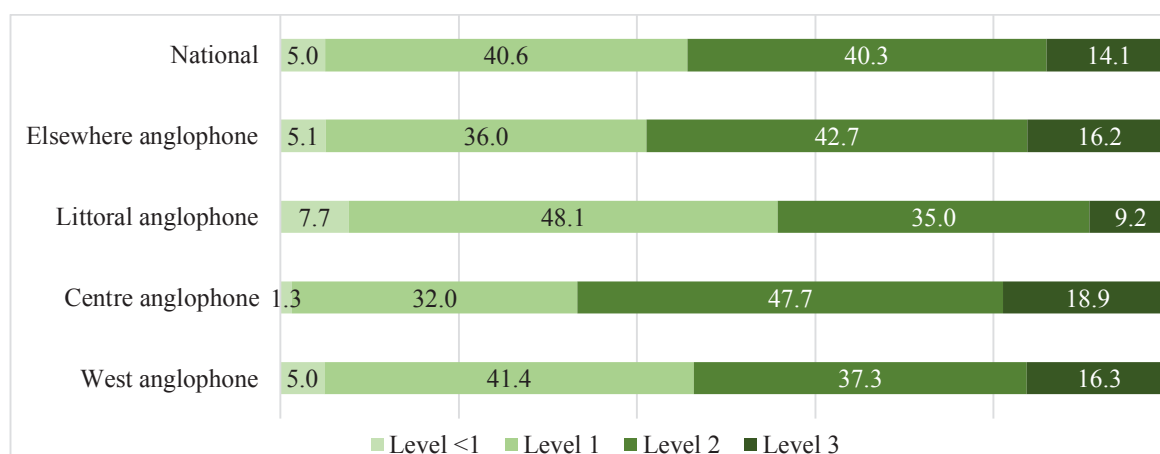
In reading, we note that all four strata, namely the Littoral (577.7 points), the Center (586.0 points), the West (524.4 points) and the Rest of Anglophone (479.5 points) are more centred around the regional average at the beginning of schooling (with standard deviations of 105.2, 92.5, 89.06 and 97.1 points respectively). This reflects an education system that is both efficient and equitable at the beginning of schooling in these four regions.

However, it should be noted that in the Western and Rest of Anglophone strata, the pupils' performance is low around their average.

Graph 7: Relationship between average scores in Mathematics and standard deviations - Early schooling
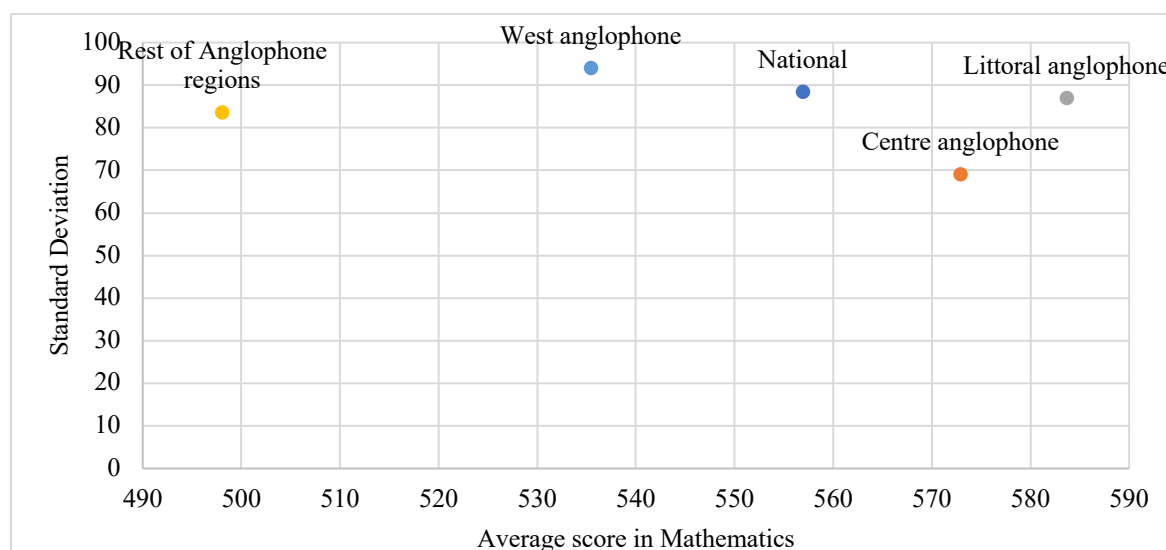
In Mathematics, the Center (572.9 points), which is well placed in second position in relation to the national average of the Anglophone sub-system, stands out with a higher average score and a much lower standard deviation of around 69.3.

As in reading, the same observation can be made in Mathematics in the Littoral region (583.6 points) with an average score more centered around the regional average at the beginning of schooling (with a standard deviation of 87.03 points).

The Western stratum (505.9), while having a low performance compared to the national average, has scores widely dispersed around their regional average. Thus, this region with 94.1 standard deviation points shows heterogeneity of scores.

However, the Rest of the Anglophone stratum with a very low average score in Mathematics presents a homogeneous level of low pupil performance around the national average.

CHAPTER 4

SCHOOL PERFORMANCE OF PRIMARY SCHOOL LEAVERS

As in Chapter 3, this chapter will be devoted to presenting the results of pupils at the end of primary school. The aim is also to present the performance levels of pupils in reading and Mathematics. Thus, the distribution of pupils on the PASEC2019 competency scale will be presented and a parallel will also be drawn with the PASEC2014 competency scale.

4.1 PUPILS IN THE "COUNTRY" IN INTERNATIONAL COMPARISON

The following analyses will be discussed:

4.1.1 Pupils' reading and mathematical skills

The following tables 22 and 26 present the end-of-primary-school competency scales in reading and Mathematics. These scales are the same as those used in the PASEC2014 report. Sufficient' thresholds are marked with a red line in the table.

To facilitate the reading and interpretation of the statistical results in pedagogical terms, the performance of pupils in the tests is presented on competency scales segmented into several levels. Each level has a set of competences that are mastered, with a certain probability, by the pupils belonging to that level. Each of the skills and knowledge required at each level is described below; these descriptions also allow an assessment of the main difficulties encountered by the pupils. In both reading and Mathematics, a threshold has been identified as 'sufficient'. Above this threshold, PASEC considers that pupils have, in principle, the knowledge and skills required to continue their schooling under good conditions. Below this threshold, pupils are likely to experience more difficulties as they continue their education. Pupils below the 'sufficient' threshold of competence are more likely to be discouraged and drop out of school, or to experience even greater difficulties in further education, if they continue.

Table 23 : PASEC2019 Reading Proficiency Scale – School Leavers

Levels	Score	International distribution of pupils in the scale levels (%)	National distribution of pupils in the scale levels (%)	Description of competences
Level 4	>595 points	26,1%	30,2%	Pupils are able to use comprehensive word processing to draw on narrative, informational and documentary texts. In these materials, they are able to associate and interpret several implicit ideas based on their experiences and knowledge. In reading literary texts, pupils are able to identify the author's intention and determine the implied meaning of a story. In reading informational texts and documents, they link information and compare data in order to use it.
Level 3	Within the range of 518 and 595 points	21,8%	23,4%	Pupils are able to combine two explicit pieces of information in a document passage or make simple inferences in a narrative or informational text. They can extract implicit information from written material by making sense of implicit connectors, anaphora or referents. Pupils locate explicit information in long texts and documents with discontinuous text.
Sufficient' threshold of skills				
Level 2	Within the range of 441 and 518 points	25,1%	22,2%	Pupils improve their decoding skills in order to understand single words from everyday life and single sentences. They are also able to locate explicit information in short and medium texts by picking up clues from the text and from questions. Pupils are able to paraphrase explicit information from a text.
Level 1	Within the range of 365 and 441 points	21,1%	18%	Pupils have developed decoding skills and are able to use them to understand single words from their daily lives or very short isolated sentences, but have difficulty understanding the meaning of short, simple texts.
Below Level 1	< 365 points	5,9%	6,1%	Pupils who are at this level do not sufficiently demonstrate the skills measured by this test in the language of instruction. These pupils have difficulty with the knowledge and skills of level 1.

4

Across the 14 countries assessed in 2019, almost 52% of pupils did not reach the 'sufficient' threshold of language proficiency on the PASEC2019 proficiency scale after at least five years of primary schooling, scoring less than 518 points on this assessment.

Of these pupils, on average, 5.9% have enormous difficulties in acquiring reading knowledge and skills. They have average scores below 365 points, and are below Level 1. The national shares of pupils in this category vary independently from country to country, ranging from the extreme values of 0.1% for Gabon to 14.5% for Chad. These pupils do not demonstrate the skills measured by this test in the language of instruction. They cannot decode and mobilize their own resources to understand isolated words from everyday life.

On the other hand, 48% of the pupils scored at least 518 points on this test, with 26.1% scoring over 595 points. These pupils are at the top of the scale, able to read texts and extract information, locate explicit information in long texts and documents with discontinuous text.

The language performance of Cameroonian pupils after six years of primary schooling is moderately good. Almost 54% of pupils are above the 'sufficient' threshold of competence, with 30% at level 4 on the competence scale. Thus, more than half of Cameroonian pupils at the end of their schooling can combine two explicit pieces of information in a document or make simple inferences in a narrative or informative text. They can also extract implicit information from written material by making sense of implicit connectors, anaphors or referents; locate explicit information in long texts and documents with discontinuous text.

It can be seen that the average percentage of pupils below level 1 is roughly equal to the average percentage of the countries combined. There are 6.1% of pupils who do not demonstrate the skills measured by this assessment.

Table 24 :   PASEC2014 Mathematics Competence Scale - End of school

Levels	Scores	International distribution of pupils in the scale levels (%)	National distribution of pupils in the scale levels (%)	Description of competences
Level 3	>609 points	12,5 %	11,1 %	Pupils are able to solve tasks requiring them to analyze situations, usually presented in the form of a short text of 2 to 3 lines, to identify the procedure(s) to be used. In the area of numbers and operations, they can solve direct proportionality problems and problems involving fractions or decimal numbers. Their understanding of fractions continues to develop (e.g., they understand the comparison of fractions or the link between fractions and decimals). In the area of magnitude and measurement, they can solve a variety of problems involving area or perimeter calculations, presented without visual aids and sometimes requiring two stages of reasoning (e.g. finding the area of a square when the perimeter is known or making conversions involving data given in acres or hectares). They can also perform calculations and conversions involving hours, minutes and even seconds.
Level 2	Within the range of 521 and 609 points	25,6 %	21,8 %	Pupils are able to answer short questions using the three processes assessed: knowing, applying and problem solving. While most questions require factual knowledge or a specific procedure, others require analysis of the situation to determine the appropriate approach. In the area of numbers and operations, pupils perform operations with decimal numbers; their understanding of fractions deepens (they identify them in less conventional situations or begin to be able to use them to perform simple operations) and they understand the concept of percentages. They also begin to solve simple problems usually involving a single operation. In the area of magnitude and measurement, pupils are able to tell the time and can perform unit conversions with or without a conversion table. They are also able to solve simple first problems involving perimeter and area calculations, usually with visual support. In the area of solids and figures, they can mobilise their background knowledge to solve tasks that require analysis of the situation (e.g. finding x triangles in a set of figures or identifying parallel lines in a line bundle).
Sufficient' threshold of competences				
Level 1	Within the range of 433 and 521 points	35,7 %	36,9 %	Pupils can answer very short questions that require factual knowledge or a specific procedure. In the area of numbers and operations, they are able to perform the four basic operations with whole numbers that may require a written calculation with carrying. They also begin to develop initial concepts of fractions and can identify them when presented in a conventional way (e.g. a pie divided into x parts). In the area of magnitude and measurement, they identify common conventional units (e.g. m, m², m³ and kg). In the area of solids and figures, they have some basic knowledge of various geometric objects (e.g. identify a disc or cylinder; identify a right angle or parallel lines).
Below level 1	<433 points	26,1 %	30,1%	Pupils at this level do not sufficiently demonstrate the skills measured by this test in the language of schooling. These pupils have difficulty with Level 1- knowledge and skills.

4

At the end of primary school, in all the countries evaluated, more than 60% of pupils are below the threshold of competence in Mathematics. They have an average score of less than 521 points in this assessment. These pupils have difficulties, for example, in answering short questions using the three processes assessed: knowing, applying and solving problems. In the area of numbers and operations, they have difficulty performing operations with decimal numbers.

More than 25% of these pupils are below level 1 on the competency scale. These pupils have difficulty with level 1- knowledge and skills.

On average, 38% of the pupils in all the countries that took part in the test scored more than 521 points on the test. They are above the sufficient competency threshold. These pupils can continue their schooling without experiencing enormous difficulties in Mathematics. This is because they can at least perform operations with decimal numbers, solve simple problems that usually involve a single operation, and have a better understanding of the concepts of fractions and percentages.

The best pupils in this subject have scores above 609 points, constituting a proportion of 12.5% in all PASEC countries. These pupils are at the top of the skills scale. They are able to identify information in small texts and deduce the procedures needed to solve the expected tasks. These pupils can engage in solving direct proportionality problems and problems involving fractions or decimal numbers. They demonstrate a more refined understanding of fractions, including an understanding of the relationship between fractions and decimals. In the area of magnitude and measurement, these pupils are successful in measurement activities that originate in the solution of various problems involving area or perimeter calculations. These problems involve visual aids and often involve sequential reasoning.

This proportion of pupils at the top is very low, given that many of them will be moving on to the secondary cycle. Remedial systems need to be put in place at all levels of the primary cycle to address the gaps and weaknesses of pupils in this subject as soon as they appear.

Cameroon's pupils perform below the average for all PASEC countries. 67% of the pupils are below the "sufficient" threshold of competence, with an average score of less than 521 points. Two out of three randomly selected pupils at the end of primary school in Cameroon cannot analyse a situation to determine the appropriate approach to solving simple problems. They cannot tell the time correctly, nor can they convert units of measurement.

Of these, 30% score less than 433 points, and do not sufficiently demonstrate the skills measured by this test in the language of schooling. These pupils have difficulty with level 1- knowledge and skills. These difficulties need to be addressed in time to avoid the risk of dropping out of school. In this lower category, the average proportion of pupils in Cameroon is higher than the average proportion for all PASEC countries (26.1%).

Only 33% of the country's pupils are above the sufficient competency threshold. They were able to score at least 521 points on this assessment. These pupils can mobilize their basic knowledge to solve tasks that require analysis of the situation (e.g., finding x triangles among a set of figures or identifying parallel lines in a bundle of lines).

Only 11.1% of these pupils reached Level 3 on the competency scale, with scores of 609 points or more. In the area of magnitude and measurement, one in nine randomly selected pupils could solve a variety of problems involving area or perimeter calculations, presented without visual support and sometimes requiring two steps of reasoning (e.g. finding the area of a square when one knows its perimeter or making conversions involving data given in acres or hectares).

The average share of Cameroonian primary school leavers reaching the top of this scale in Mathematics is insignificant. Corrective measures must be implemented to considerably reduce the disparities in the performance of pupils in this education system, thus allowing the densification of pupils at the top of this scale.

Graph 8 : Percentage of pupils by level of proficiency in language and Mathematics - End of schooling

	Level < 1	Level 1	Level 2	Level 3	Level 4
Bénin		6,8 / 17,5	29,5	45,5	
	11,7	36,6	32,5	19,1	
Burkina Faso		3,3 / 9,1 / 20,9	33,7	33,0	
	11,2	26,4	37,5	25,0	
Burundi	0,6 / 19,4	51,8	23,7 / 4,5		
	3,8	35,3	42,9	18,0	
Cameroun	6,1 / 18,0 / 22,2	23,4	30,2		
	30,1	36,9	21,8	11,1	
Congo	3,9 / 17,1 / 20,6	24,8	33,6		
	25,5	41,1	25,7	7,7	
Cote d'Ivoire	7,0 / 28,3 / 24,2	18,4	22,0		
	42,1	40,7	14,6		
Gabon	0,5 / 6,0 / 17,1	76,3			
	4,7	28,6	43,8	22,9	
Guinée	10,0 / 20,4 / 24,9	22,5	22,2		
	28,7	38,9	25,6	6,8	
Madagascar	6,4 / 39,5	36,6	11,2 / 6,3		
	36,0	42,4	15,3 / 6,3		
Niger	12,6 / 33,3	24,0	15,6 / 14,4		
	43,7	33,8	14,6 / 7,9		
RDC	7,8 / 31,5	33,6	17,9 / 9,2		
	37,2	44,4	15,2 / 3,2		
Senegal	1,0 / 0,0 / 18,3	33,6	41,1		
	8,2	26,7	37,8	27,2	
Tchad	14,5 / 36,1	27,2	14,5 / 7,6		
	50,8	37,7	9,7 / 1,5		
Togo	7,9 / 28,7	24,5	19,5 / 19,4		
	32,1	30,9	21,1	15,9	
Internationnal	5,9 / 21,1 / 25,1	21,8	26,1		
	26,1	35,7	25,6	12,5	

Level < 1	Level 1	Level 2	Level 3	Level 4

	Level < 1	Level 1	Level 2	Level 3

At the end of primary education, on average, more than half of the pupils do not reach the 'sufficient' thresholds of competence in reading and Mathematics. Two national performance trends emerge in both subjects, while highlighting disparities between countries:

-In reading

- **Countries where the majority of pupils are above the reading literacy threshold:**

Among these countries, Gabon stands out. The Gabonese education system places almost all of its pupils (93.4%) above the only minimum expected reading skills. Pupils in Benin (75%), Senegal (74.7%), Burkina (66.7%), Congo (58.4%) and Cameroon (53.7%) perform satisfactorily on the PASEC reading assessment, with the majority of their pupils above the sufficient threshold. With the exception of Burkina Faso, in all of these countries the largest share of pupils who reached the sufficient level of competency are at the highest level of the competency scale: 76.3% in Gabon, 45.5 in Benin, 41.1% in Senegal, 33.6% in Congo and 30.2% in Cameroon. Cameroon and Congo are the two countries with a relatively high share of pupils at level 1 of the scale.

- **Countries with a majority of pupils below the reading literacy threshold:**

The low performance at the end of primary education of the countries participating in the assessment is reflected in the large proportion of their pupils who cannot reach the sufficient reading literacy threshold. Madagascar (82.5%), Chad (77.8%), DRC (72.9%), Burundi (71.8%), Niger (69.9%), Togo (61.1%), Ivory coast (59.5%) and Guinea (55.3%) have the highest proportions of pupils who do not demonstrate sufficient reading skills on the PASEC assessment. In most of these countries, at least a quarter of the pupils are at or below the most basic level of the proficiency scale: Chad (50.6%), Madagascar (45.9%), Niger (45.9%), DRC (39, 3%), Togo (36.6%), Ivory Coast (35.3%) and Guinea (30.4%). It should be noted that in Chad (14.5%), Niger (12.6%) and Guinea (10%), large proportions of pupils below level 1 on the skills scale are experiencing serious academic difficulties in reading.

-In Mathematics

- **Countries with a large majority of their pupils above the threshold of competence
  in Mathematics:**

Less than a third of the countries participating in the evaluation have a significant proportion of pupils above the 'sufficient' threshold on the end-of-primary Mathematics competence scale. Gabon (66.7%), Senegal (65%), Burkina Faso (62.5%) and Burundi (60.9%) constitute this group of countries where the vast majority of pupils are above the sufficient threshold in Mathematics. In all these countries, however, the largest proportion of pupils who have reached the sufficient competency threshold are limited to level 2 of the scale. Senegal (27.2%) and Burkina Faso (25%) are the only countries where at least a quarter of the pupils reach the last level of the proficiency scale. Benin's overall performance on the end-of-primary Mathematics competency scale contrasts with that of the other countries. Benin is the only country with relatively equal shares of its pupils on either side of the sufficiently proficient level in Mathematics.

- **Countries where the majority of pupils are below the threshold of proficiency in Mathematics:**

Nine of the fourteen PASEC2019 countries have very high proportions of pupils below the sufficient threshold of proficiency in Mathematics at the end of primary education: Chad (88.5%), Ivory Coast (82.8%), DRC (81.1%), Madagascar (78.4%), Niger (77.5%), Guinea (67.6%), Cameroon (67%), Congo (66.6%) and Togo (63%). While the competency scale shows that these pupils are likely to experience significant difficulties in continuing their schooling, it also indicates that many of them, situated below level 1 on the scale, have very serious difficulties in Mathematics that could expose them to dropping out of school. This last observation concerns at least 30% of pupils in most countries: Chad (50.8%), Niger (43.7%), Ivory Coast (42.1%), DRC (37.2%), Madagascar (36%), Togo (32.1%) and Cameroon (30.1%).

4.1.2 Average score in reading and Mathematics and variation in scores between countries

Table 25 : Average ‹Country› Reading Score and Multiple Country Comparisons - School Leavers

Reading	Countries with an average reading score statistically higher than the "Country"	Countries with an average reading score statistically equal to "Country"	Countries with a statistically lower average reading score than the "Country"
Cameroon	Gabon, Benin, Senegal, Burkina Faso	Congo	Ivory Coast, Togo, Burundi, Niger, Chad, Guinea, Madagascar, RDC

At the end of primary school, the average reading score of pupils in Cameroon (529.7) is statistically equal to that of only one country: Congo (542). It is statistically lower than that of four countries: Benin (585.7), Senegal (575.9), Burkina Faso (551.5) and especially Gabon (644.7). The latter, for its very first participation, has the best national average in reading of all the countries in this PASEC evaluation, and is more than 120 points higher than the average of Cameroon. The reading performance of Cameroonian pupils is statistically superior to that of pupils from 8 countries: Ivory Coast (502.8), Togo (496.1), Burundi (489.9), Niger (471), Chad (450.9), Guinea (502.9), Madagascar (459.5), and DRC (472.7). Chad has the lowest national average on this assessment, 72 points below the average for Cameroon.

Table 26 : Average ‹Country› Score in Mathematics and Multiple Country Comparisons - School Leavers

Mathematics	Countries with an average score in Mathematics statistically higher than the "Country"	Countries with a mean score in Mathematics statistically equal to "Country"	Countries with a statistically lower average maths score than the "Country"
Cameroon	Senegal, Gabon, Burkina Faso, Burundi, Benin	Togo, Congo, Guinea	Madagascar, RDC, Niger, Ivory Coast, Chad

In Mathematics compared to reading, at the end of schooling:

Two more countries than Congo (489.1) have national averages statistically equal to Cameroon (488.1): Togo (495.4) and Guinea (482.3). One more country than the four Senegal (557.6), Gabon (554.6), Burkina Faso (547.2), and Benin (533.8): Burundi (546) has a statistically higher national score than Cameroon. Only five countries have statistically lower national scores than Cameroon: Madagascar (468.3), DRC (462.1), Niger (461.8), Ivory Coast (454), Chad (437.8).

Irrespective of reading or Mathematics, the average performance of pupils in Cameroon is statistically: equal to that of pupils in Congo; lower than that of pupils in Senegal, Gabon, Burkina Faso and Benin; higher than that of pupils in Madagascar, DRC, Niger, Ivory Coast and Chad.

Table 27 : Average score and variation of scores in relation to the international average in reading and Mathematics for countries - End of schooling

	Lecture			Mathematics		
	Average score	Variation from the international average (arrow "up" or "down")	Percentage of pupils below the expected competence threshold	Average score	Variation from the international average (arrow "up" or"down")	Percentage of pupils below the expected competence threshold
Benin	585,7	↑	24,9	533,8	↑	48,3
Burkina Faso	551,5	↑	33,3	547,2	↑	37,6
Burundi	489,9	↓	71,8	546	↑	39,1
Cameroun	**529,7**	↑	**46,3**	**488,1**	↓	**67**
Congo	542	↑	41,6	489,1	↓	66,6
Ivory Coast	502,8	↓	59,5	454	↓	82,8
Gabon	644,7	↑	6,7	554,6	↑	33,3
Guinea	502,9	↓	55,3	482,3	↓	67,6
Madagascar	459,5	↓	82,5	468,3	↓	78,4
Niger	471	↓	69,9	461,8	↓	77,5
RDC	472,7	↓	72,9	462,1	↓	81,6
Senegal	575,9	↑	25,3	557,6	↑	34,9
Chad	450,9	↓	77,8	437,8	↓	88,5
Togo	496,1	↓	61,1	495,4	↓	63
AVERAGE PASEC2019	**519,8**		**52,1**	**501,4**		**61,8**

At the end of the primary cycle, variations in national averages in reading and Mathematics compared to the average for all PASEC countries fall into two categories. The variations represented with 'up' arrows indicate countries whose national average is higher than the average for all countries, and those represented with 'down' arrows for countries whose national average is lower.

In end-of-school reading, six countries have variations with 'high' arrows, i.e. they have national averages above the average for all countries, namely Benin, Burkina Faso, Cameroon, Congo, Gabon and Senegal. These countries have average proportions of pupils below the expected competency threshold below the average proportion for all countries (52.1%). The other eight countries show variations with "low" arrows, notably Guinea (55.3%), Ivory Coast (59.5%) and Togo (61.1%), where the majority of pupils are below the threshold of sufficient competence in reading and the other five have more than 70% of their pupils in this category.

While in Mathematics, eight countries have national averages below the overall average. They show variations with "low" arrows: Cameroon, Togo, Congo, Guinea, Madagascar, DRC, Niger, Ivory Coast and Chad. They show national percentages of pupils above the average percentage for all countries for the category of pupils below the threshold of competency expected in this test in this subject. The majority of pupils in these countries fall into this category and some, such as Chad (88.5%), Ivory Coast (82.8%) and the DRC (81.6%), have almost all their pupils in this category.

4.1.3 Comparison between the results of PASEC2019 and PASEC2014

In this section, we present for Cameroon the variations in reading and Mathematics scores between the two cycles of the PASEC assessments at national level for pupils at the end of primary school. The restructuring of the 2014 strata during the 2019 assessment makes it impossible to extend this analysis of score variations to the level of the different strata.

The mean reading score of Cameroon's end-of-primary pupils on the 2019 PASEC assessment (529.7) is significantly higher than that recorded by their predecessors on the 2014 assessment (517.5). These 2019 pupils increase the average score by 12.2 points compared to 2014. In this latest assessment, 53.6% of the pupils surveyed reached the minimum threshold of expected competences, compared to 48.8% in 2014. Similarly, the proportion of these pupils who reach the top of the scale in 2019 is 6% higher than in the previous assessment. Although the proportion of pupils at the end of primary schooling who did not reach the sufficient competency threshold was higher in 2014, the proportion of pupils in very great difficulty who do not demonstrate the competencies measured in reading by these tests is similar in both assessments.

Pupils' performance in Mathematics follows a different trend to that in reading. The average score in Mathematics in 2019 (488.1) is 1.4 points lower than in 2014. The distributions of the proportions of these pupils in the different levels of the competency scales show similar values in both assessments. In 2014, nearly 65% of the pupils surveyed were below the sufficient competency threshold, compared to 67% in 2019, with 29.8% in 2014 compared to 30.1% in 2019 of pupils having difficulty with the knowledge and skills of level 1. A very small proportion (11.8%) of pupils was at the top of the scale in 2014, similar to 11.1% in 2019.

Although the country's primary school leavers performed better in reading in the PASEC2019 assessment than in the 2014 assessment, the average score of these pupils is not significantly different between the two sessions. Nevertheless, it does raise the average score that will be expected in the PASEC2024 assessment. The national average score of pupils remains higher than that of all countries in both PASEC2014 and PASEC2019. The average proportion of pupils below level 1 is stable between the two assessments. However, in Mathematics the average performance of pupils is better in 2014 than in 2019, although it remains below the average performance of all countries in both PASEC assessments.

4.1.4 Changes in average scores between 2014 and 2019

The evolution of the average scores of the pupils surveyed differs over the two assessments depending on the country in which one is located. However, not all of these changes are necessarily significant, as we note that even the average reading score of all the countries assessed did not remain stable between PASEC2014 and PASEC2019.

Table 28 : Changes in average reading performance, by assessment cycle (2014, 2019) and by country at the end of schooling

COUNTRY	2014		2019		Difference	
	Average	Standard error	Average	Standard error	Estimation	Standard error
Benin	523,4	4,6	585,7	6,4	62,3***	7,7
Burkina Faso	531,6	4,4	551,5	3,6	19,8***	5,3
Burundi	525,4	2,0	489,9	2,7	-35,5***	3,3
Cameroon	517,5	5,5	529,7	5,5	12,2	8,4
Congo	503,4	4,4	542,0	4,9	38,6***	6,7
Ivory Coast	517,0	4,0	502,8	5,5	-14,2**	6,8
Niger	403,5	3,7	471,0	5,4	67,5***	6,3
Senegal	548,4	6,8	575,9	4,9	27,5***	8,2
Chad	432,5	6,7	450,6	5,8	18,1**	9,3
Togo	497,3	4,0	496,1	3,7	-1,2	5,6
Average	500,0	1,8	519,8	1,8	19,8***	2,7

The average score for all countries increased by a very highly significant 19.8 points in 2019 from 500 points in 2014. This is a smaller increase than the one observed at the beginning of the schooling (32.5), but still significant. Of the ten countries covered by the two assessments, five show a very highly significant change in the average score between the two assessment rounds and only one shows a highly significant change. These are Niger (67.5), Benin (62.3), Congo (38.6), Senegal (27.5), Burkina Faso (19.8) and Chad (18.1). Pupils in these countries have significantly improved their performance in the 2019 assessment compared to their predecessors. The mechanisms put in place by the education systems of these countries are to be shared among all CONFEMEN countries, which will allow other countries to improve and raise the average score of all participating countries. These countries are performing well at PASEC 2019.

Niger and Benin improved their average score by more than 60 points, Congo and Senegal by more than 27 points. Compared to the average variation of all countries between the two rounds of the assessment, these four countries show average variations that are higher, Burkina-Faso shows an average variation equal to that of all countries, while Chad's is slightly lower.

The average score of pupils in Cameroon, although it has increased by 12.2 in 2019 compared to 2014, is not significantly different between the two cycles, due to a very high standard error of around 8.4 points.

The average performance of primary school leavers in Burundi (-35.5) and Ivory Coast (-14.2) regressed significantly between the two assessment cycles. Those responsible for these education systems must question current practices to improve the national average scores of their learners. This is especially true for pupils in Burundi, whose education system is presented as a model with its particularity of combining several languages of learning during the primary cycle. Pupils in Togo show a non-significant drop in average score of 1.2 points in 2019 compared to 2014, due to a large standard error of 5.6 points.

There was a significant upward improvement in the average performance of all countries that participated in both rounds of assessments. Some countries were able to significantly increase their national average as a reward for their education policies, others stabilized and the rest experienced a decline. As a result, the ranking of countries participating in these assessments is very dynamic from one round to the next.

4.1.5 Variation in the different competency scales

In this section, we will decipher the evolution of the reading performance of pupils at the end of the primary cycle in the countries that participated in the two cycles of the PASEC assessment in the different skill levels (10th percentile, 25th percentile, 75th percentile and 90th percentile).

Table 29: Changes in reading performance between 2014 and 2019 at different end-of-school proficiency levels

Pays	Standard deviation		P 10		P 25		P75		P 90	
	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.
Benin	-1,6	4,9	59,9	8,2	68,2	7,5	63,3	11,2	62,8	16,3
Burkina Faso	12,3	3,6	0,5	9,6	15,5	6,4	28,7	5,1	31,1	7,1
Burundi	7,8	2,8	-40,5	3,6	-42,7	3,6	-34,1	3,9	-23,4	5,7
Cameroon	**10,5**	**4,7**	**2,6**	**10,6**	**6,8**	**9,7**	**20,5**	**9,4**	**21,9**	**9,3**
Congo	15,9	3,3	8,2	8,4	18,8	8,1	57,7	8,0	51,8	9,5
Ivory Coast	13,6	4,1	-19,2	7,1	-26,9	6,5	-5,6	11,1	14,4	12,4
Niger	24,9	4,6	40,4	7,1	44,1	4,8	97,7	11,3	113,1	11,6
Senegal	-15,6	4,8	54,7	11,2	46,3	10,5	10,3	9,3	5,2	13,7
Chad	10,9	5,5	15,8	11,1	13,6	8,7	20,4	14,1	32,3	13,7
Togo	12,4	2,8	-10,6	6,1	-15,0	5,8	13,5	8,4	20,5	8,9
Average	7,6	1,6	14,8	2,8	10,8	2,9	28,7	3,1	32,5	4,4

Note: Est=Estimate; S.E.=Standard Error

P10=10th percentile characterises pupils with the lowest performance
P25=25th percentile characterizes the pupils with the lowest performance
P75=75th percentile characterises the pupils with good performance
P90=90th percentile characterises pupils with better performance

With the exception of Benin and Senegal, between 2014 and 2019 there is a significant increase in the variability of reading performance. In other words, within these countries, the differences in performance between the weakest and the best performing pupils are increasing. As at the beginning of schooling, generally the greatest progress is observed for the best performing pupils. In Burundi, which is characterized by an average regression of around 35 points, the regression is more significant for the low-performing pupils.

Senegal appears to be the only country that manages to reduce inequalities in performance between 2014 and 2019, since its standard deviation decreases by 16 points. This country therefore manages to take up one of the major challenges of education systems, namely to improve the average performance of pupils, and in particular the weakest, without altering the performance of the strongest pupils. This is a particularly encouraging result in terms of both the efficiency of the education system and its equity.

There is a significant improvement in performance for the weakest pupils in Benin and Niger. In Senegal, the improvement in performance is more noticeable among weak pupils. On the other hand, in Burundi, there was a regression of both the weakest and the best performing pupils.

As in Cameroon, which saw an average increase of 12 points in 2019 compared to 2014, the differences in performance between the best and worst performing pupils have increased. Pupils at the bottom of the ability scale gained an average of 10 points over the course of PASEC2019, while the top performers gained more than 20 points on average. Therefore, equity problems persist in this education system, long after the passage of PAEQUE (Education Equity and Quality Improvement Program). A World Bank program which from 2014 to 2019, aimed to reduce the many disparities in the education system of Cameroon while improving the quality of learning received by pupils.

The percentile X (where X is a value between 1 and 100) is used to divide the observed sample into two subgroups. The first subgroup consists of the X% of individuals with the lowest values and the second subgroup consists of the 100 - X% of individuals with the highest values. Each level of the calculated percentile characterizes a high or low level of performance and has nothing to do with the competency scales defined in this chapter.

It can be seen that for the weakest pupils, all the countries participating in the 2014 and 2019 cycles show an average increase of 15 points. The weakest pupils in Benin, Niger and Senegal increase their performance by more than 40 points from 2014 to 2019. While those in Burundi (-40.5), Ivory Coast (-19.2) and Togo (-10.6) show a regression in average performance.

In the weak group, all countries show an average performance variation of 10.8 points. The national performances of the countries are very similar in the weaker and weakest group. Cameroon shows a substantial increase of almost 7 points in the weak group, which is lower than the average variation of countries in this level of the scale.

In the strong and strongest levels, performance across all countries increases significantly by almost 30 points in 2019 compared to 2014. Pupils in Niger have the largest increase in points across all 10 countries from strong pupils. These pupils gained at least 97 points on average between the two assessments. This indicates a very large increase in the performance gap between the weakest and strongest pupils in this country.

Burundi and Ivory Coast are the only countries that experience regressions in reading performance from 2014 to 2019 at the level of strong pupils. However, Ivory Coast shows an increase in performance among the strongest pupils, which is the only skill level in which this country shows an increase.

Overall, the average performance of pupils has increased significantly from 2014 to 2019. In all skill levels, all countries have seen an increase in average estimated performance, which is less than 15 points in the two lowest skill levels and more than 28 points in the highest. So overall the proportion of pupils who improved their average performance between the two assessments is considerable. Countries such as Benin and Niger showed very significant increases in all skill levels. And others, such as Burundi, only experienced very significant decreases in average performance between the two assessments. Countries such as Benin and Niger have seen very significant increases in all skill levels. And others, such as Burundi, only experienced very significant decreases in average performance at all levels.

4

Cameroon's average performance increased between the two rounds of assessments, and consequently its performance is marked by huge gaps between the weakest and the strongest.

Table 30: Evolution of average performance in Mathematics, by assessment cycle (2014, 2019) and by end-of-school country

Country	2014		2019		Difference	
	Average	Standard error	Average	Standard error	Estimation	Standard error
Benin	496,9	5,1	533,8	6,2	36,9***	7,7
Burkina Faso	539,5	4,4	547,2	4,0	7,7	5,8
Burundi	593,6	2,7	546,0	3,2	-47,6***	3,7
Cameroon	**489,5**	**5,3**	**488,1**	**3,9**	**-1,4**	**7,1**
Congo	481,4	4,0	489,1	3,5	7,7	5,3
Ivory Coast	475,7	3,1	454,0	3,8	-21,7***	5,1
Niger	405,8	4,1	461,8	5,0	56,0***	6,4
Senegal	546,6	6,7	557,6	4,7	11,0	8,4
Chad	450,9	5,7	439,3	4,0	-11,6	7,0
Togo	520,2	5,0	495,4	3,9	-24,8***	6,5
Average	500,0	1,9	501,4	1,5	1,4	2,5

Table 30 shows that, as in the case of school-leaving reading results, Burundi's average performance in Mathematics fell by almost 50 points between 2014 and 2019. The same is true for Togo and Ivory Coast, by 24.8 points and 21.7 points respectively. Only two countries see their average level rise substantially, namely Benin (+36.9 points) and Niger (+56 points). For the other countries, the differences in average scores are not significant.

The average performance of Cameroon regresses by 1.4 points between the two cycles of the evaluation, which is the same number of points in relative value as the average performance of all countries, although these variations are not significant independently for Cameroon or for all countries.

The evolution of pupils according to the different skill levels presented in table 31 will allow us to see the differences in performance between pupils who perform badly and those who perform well in the different countries.

Table 31: Changes in Mathematics performance between 2014 and 2019 at different end-of-school competency levels

Country	Standard Error		P 10		P 25		P75		P 90	
	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.	Est.	E.T.
Benin	-2,2	5,1	45,0	7,2	36,2	6,8	32,8	11,8	42,0	16,8
Burkina Faso	4,4	3,2	4,1	9,0	7,1	7,6	8,7	5,9	13,0	7,3
Burundi	4,9	2,6	-50,1	5,0	-54,0	4,0	-47,7	4,9	-37,8	7,2
Cameroon	**-0,2**	**3,3**	**5,8**	**8,7**	**1,1**	**8,3**	**-8,8**	**8,8**	**-2,3**	**11,9**
Congo	3,8	2,5	-0,1	6,9	5,3	6,1	10,2	7,3	11,4	7,9
Ivory Coast	-1,4	2,7	-12,6	5,4	-21,1	5,9	-26,4	6,5	-19,7	7,7
Niger	14,2	4,8	45,4	7,5	41,5	5,3	63,4	9,2	86,9	15,1
Senegal	-12,9	4,5	32,9	9,7	24,7	10,3	-5,6	10,1	-3,2	11,0
Chad	-10,3	4,8	3,9	7,3	-3,8	5,7	-22,4	11,6	-32,7	14,3
Togo	1,4	3,3	-19,0	7,8	-30,2	7,2	-23,3	10,4	-15,1	9,7
Average	-4,5	1,3	10,4	2,5	4,6	2,8	-6,0	3,0	-2,7	3,6

Niger is the only country that experienced a slight increase in variability in Mathematics performance in 2019 compared to 2014. This variability is reflected in a greater increase in the performance of higher-performing pupils compared to lower-performing pupils. In contrast, Senegal, again, and Chad are characterized by a significant decrease in variability. In Senegal, as in the case of reading results, the lowest-performing pupils make more progress than the highest-performing pupils. In Chad, the lower variability is mainly the result of a decrease in the performance of the best performing pupils.

Cameroon experienced a very slight decrease in average performance in Mathematics among pupils at the end of the primary cycle in 2019. It is mainly characterized by a slight decrease in the performance of the best performing pupils and a very slight increase in the performance of the worst performing pupils.

In sum, out of the ten countries, changes in performance are observed for six countries (Benin, Congo, Ivory Coast, Niger, Senegal and Chad) at the start of schooling in both language and Mathematics. Three countries (Benin, Ivory Coast, Niger) show a higher progression in Mathematics than in language. In the other countries, progress is greater in language than in Mathematics.

At the end of schooling, while six countries out of ten experience an increase in their reading performance, two countries (Burundi and Ivory Coast) experience a regression. Only two countries (Benin and Niger) out of ten show progress in Mathematics, while three others (Burundi, Ivory Coast and Chad) show regression. Two countries (Benin, Niger) which experienced more progress in Mathematics than in language at the beginning of schooling experience more progress in reading than in Mathematics at the end of schooling.

Congo, Senegal and Chad have not progressed in Mathematics while progress has been noted in reading. Burundi is the only country to have experienced a regression in both reading and Mathematics.

The developments observed both at the beginning and at the end of schooling could therefore appear particularly encouraging, if the analyses are limited to the average performance in Mathematics. Indeed, in many countries, significant improvements in average performance have been observed. However, in most cases, this rise in the level of performance of pupils is more marked for the best performing pupils, which goes hand in hand with a widening of the disparities in performance.

4.2 PUPILS IN THE 'COUNTRY' IN INTRA-NATIONAL COMPARISON

In order to be able to present the results of the different countries with their specificities, an adapted methodological framework has been developed and implemented in the PASEC2019 assessment. This framework is an improvement on the previous framework developed for the PASEC2014 evaluation and allows for the comparison of results and key educational characteristics between geographical, political or institutional entities within a country. Cameroon's education system has two sub-systems: Anglophone and Francophone.

The sample of the Anglophone sub-system was divided into four strata corresponding to eight zones allowing reliable comparisons to be made according to the methods of analysis used for international comparisons. The educational variables that enable these zones to be determined are defined in advance by PASEC in collaboration with the national PASEC team in the country.

Thus, the regions were grouped as follows for Anglophone Cameroon: Anglophone West, Anglophone Center, Anglophone Littoral and Elsewhere Anglophone (Adamawa, East, Far North, North, South). This last zone refers to Anglophone schools that are located in predominantly Francophone areas. The other three refer to areas that already have a fairly good mix of Anglophone and Francophone populations and which subsequently experience a very large influx of IDPs from the North West and South West regions (NOSO). This sampling is very different from PASEC2014, firstly because the mainly Anglophone NOSO regions were not included because of the socio-political crisis there and the order of education was no longer used as a parameter in the other areas.

The weighting assigned to each of these strata allows the sample to reflect the distribution of pupils in order to estimate the average achievement and level of educational characteristics of a country without surveying the entire population of pupils in school.

These strata are shown in the map below (Figure 3).

Figure 4: Map of Cameroon with representation of the different zones (strata) in the Anglophone subsystem
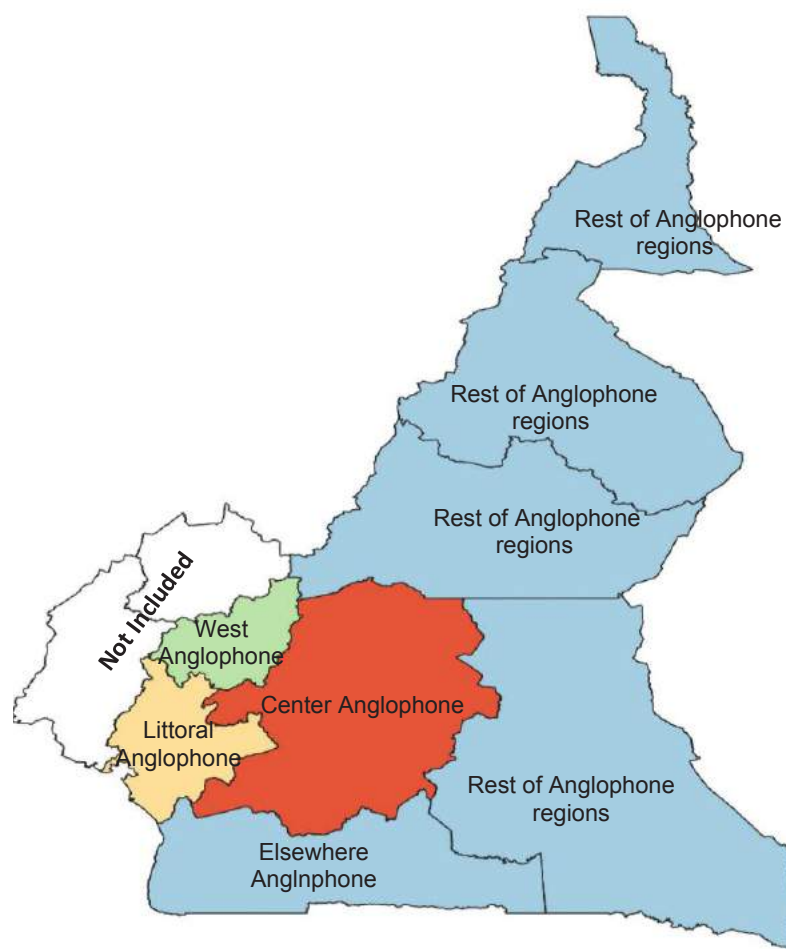
 The weighting assigned to each of these strata allows the sample to reflect the distribution of pupils in order to estimate the average results and the level of educational characteristics in Cameroon without surveying the entire population of pupils enrolled in school.

4.2.1 Pupils' skills (geographical distribution)

Descriptions of pupil performance by geographical distribution or strata will be elucidated according to two groups: those strata with average performance above the average performance of all strata and another group for strata with lower average performance. This will be seen in terms of the share of pupils who have reached the minimum threshold of expected competences in the different reading and Mathematics tests.

At the end of schooling, 53.7% of Cameroonian pupils are above the "sufficient" threshold of reading skills. The Anglophone sub-system has 20% more children than the country's overall percentage in this category, with almost the majority (48.4%) of these pupils reaching the top of the competency scale. Only 22.3% of pupils fall below the minimum threshold of competence, and less than 1% show no competence or knowledge as measured by this test. This sub-system thus shows a better national average performance than the country as a whole. In sum, out of 9 pupils randomly selected at the end of school, 7 can extract implicit information from written material by making sense of implicit connectors, anaphors or referents.

• **Reading**

Graph 9 : Percentage distribution of pupils in the strata of the Anglophone sub-system in Cameroon according to the reading literacy scales - End of schooling
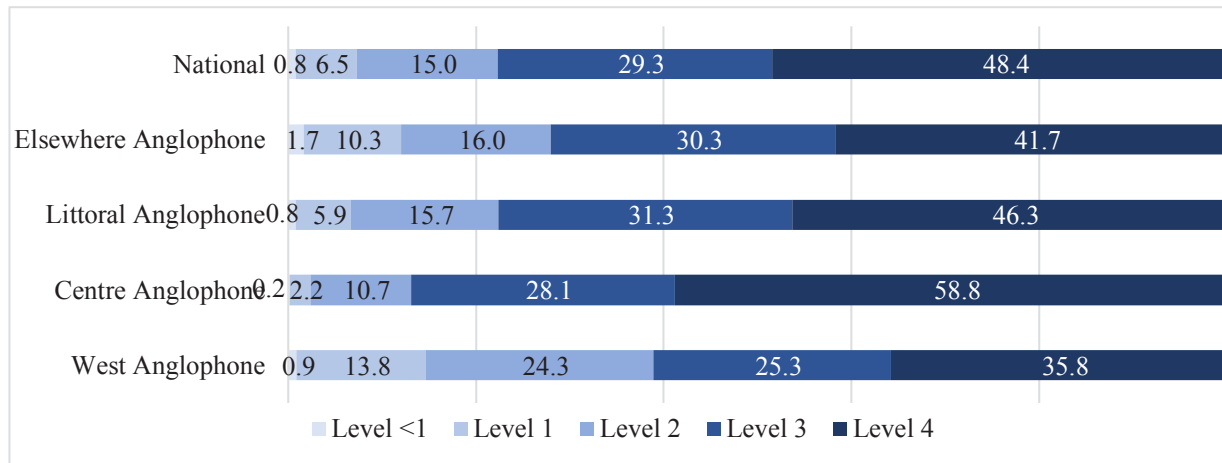
The Center (86.9%) places almost all of its pupils above the sufficient threshold of reading skills for this subsystem, with almost 59% reaching the top of the scale. It is followed in this ranking by Littoral, which shows a proportion of pupils above the sufficient threshold similar to the subsystem as a whole, but with slightly fewer pupils at the top 46.3% against 48.4%. The Remaining Anglophone stratum, comprising all the EPA regions and the South region, has 72% of its pupils in this category, of whom 41.7% are at the top of the scale. The West records 61% of these pupils above the minimum threshold, which is below the overall average proportion for the sub-system. The performance of this last stratum is surprising and below expectations, as it is geographically and culturally closest to the North-West and has the highest concentration of IDPs.

At the lower end of the reading performance rankings for these areas, the West (39%) and the Elsewhere Anglophone (28%) have the highest shares of pupils below the sufficient reading threshold, all of which are higher than the average share for all strata. These pupils can neither extract implicit information from written material by making sense of implicit connectors, anaphors or referents, nor locate explicit information in long texts and documents with discontinuous text. The Elsewhere Anglophone group, with only 1.7%, has the highest proportion of pupils below Level 1 of any stratum in this sub-system. The Center, with only 13% of pupils below the threshold of reading skills expected in this test, has notably (0.2%) who do not demonstrate any of the skills assessed. The Littoral shows average performances that reflect and are similar to those of all the strata, this region shows the median level of Cameroonian Anglophone pupils at the end of primary school.

This also highlights the added value of separating these regions into different strata and especially the fundamental and very clear differences that exist between the international assessments and the national examinations.

In short, by dividing the performance of the strata in relation to the average performance of the English-speaking sub-system, taking into account the minimum threshold of skills expected in this reading assessment. There is only one stratum that performs above average: the Center; one that is at the same level: the Littoral; and the other two that are below: the Rest of the Anglophone sub-system (grouping of EPA plus the South) and the West.

4

• **Mathematics**

In the country as a whole, 33% of pupils at the end of the primary cycle are above the minimum threshold of expected competences in Mathematics. This share of pupils is slightly higher than 20% in the Anglophone sub-system, with 16.6% of pupils at the top of the competency scale. It can be seen that the proportions of pupils in this subsystem are slightly higher than the averages for the two subsystems put together in all skill levels above the minimum threshold of expected skills. This subsystem has 47% of pupils below the "sufficient" threshold, with 11.7% at the bottom of the scale.

Graph 10: Percentage distribution of pupils in the strata of the Anglophone sub-system of Cameroon according to the scales of competence in Mathematics - End of schooling
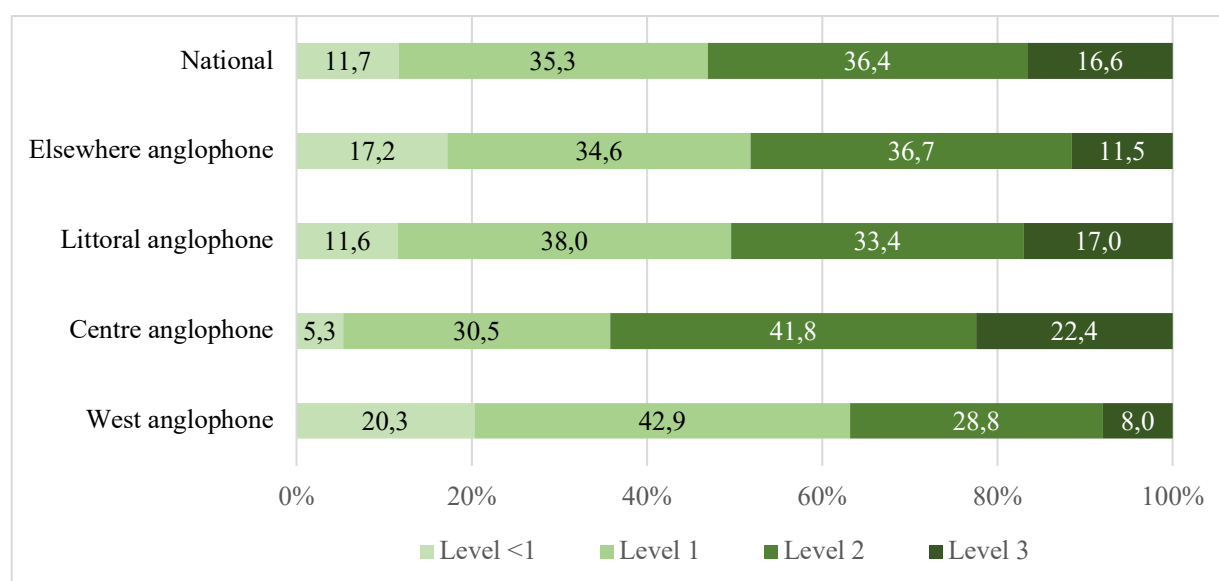
As in reading, the Center (64.2%) has the highest proportion of pupils at the end of the primary cycle above the sufficient threshold of expected competences in Mathematics. The majority of pupils in this stratum obtained at least 521 points in this evaluation, of which 22.4% were able to achieve more than 609 points.

The Littoral performed below the average for the whole sub-system in this subject. Nevertheless, more than half of these pupils have at least 521 points on this assessment and 17% go as far as obtaining at least 609 points. Next, we have the Elsewhere Anglophone stratum, which has 48.2% of pupils above the minimum threshold of expected competences measured by this test.

The West region still ranks low with more than the majority (63.2%) of these pupils below the sufficient threshold, scoring less than 521 points. This stratum has the highest percentage of pupils (20.3%) in the category of those who do not sufficiently demonstrate the skills measured by this test in the language of schooling, pupils who are struggling with Level 1 knowledge and skills. It is followed by the Elsewhere Anglophone stratum with 17.2% in this category.

The Littoral is the only one of these strata that shows average performance similar to the average performance of the whole in both ends of the skills scale.

The shares of pupils who did not reach the "sufficient" threshold of competencies expected in this test, although moderately high, are acceptable compared to those of Cameroon as a whole. The performance of the Western stratum deserves a little more attention, because how can we understand that a zone that is geographically and culturally mixed with an Anglophone area shows performances below those of the Educational Priority Area (EPA) zones?

4.2.2 Variation of the average score (geographical distribution) in relation to the national average

In this section, the average scores in reading and Mathematics according to strata will be presented in comparison with the national average.

Graph 11: Variation in the average score of the strata in relation to the national average in language and Mathematics - End of schooling
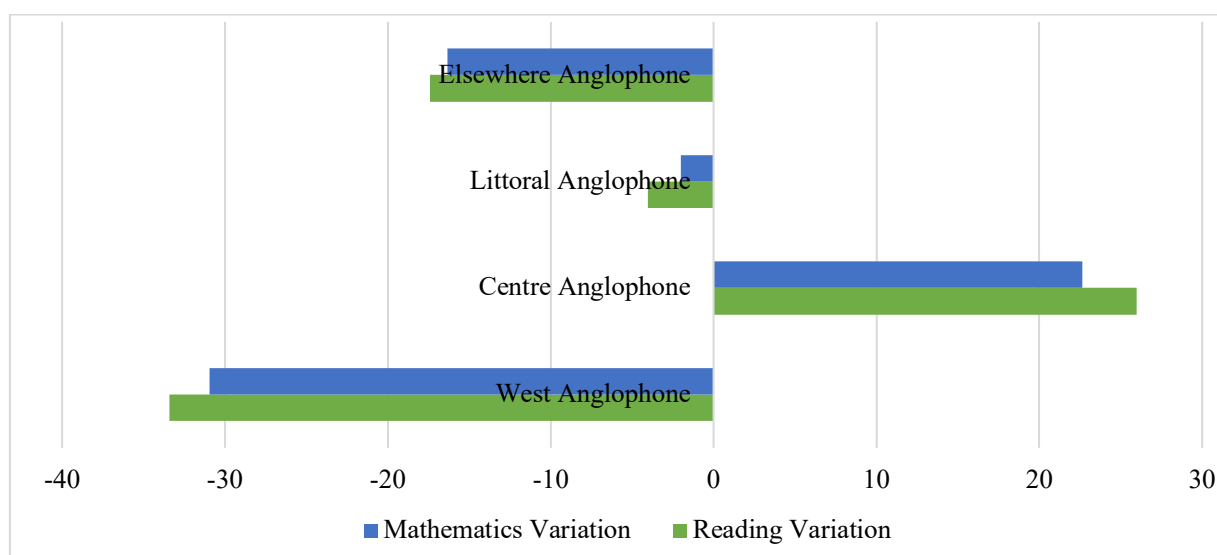
These comparisons make it possible to target the strata that are the least successful overall, for the end of schooling and the two subjects assessed. At the end of schooling, the pupils in the Center stratum were the only ones to record average scores that were statistically superior to those of the sub-system as a whole in both subjects. The average performance of pupils in the Center stratum in reading and Mathematics is more than 26 and 23 points higher than the national average in this subsystem. The other strata show national averages in both subjects that are statistically below the overall averages. The Littoral averages only 4 points lower in reading and 2 points lower in Mathematics than the overall average. The average scores of this stratum are roughly equal in both subjects to those of the whole. However, there is a gap in the performance of the whole with the other two strata, firstly with the Elsewhere Anglophone stratum, which shows a 17-point drop in reading and a 16-point drop in Mathematics, and this is very accentuated with the West Anglophone stratum. The latter shows the greatest variations in average scores in relation to the overall average score of the sub-system with 33 points in language and 31 points in Mathematics.

Overall, the differences are more pronounced in reading than in Mathematics, with pupils in the Center raising the average performance of the whole, those in the Littoral being average, while those in the West and the Elsewhere Anglophone region lowering their performance.

Box 4.1: Definition of the relationship between the average score and its standard deviation

The relationship between the average score and its standard deviation reflects the level of disparity of pupils' scores around the national average, which also gives a picture of the equity of the education system, especially when compared to the situation in other countries. Thus, a high average score with a low standard deviation would be the result of an education system that is both efficient and equitable, with pupils having results close to the national average. Conversely, a high average score and a high standard deviation would indicate a well-performing but not very fair education system. A low average score with a low standard deviation reflects homogeneity of low pupil performance around the national average.

Graphs 12 and 13 below show the performance of the strata of the francophone subsystem in relation to the level of disparity in pupils' scores. The aim here is to give a general idea of the homogeneity of pupils' results in reading and Mathematics at the end of schooling.

In reading, in all the countries whose average score is higher than the international average in the PASEC2019 assessment, it can be observed that the disparities in pupil scores are very significant in Cameroon.

Graph 12 Link between average reading scores and standard deviations - End of schooling
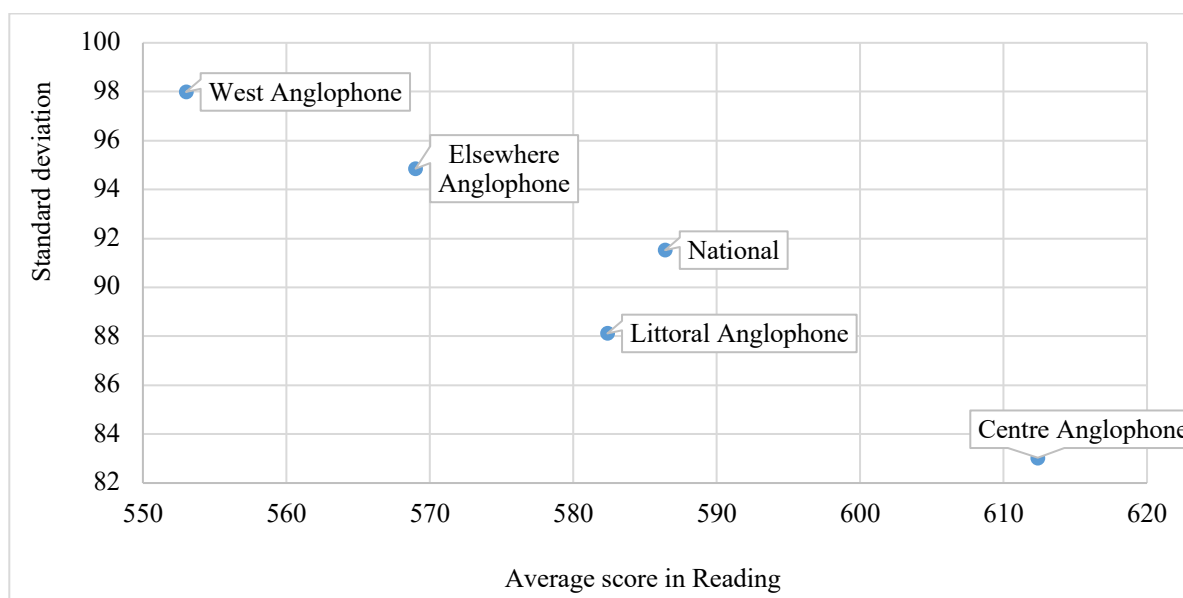
In reading, the Center (612.4 points) has the lowest standard deviation, this stratum shows a relatively low level of disparity. The performance of pupils in this stratum is somewhat more homogeneous, with no great differences between the performance of the strongest and weakest pupils. The Littoral recorded an average reading score slightly lower than the average score for the sub-system and also less disparity between the performance of the weakest and strongest pupils in this stratum. The Elsewhere Anglophone and West strata show the greatest disparities in performance between their pupils.

In sum, this education sub-system is very heterogeneous and inequitable as a whole.

Graph 13: Average score and standard deviation of strata in Mathematics - End of schooling
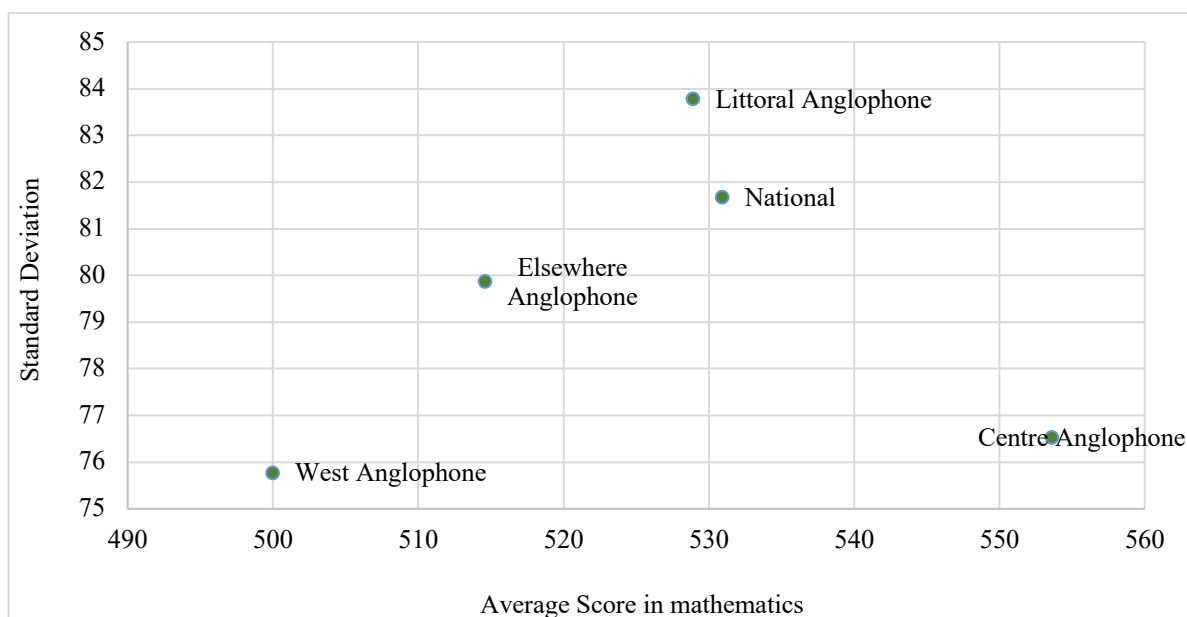
In Mathematics, the pupils of this subsystem show relatively less disparate differences in average performance than in reading. There is some homogeneity between the lowest and highest performing pupils. This is most noticeable in the Western stratum, which, although it has the lowest average score in Mathematics (500 points), also has the lowest standard deviation (76 points) of the whole. The Center, while recording the highest average score (554 points) per stratum, has a low standard deviation (77 points) very close to that of the West stratum. This implies that the pupils in these two strata have approximately the same average levels in their respective strata, and if efforts to improve the education system are made, they will benefit the great majority in these two strata. The Littoral has a standard deviation of 84 points on average between the performance of the strongest and weakest pupils. Overall, the performance of pupils at the end of primary school in Mathematics in the Anglophone sub-system, although relatively weak, is somewhat less disparate in Mathematics than in reading.

Those in charge of this subsystem must strengthen remedial actions to make this performance better and more homogeneous.

CHAPTER 5

ANALYSIS OF THE SCHOOL ENVIRONMENT AND LINK WITH PUPILS' PERFORMANCE

The aim of this chapter is to analyse the school environment of pupils and to make the link with their performance in reading and mathematics in the Cameroonian Anglophone sub-system.

The aim is to understand the differences in performance according to the context (geographical, school context, etc.) and to analyse the school and non-school factors that correlate with pupils' performance. To this end, this chapter will attempt to present some discriminating characteristics of pupils (gender, parental literacy, nursery school attendance, repetition, age, etc.), classes and schools (classroom equipment, school infrastructure, school amenities, etc.) in the Anglophone sub-system in Cameroon.

5.1. VARIATION IN PERFORMANCE BETWEEN SCHOOLS AND BETWEEN PUPILS

As has been observed internationally, the school environment is an important factor in the performance of Cameroonian pupils at the beginning and end of their schooling in both language and mathematics. Putting all pupils in the same schooling conditions (despite the existing gap between urban and rural infrastructures) also remains a challenge in Cameroon, as in general in the countries evaluated.

Inequalities in performance can be explained by factors at pupil or school level. The decomposition of the variance of the scores makes it possible to measure the weight of each factor (pupil level or school level) in the variation of the performance of Cameroonian pupils in the Anglophone subsystem.

Graph 14: Decomposition of the variance of scores at the beginning of schooling - Language and Mathematics
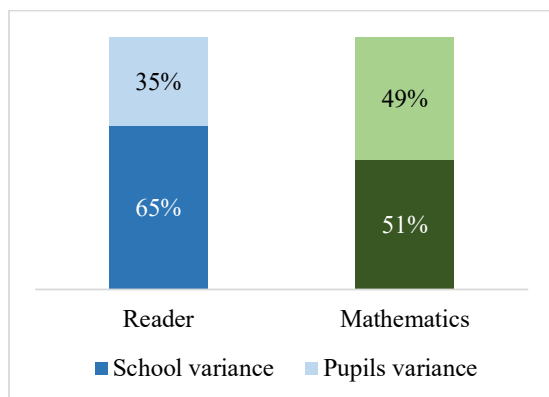
Graph 15: Decomposition of the variance of scores at the end of schooling - Language and Mathematics
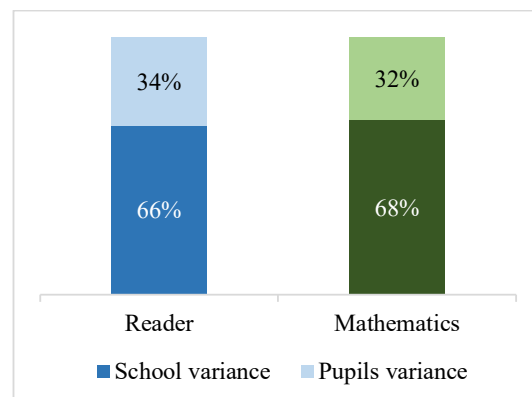
In reading in the Anglophone subsystem, the same situation is observed at the end of schooling as at the beginning. Indeed, approximately 66% of the variance in reading scores was explained by differences between schools.

In mathematics, the variance in scores is more explained by differences between schools in the Anglophone subsystem at the end of schooling than at the beginning. Indeed, the value of 68% is observed at the end of schooling, compared to only 51% at the beginning of schooling.

Thus, in the Anglophone subsystem in Cameroon in general, both at the beginning and at the end of schooling, the inter-school variance in scores is greater than the intra-school variance. This means that the variation in performance is much more explained by differences between schools, which can be due to the location of schools (urban or rural), the type of schools (public, private), their provision of adequate equipment for learning. The part of the variance explained by the differences between pupils is not negligible and could come from several factors (individual characteristics of the pupil, socio-economic status, etc.). The fact that the variance between schools is observable at the national level still shows the important problems of equity between the different regions of Cameroon.

5.2. ANALYSIS OF DISPARITIES IN PUPIL AND FAMILY BACKGROUND CHARACTERISTICS

This section presents, in the English-speaking sub-system, the differences in context, both at the socio-economic and the school level, based on the comparison of the characteristics and performance of pupils between different areas of the country.

Several indices have been produced and used in the different parts of this section, and the following boxes briefly describe their methods of calculation.

Box 5.1: Description of the socio-economic index

Information on the socio-economic level of families is collected from pupils at the end of primary school through a series of questions concerning the availability of material goods in the household and the characteristics of the dwelling: number of books in the home, possession of capital goods (television, computer, radio, DVD player, hi-fi system, mobile phone, freezer or refrigerator, air conditioner, fan, cooker), possession of durable goods and means of transport (table, sewing machine, iron, car or truck, (table, sewing machine, iron, car or truck, tractor, moped or scooter, bicycle, boat or dugout, cart), materials used for the construction of the dwelling house, presence of latrines, presence of electricity in the house, main source of water used in the house (subscription, tap, public fountain, well, borehole, spring, river.).

This information is collected through a questionnaire administered to the class 6 pupils in the sample. The pupils' answers are reported on an international scale of mean 50 and standard deviation 10 in order to construct a socio-economic index. Higher values of the index correspond to better living conditions, while lower values are associated with poorer households. The index is not in itself an indicator that specifically measures the degree of poverty of pupils' families relative to an international or national standard; it is primarily intended to produce a single dimension ranking for pupils' families based on variables measuring living conditions.

Box 5.2: Description of the class equipment index

Information on the level of equipment in the classrooms that pupils attend is collected from teachers through a series of questions concerning the availability of textbooks for pupils, teaching documents and materials for teachers and classroom furniture: number of mathematics and reading textbooks available per pupil; availability of textbooks, teaching guides and curricula for the teacher in reading and mathematics; availability of teaching materials (chalkboard, chalk, dictionary, maps of the world, Africa and the country, measuring materials such as square, compass, ruler and clock) and availability of classroom furniture (desk and chair for the teacher, cupboard and shelves for storing books), availability of desks, ruler, slate, chalk, notebook, binder in sufficient number for the pupils), availability of electricity in the classroom and the type of materials used for the construction of the classroom.

The teachers' responses are summarised on an international scale with a mean of 50 and a standard deviation of 10 in order to construct a classroom equipment index. The higher the index, the better the equipment in the classrooms. For the purposes of comparing pupil performance, the index data is broken down into quartiles. The index is not in itself an indicator to specifically measure the degree of equipment of classes against an international or national standard; it is mainly intended to produce a ranking along a single dimension from the variables measuring the equipment of these classes. In this section, the average classroom equipment index (average per school) is used.

5

Box 5.3: Description of the school infrastructure index

Information on the level of infrastructure of the school attended by pupils is collected from school head teachers through a series of questions concerning the availability of equipment, the possibilities of accommodating pupils in classrooms and the existence of sanitary facilities: number of functional classrooms, type of materials used in the construction of classrooms, availability of certain facilities (a separate office for the head teacher, a place to store materials, a teacher's room, a playground, an independent sports field, a fully fenced perimeter, a first-aid box, accommodation for teachers or head teachers, running water, a source of drinking water other than running water, electricity, computer equipment, etc.) The availability of a canteen and the existence of latrines or toilets, including physical hygiene facilities.

The head teachers' responses are summarised on an international scale of mean 50 and standard deviation 10 in order to construct a school infrastructure index. The higher the index, the better the schools' infrastructure. For the purpose of comparing pupil performance, the index data is split into quartiles. The analysis in this chapter focuses on the first and last quartiles. The index is not in itself an indicator to specifically measure the degree to which schools are endowed with infrastructure relative to an international or national standard; it is primarily intended to produce a ranking along a single dimension constructed from the variables measuring the infrastructure of these schools

Box 5.4: Description of the spatial planning index

Information on the level of spatial planning of the schools attended by the pupils is collected from the school head teachers through a series of questions concerning the infrastructure of the area where the school is located: availability of electricity, presence of a paved road, a secondary school, health infrastructure (health hut, dispensary, hospital), a bank, a microfinance institution and a cultural or social Center, a library, etc. The head teachers' answers are synthesised on an international scale of 50 and 10 so as to construct an infrastructure index for the school.)

The head teachers' responses are summarised on an international scale of mean 50 and standard deviation 10 in order to construct a school infrastructure index. The higher the index, the better the schools' infrastructure. For the purpose of comparing pupil performance, the index data is split into quartiles. The analysis in this chapter focuses on the first and last quartiles. The index is not in itself an indicator to specifically measure the degree to which schools are endowed with infrastructure relative to an international or national standard; it is primarily intended to produce a ranking along a single dimension constructed from the variables measuring the infrastructure of these schools.

5.2.1. Gender of the pupil

Inclusive education is included in the 2030 education agenda. One of the goals of the MDGs 4 is to "Ensure equal access to quality education for all and promote lifelong learning opportunities". Gender, therefore, is an important issue in the quest for inclusive education, as in most countries in sub-Saharan Africa, access to and continuation in education is often at the expense of girls.

In Cameroon, despite the country's commitment in the Education and Training Sector Strategy Paper to reduce inequalities in access and learning between girls and boys, inequalities in access to education to the disadvantage of girls still persist, both at the national level and in the various zones of the Anglophone sub-system, and both at the beginning and end of primary schooling.

Although there is almost perfect parity at the beginning of schooling, there are more girls (51.3%) than boys (48.7%) at the end.

However, several disparities are observed according to the different strata of the country's English-speaking sub-system. The following trends emerge:

- In the Center and Littoral strata, the percentage of girls in primary school is higher than that of boys both at the beginning of schooling (51.9% for the Center and 53% for the Littoral) and at the end of schooling (50.4% for the Center and 52.9% for the Littoral).

- The Western stratum is the only one where more girls are found at the beginning of schooling (60.5%) than at the end (47.4%).
- In the Rest of the Anglophone regions, there are fewer girls at the beginning of schooling (35.5%) and more at the end (52.8%).

Overall, the trends observed through the PASEC2019 data reveal that Cameroon still has gender inequalities in access and retention, despite the measures taken by the government to promote parity between girls and boys (see graphs 5.3 and 5.4).

Graph 16: Distribution of pupils by sex at the start of schoolin   *Graph 17: Distribution of pupils by sex at the end of schooling*
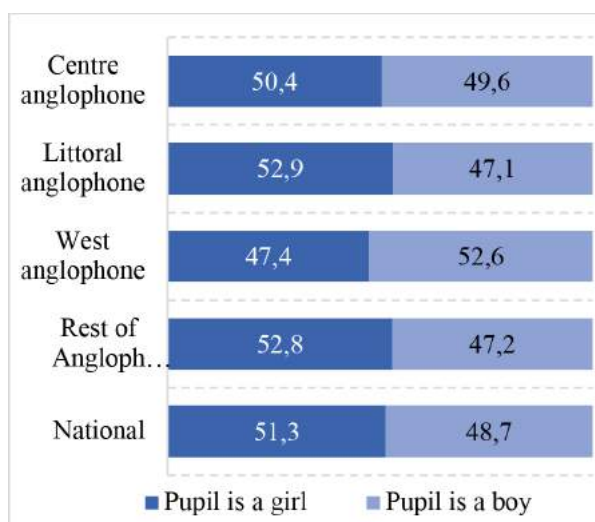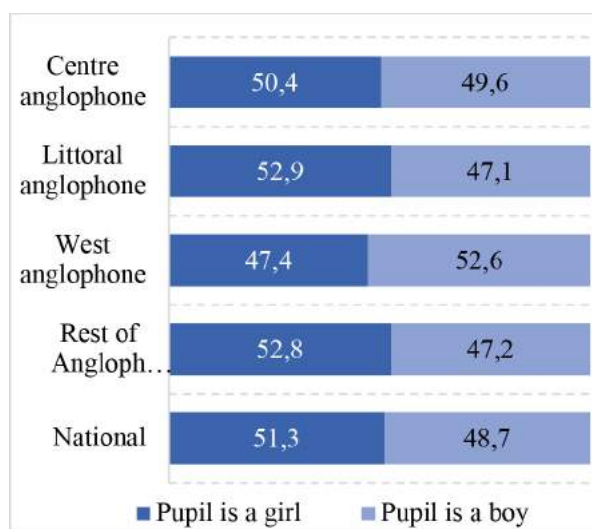
In terms of educational outcomes, the following graphs present the differences between average scores by gender in reading and mathematics at the beginning and end of the primary cycle, and by strata. Each graph takes into account the standard error of measurement for each outcome.

At the beginning of schooling in the Anglophone sub-system, there was no significant difference in mathematics alone by gender. This finding is also observed in all Anglophone strata.

In language, girls score statistically higher than boys. This is also observed in the Western and Littoral strata (see Graph 18).

Graph 18: Pupils' performance in language and mathematics at the beginning of schooling, by gender
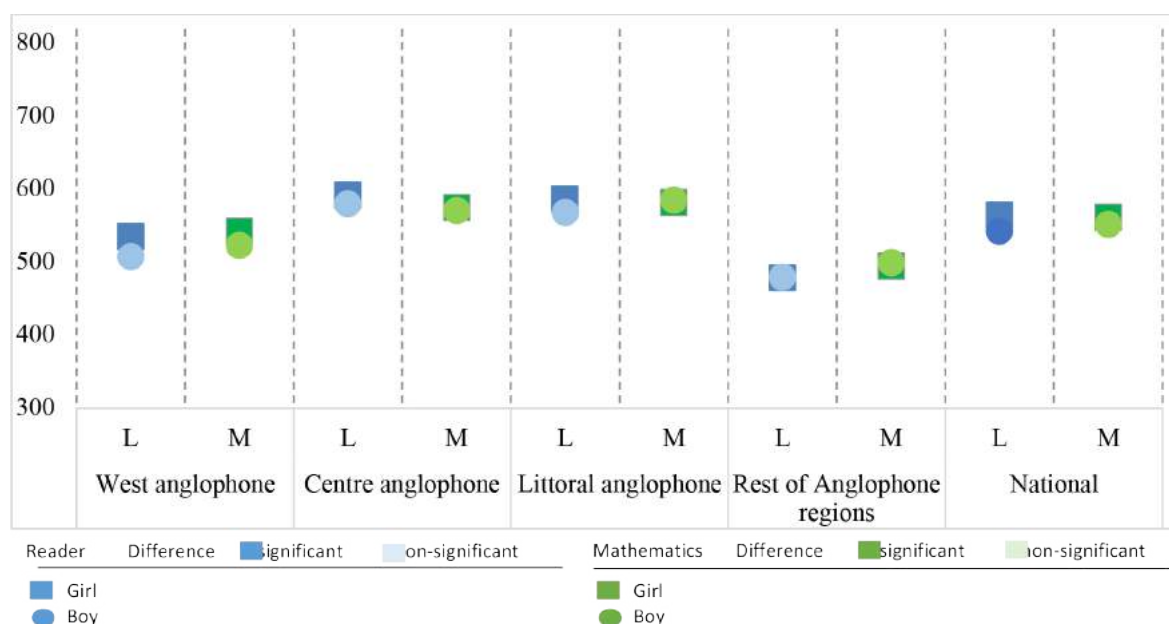
At the end of schooling, the significant difference between the results of girls and boys is almost nil. The same trends are observed in all strata, except in the Rest of the Anglophone stratum where boys have a statistically higher score than girls in language and mathematics.

Graph 19: Pupils' performance in language and mathematics at the end of schooling by gender
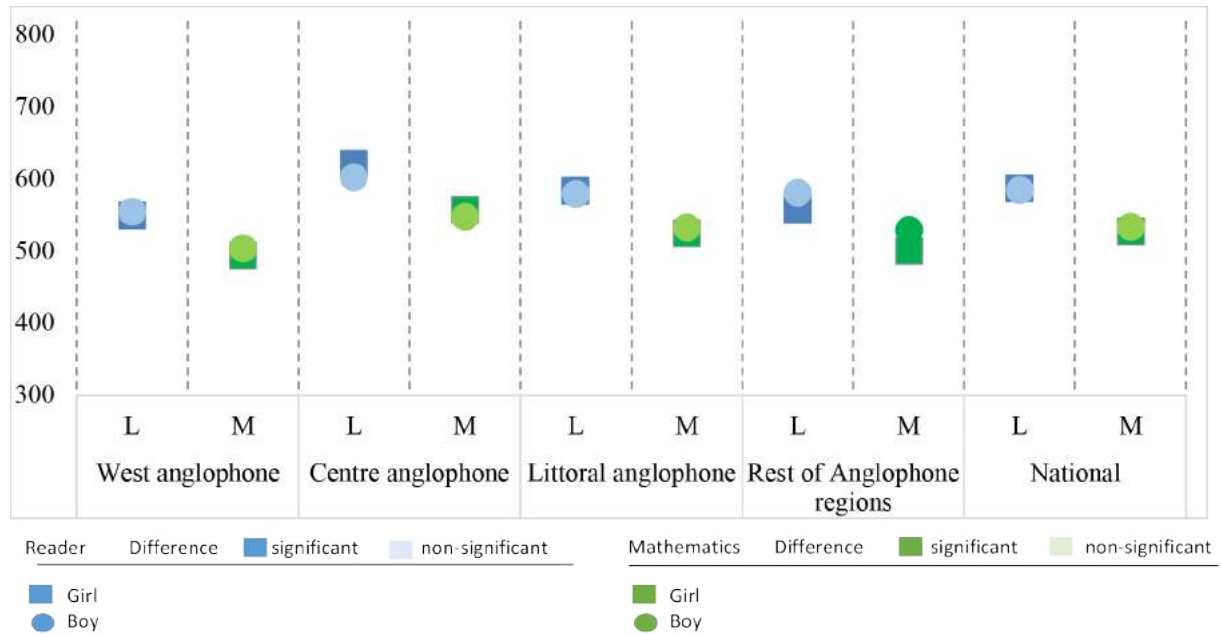
Overall, even if the differences in performance between girls and boys are not systematically in favour of boys, the analysis of PASEC2019 data highlights the persistence of the problem of parity in the Cameroonian education system, as in the other countries evaluated. The achievement of parity is probably linked to socio-cultural factors that go beyond the school setting and refer to the family unit itself.

5.2.2. Socioeconomic level and performance of pupils

In order to visualise the socio-economic disparities of primary school pupils (grade 6) in the Anglophone sub-system in Cameroon, Graph 20 presents the average level of the socio-economic index as measured through the PASEC2019 assessment. The average level of this index is given for each English-speaking stratum and is compared to the national English-speaking value in order to determine whether there are significant differences in favour or against a stratum compared to the national trend.

Globally, there are no major disparities between the different Anglophone strata, as the difference between the national average and the strata averages is less than two points. However, only the Center stratum has a higher socio-economic level than the national average for the English-speaking sub-system.

Graph 20: Average level of the socio-economic index of pupils in the Anglophone sub-system - End of schooling
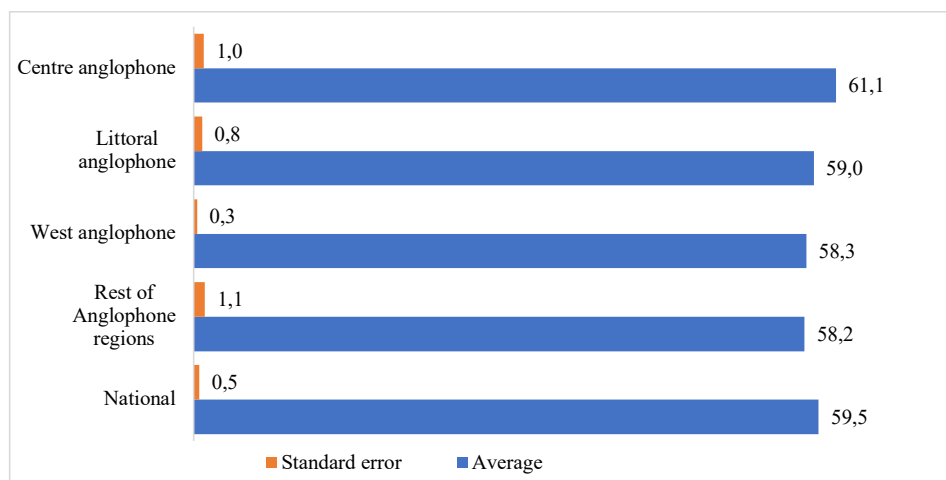
Depending on the socio-economic level, the equity of an education system can be measured by the gap between the average performance of pupils in the 4th quartile (the top 25% of pupils) and that of pupils in the 1st quartile (the bottom 25% of pupils). The smaller the gap, the fairer the education system would be.

At the national level in the English-speaking sub-system, the differences in performance between pupils from the most advantaged and least advantaged households are significant in reading at the end of schooling. This situation is also observed in all strata except the Western stratum. Controlling for the socio-economic index, we find that pupil performance is still not significant in reading and mathematics in the Western stratum, as well as in the Rest of the Anglophone stratum.

As already observed in 2014, it appears once again that, overall, primary schools in Cameroon are not yet able to neutralise the effects of pupils' social origin on their school performance. This characteristic reflects a lack of equity at the national level.

Graph 21: Average difference between the scores of pupils from a given school and pupils with a socio-economic level one unit lower, at the end of schooling-Reading
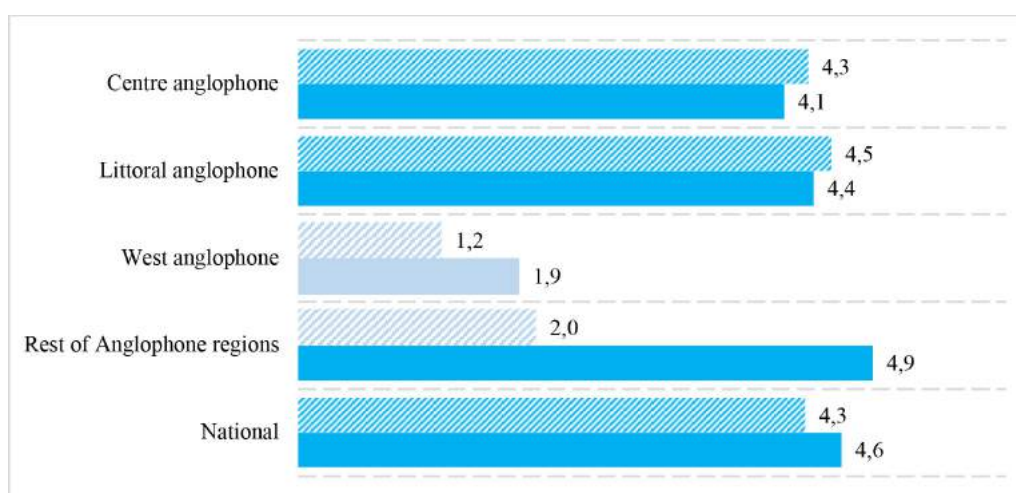
Still at the end of schooling, but in mathematics this time, the same findings observed in reading emerge, with very significant gaps at the national level, as well as in all strata except the Western stratum.

Graph 22: Average gap between the scores of pupils from a given school and pupils whose socio-economic level is one unit lower, at the end of schooling – Mathematics

5.2.3. Difficulty reading on the blackboard and reading a book

5.2.3.1.Difficulty reading from the blackboard

A pupil's difficulty in reading from the blackboard can lead to learning difficulties in reading for some pupils. In the English subsystem, on average 22% of children have difficulty reading the blackboard at the end of school. The highest proportions of pupils with difficulties in reading the blackboard are found in the Western (31.6%) and Central (24.4%) strata.

Graph 23: Distribution of pupils according to their difficulty in reading the blackboard at the end of schooling
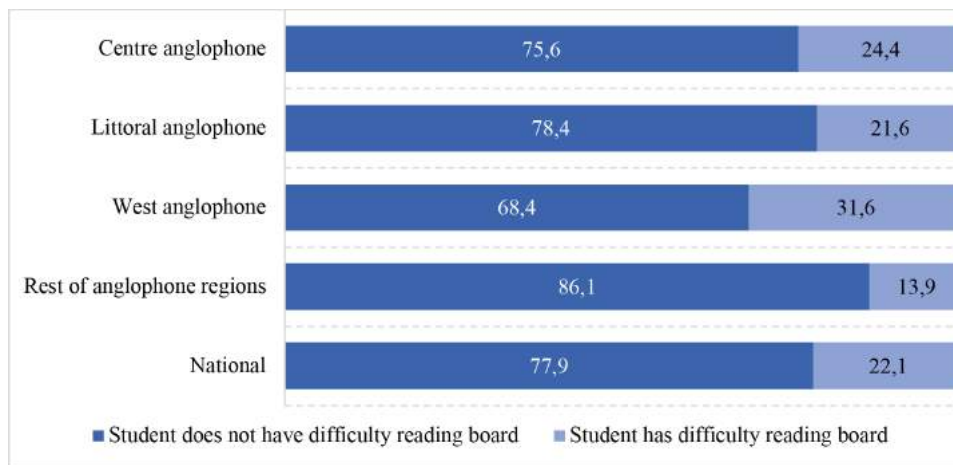
On average in the Anglophone subsystem at the end of the course, pupils who do not have difficulties reading books, perform better than those who have difficulties reading on the board in both subjects.

According to the different Anglophone strata, the performance gap is significant in the West and in the Rest of the Anglophone regions, in both subjects. On the other hand, this gap is not significant in the Littoral and the Center.

Graph 24: Performance of pupils in reading and mathematics according to their difficulty in reading on the blackboard at the end of schooling
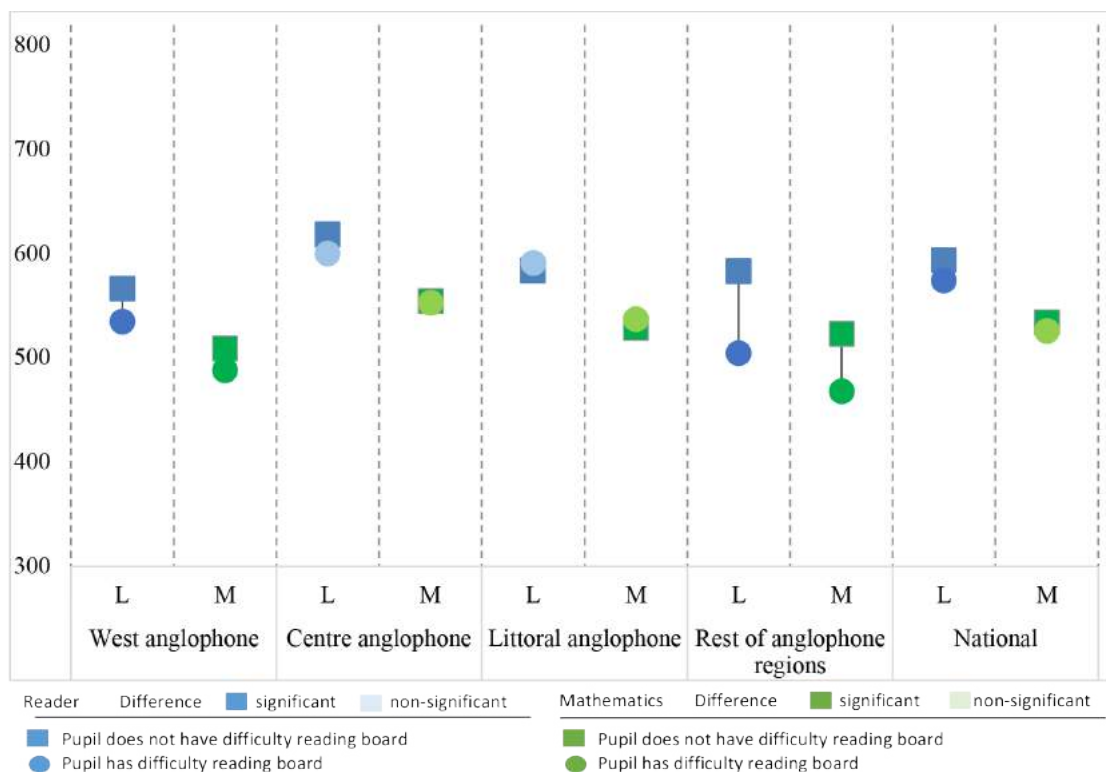
5.2.3.2. Difficulty in reading a book

The percentage of pupils at the end of schooling in the Anglophone sub-system who have difficulty reading a book is 24.5% (see graph 25). This proportion is still high when we know that at the end of schooling, all Cameroonian children should be able to read easily, understand simple texts and write about ten lines while mastering the problems of vocabulary, spelling and syntax.

As for difficulties in reading on the blackboard, the highest proportion of pupils who cannot read a book at the end of their English schooling is in the Western stratum (37.4%).

Graph 25: Distribution of pupils according to their difficulty in reading a book at the end of schooling
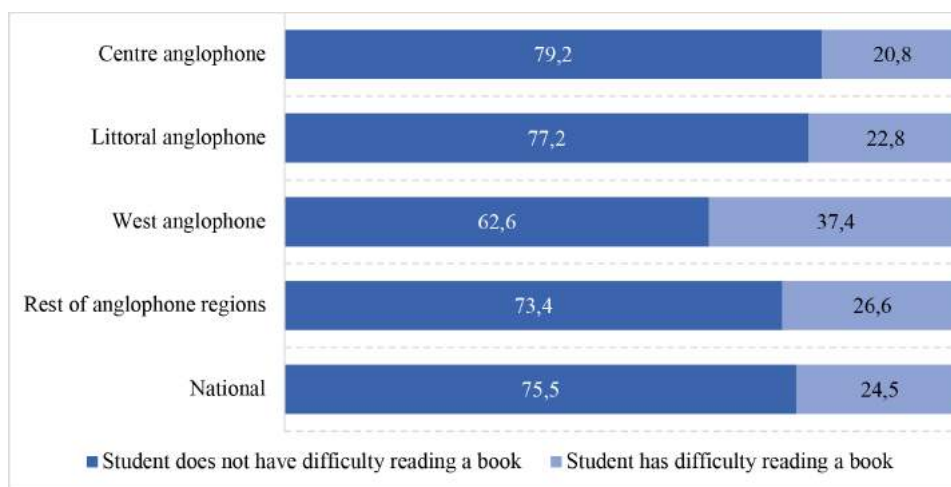
On average in the Anglophone subsystem at the end of school, pupils with no book reading difficulties perform better than those with book reading difficulties in reading and mathematics. The situation is similar only in the Western and Rest of Anglophone strata.

Graph 26: Performance of pupils in reading and mathematics according to their difficulty in reading from a book at the end of school
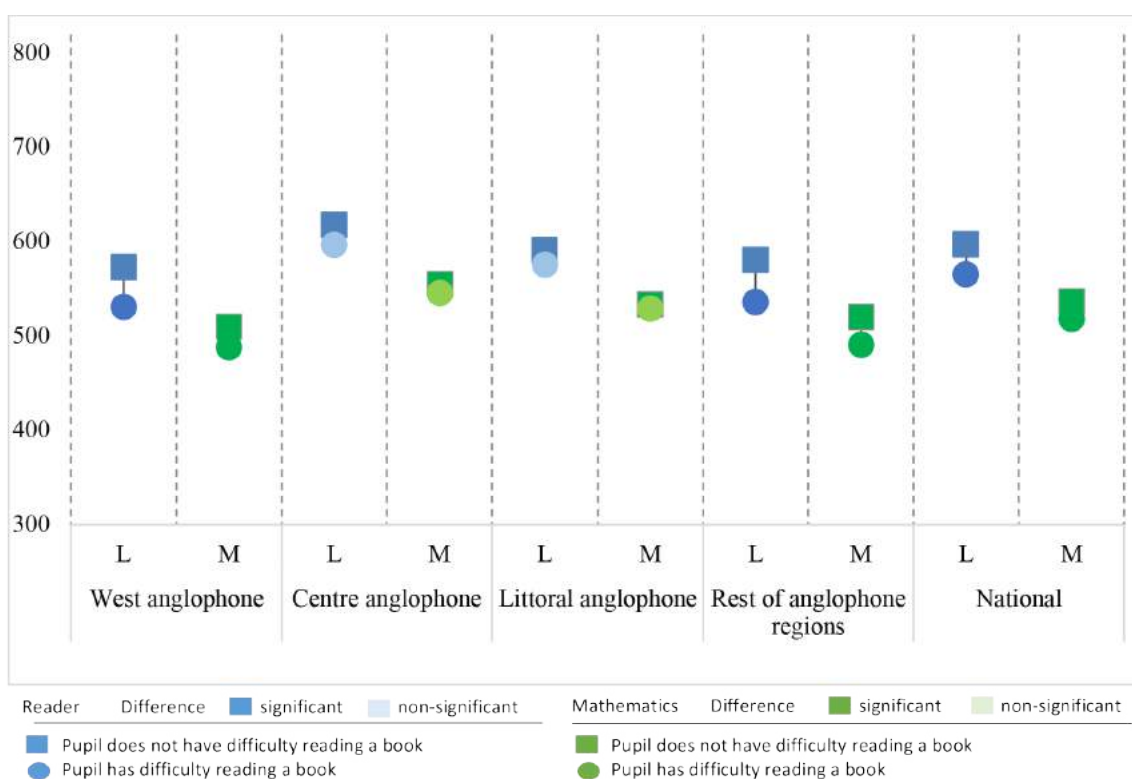
5.2.4. Language spoken at home

The national linguistic context and the status of the language of instruction are particular dimensions to be considered in understanding the learning context of pupils in Cameroon, especially because of the great diversity of mother tongues and their use in daily life.

In the Cameroonian Anglophone sub-system, at the beginning of schooling one pupil in four (about 25% of pupils) never speaks the language of instruction at home.

The rest of Anglophone stratum (52.6%) stands out with a high proportion of pupils at the beginning of schooling who do not speak English at home. It is followed by the Western strata (24.4%).

Graph 27: Distribution of pupils according to the frequency with which they speak English at home at the beginning of their schooling
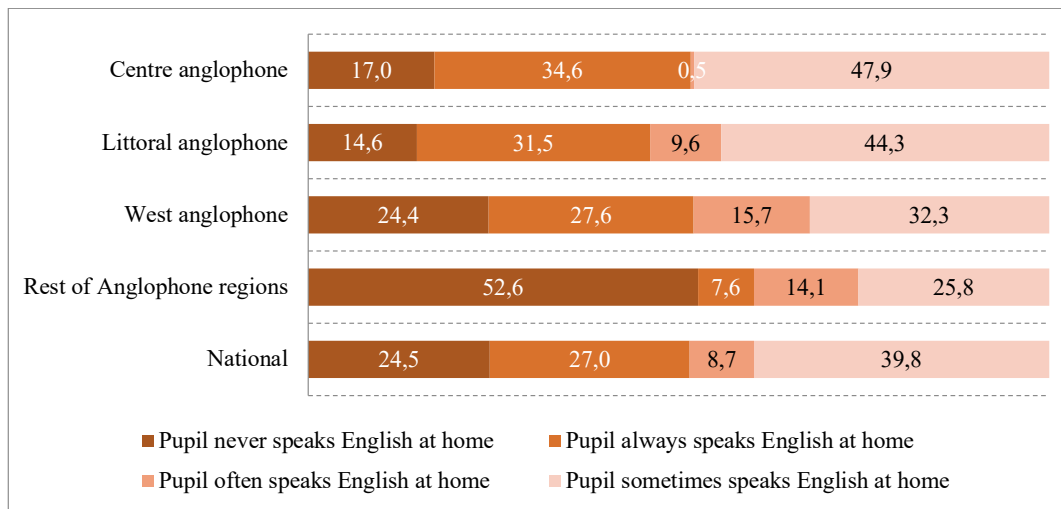
Overall, on average, in the Anglophone subsystem at the beginning of schooling, the performance gap in reading and mathematics between pupils who never speak English at home and those who speak English fluently at home is very significant. Indeed, those who speak fluent French at home perform better than those who do not. The major finding here is that speaking English at home greatly improves the performance of early school leavers in the English-speaking sub-system.

The performance gaps are particularly large in the Littoral and Center strata.

Graph 28: Pupils' performance in reading and mathematics according to the frequency with which they speak English at home at the beginning of schooling
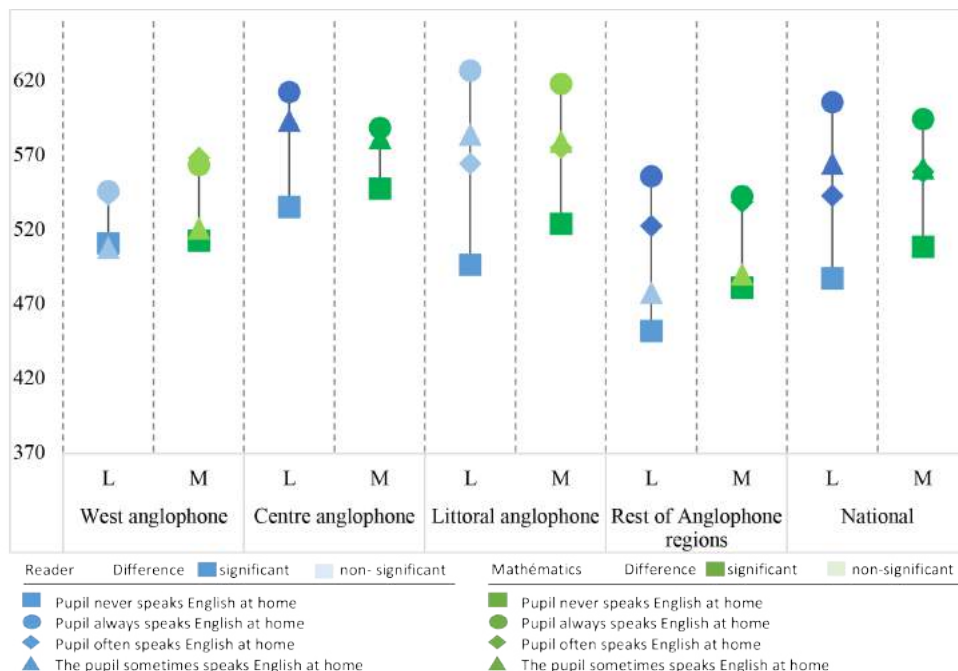
At the end of schooling in the English-speaking sub-system, there is a low proportion of pupils who do not speak English at home, about 8% on average at national level. This trend is also observed in all other English-speaking strata.

Graph 29: Distribution of pupils according to the frequency with which they speak French at home at the end of their schooling
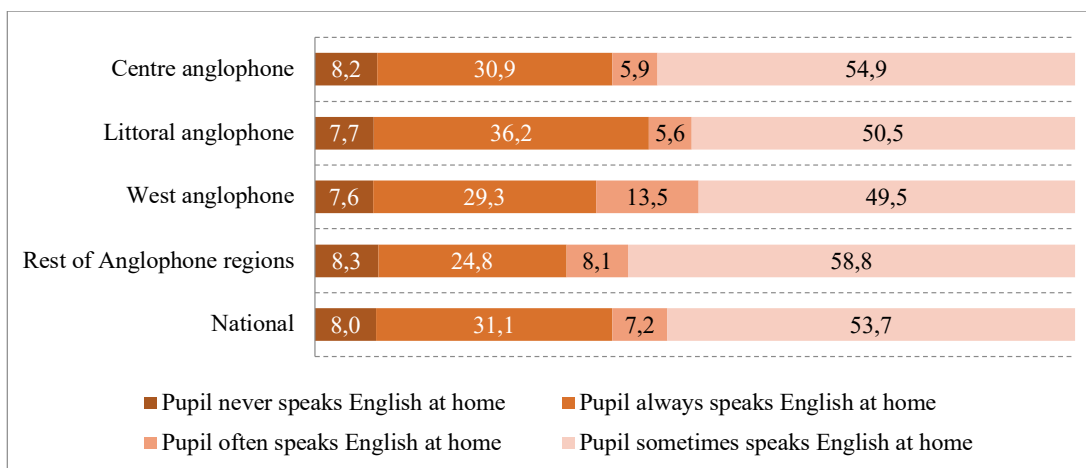
As at the beginning of schooling, the use of English at home greatly improves the performance of pupils in the Anglophone sub-system at the end of schooling. At the level of the different strata, the findings on the performance gaps in the Center and Littoral strata at the beginning of schooling are also confirmed at the end of schooling.

Graph 30: Pupils' performance in reading and mathematics according to the frequency with which they speak English at home at the end of schooling

5
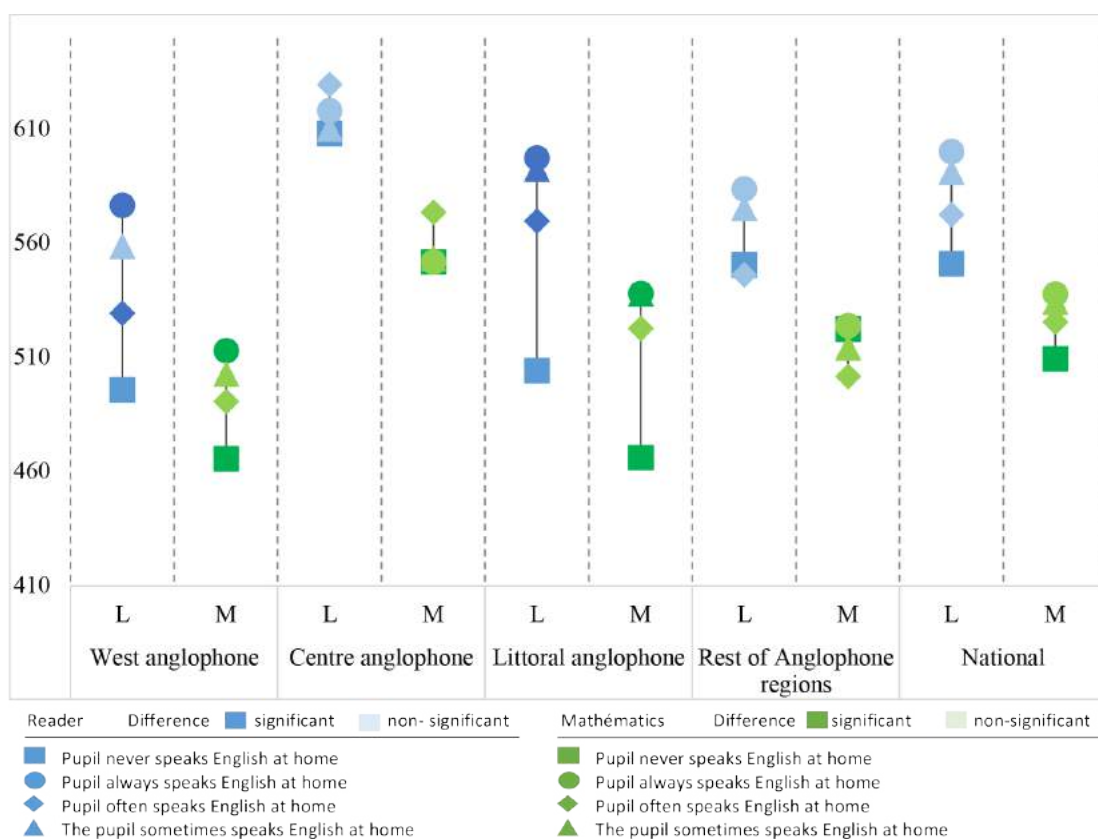
5.2.5. Variables for those who have a taste for reading and mathematics

Children who have a taste for reading and mathematics perform better than those who do not, in both subjects. On average, 14% of pupils do not like reading at the end of their schooling in the Anglophone subsystem of Cameroon. The highest proportion is found in the West strata where 29% of pupils do not like reading at the end of their schooling.

Graph 31: Distribution of pupils according to the number of pupils who like reading at the end of school
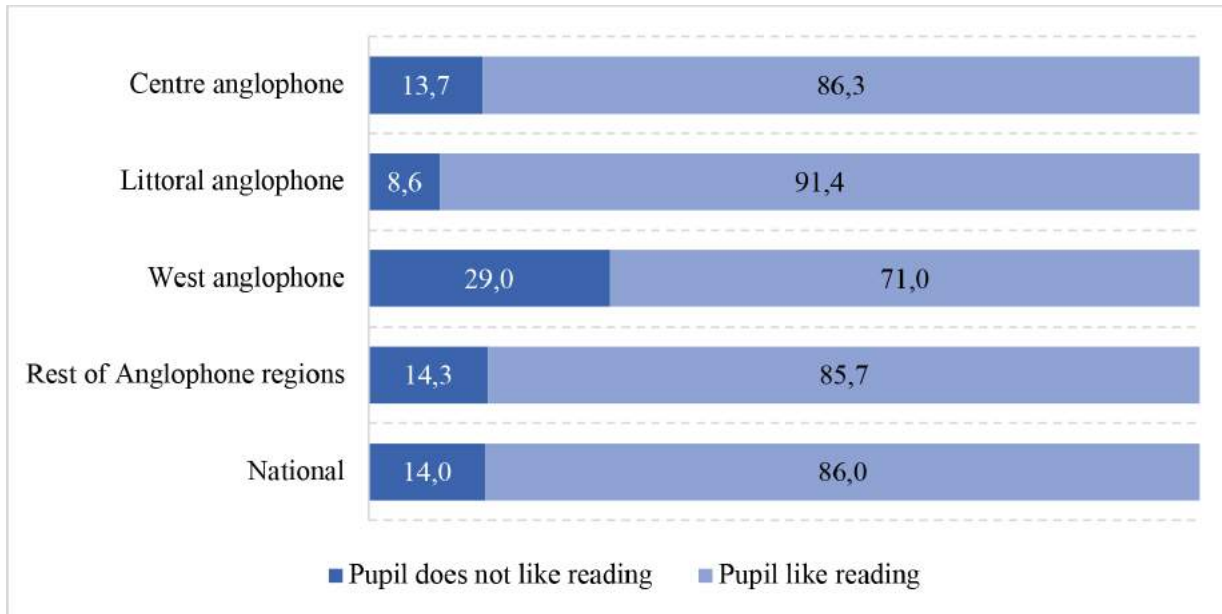
The gap in pupil performance in reading and mathematics according to whether pupils like or dislike reading at the end of schooling is very significant in the Anglophone sub-system. The trend at the national Anglophone level is also observed in the Western, Littoral and Rest of the Anglophone strata in reading. In mathematics by stratum, this difference is only significant in the Rest of Anglophone stratum.

Graph 32: Pupil performance in reading and mathematics according to the number of pupils who like reading at the end of school
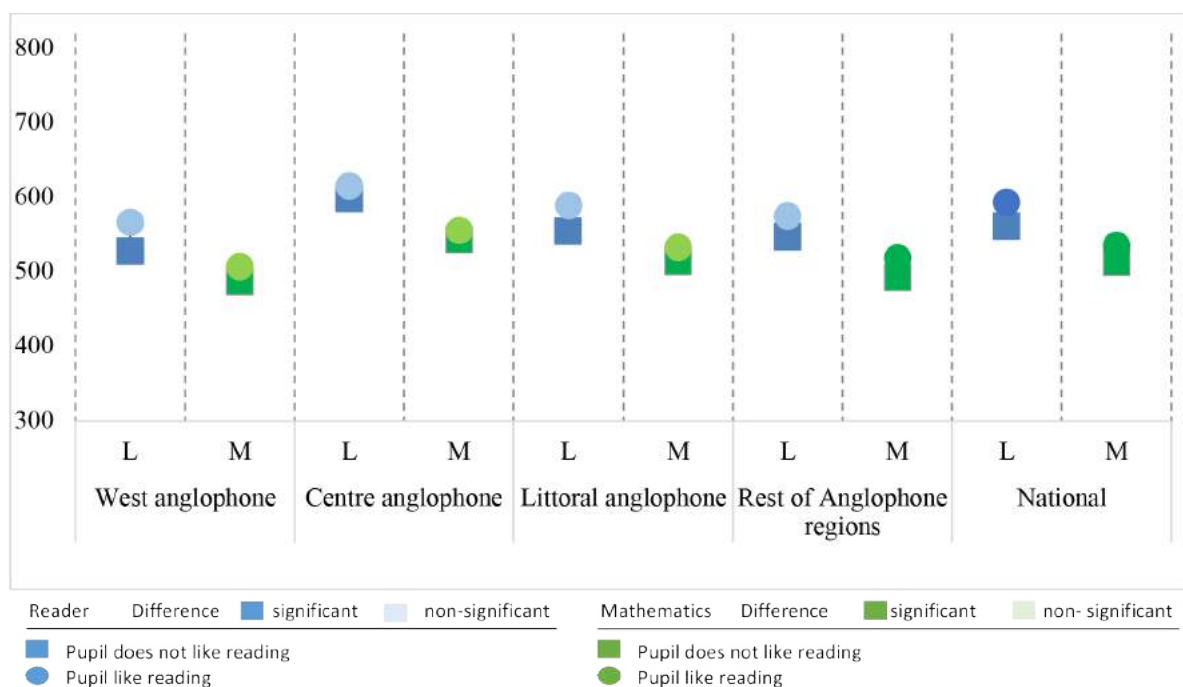
This is 18.8% of pupils who do not like mathematics at the end of schooling in the Anglophone sub-system. As was observed for reading, the western stratum (35%) still has a high proportion of pupils who do not like mathematics.

Graph 33: Distribution of pupils according to the number of pupils who like mathematics at the end of schooling
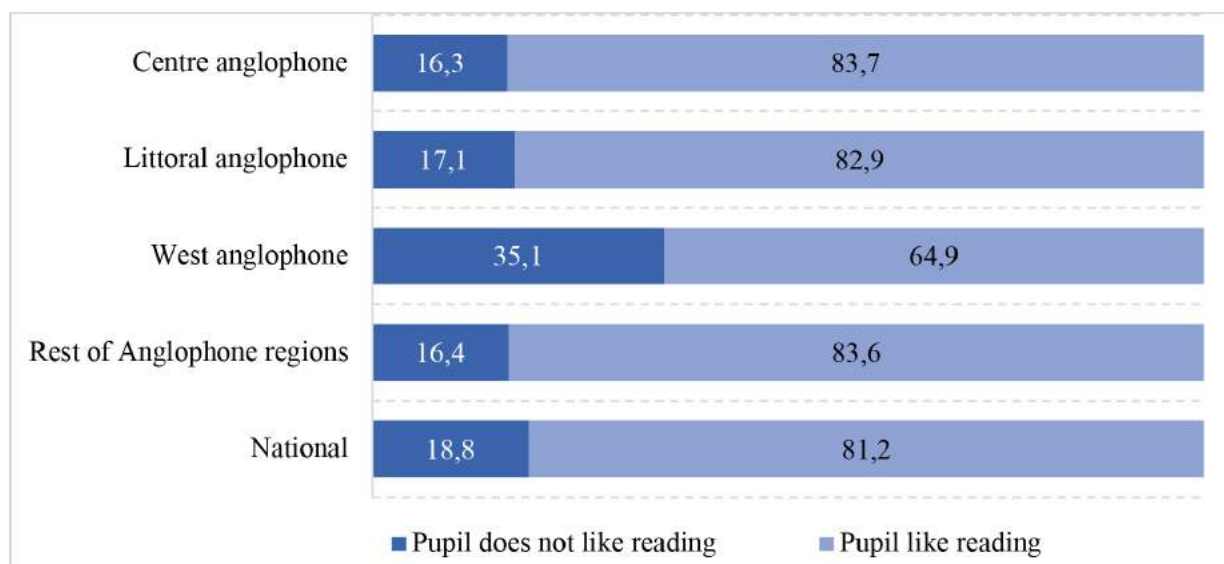
The gap in pupils' performance in reading and mathematics according to the number of pupils who like mathematics at the end of schooling is very significant for the whole of the Anglophone subsystem in Cameroon. The same situation is almost identical in all strata of the Anglophone sub-system, except for reading in the Rest of the Anglophone regions.

Graph 34: Pupils' performance in reading and mathematics according to the number of pupils who like mathematics at the end of school
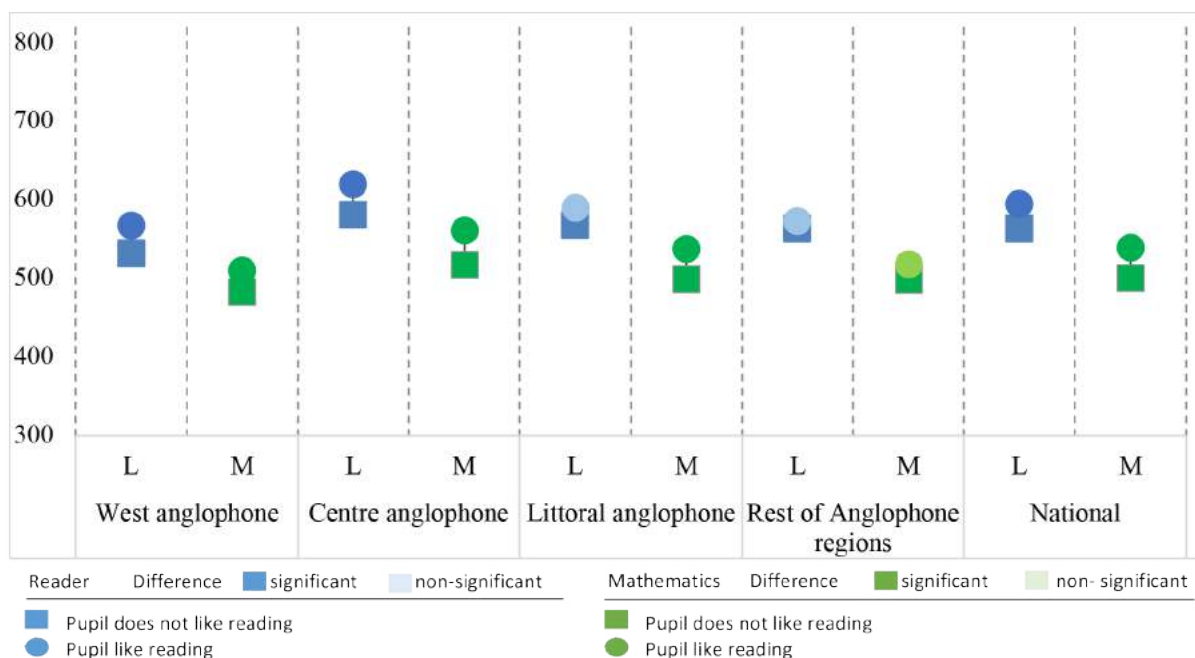
5.2.6. Parental presence and help with homework

Research has shown that parental involvement in the school life of their children has beneficial effects (Fan and Williams, 2010). The PASEC2019 evaluation examined whether school-leavers have a parental presence to help them with homework.

Thus, on average 64.3% of pupils assessed at the end of their schooling in the Anglophone sub-system live with both parents and 23.4% live with at least one parent. The highest proportion of children living with both parents is found in the Rest of Anglophone stratum (73.1%). The Western stratum has the highest proportion of children living with no parents (16.5%).

Graph 35: Distribution of school leavers by parental presence
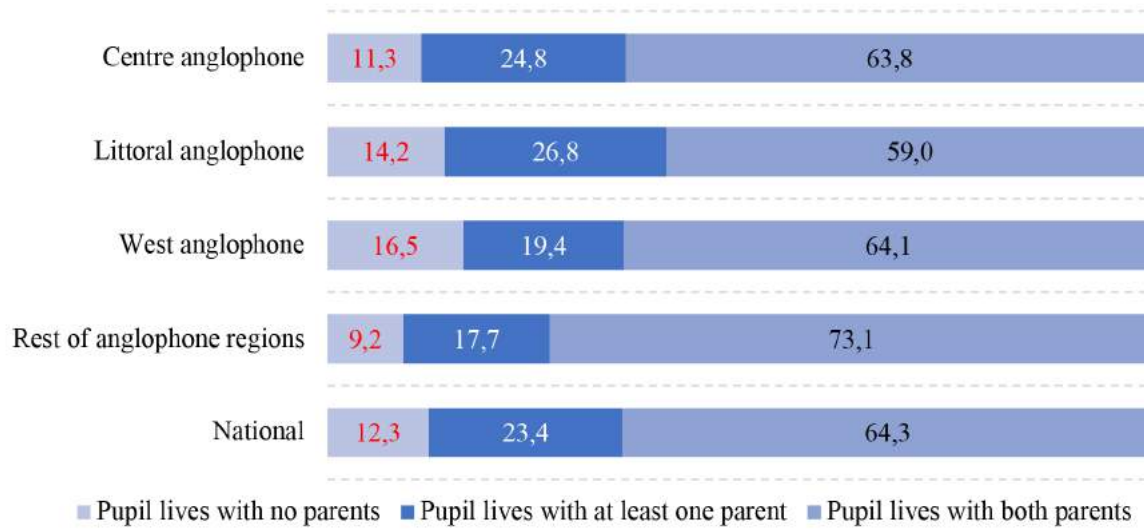
Surprisingly, parental presence does not improve pupils' performance at the end of school in either subject.

Graph 36: Pupil performance in reading and mathematics by parental presence
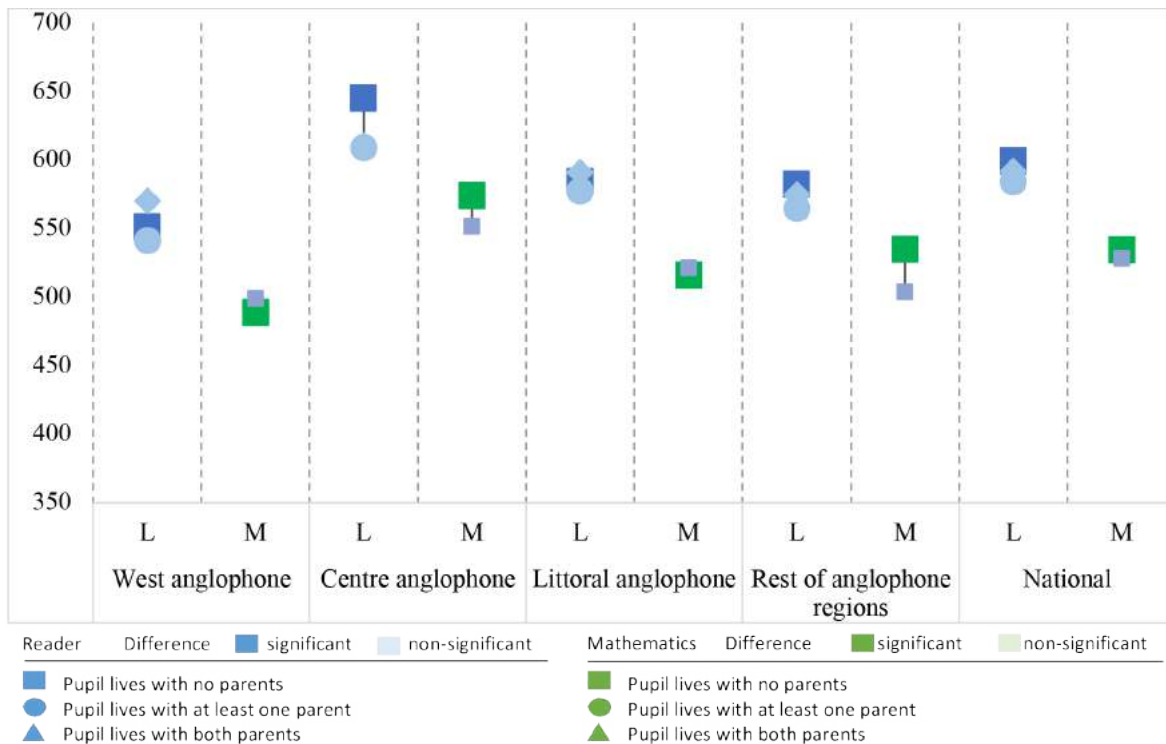
5.2.7. Parental literacy and book ownership at home

5.2.7.1.Parental literacy

Various studies have shown that there is a link between the parents' level of education and the child's success at school (Fan and Chen, 2001). A study conducted in Burkina Faso by the Educational Research Network for West and Central Africa (ERNWACA) in 2002 showed that out of 524 out-of-school pupils who were surveyed, only 21 (or 4%) lived with a parent or guardian whose education level was higher than primary school. Those whose parents had no education at all accounted for 53%. This study shows that the more literate a parent is, the more they contribute to the child's success in school and are able to keep the child in the education system.

The recent study by Adeniran et al. (2020) in Nigeria shows no significant difference in the literacy of children whose parents have incomplete primary education and those whose parents have complete primary education. However, the results show a significant variation between parents with primary education and parents with secondary or post-secondary education. Pupils whose parents have a post-secondary education are about 56% and 23% more likely to perform better on literacy and numeracy tests than pupils whose parents are not educated.

In Cameroon, on average 93.1% of school leavers in the Anglophone sub-system live with at least one literate parent. This percentage varies between 89.2% (Strate Ouest) and 94.5% (Center). However, if we consider children with two parents who are not literate, the Western stratum has the highest proportion (10.8%) (see graph 37).

Graph 37: Distribution of school leavers according to parents' literacy

In the Anglophone sub-system, it appears that, on average, the influence of both parents' literacy is not significant on
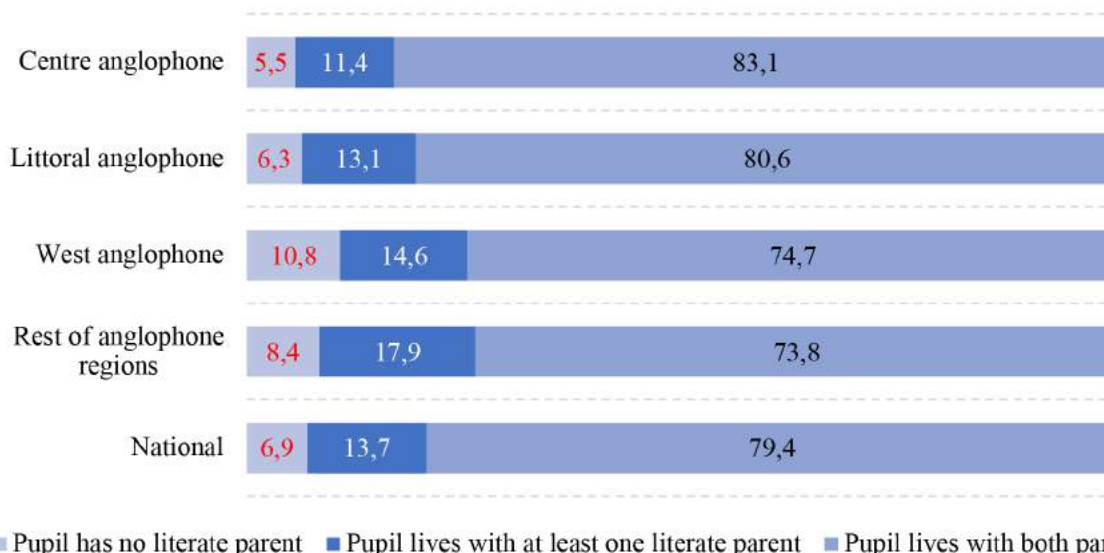
pupils' performance in reading and mathematics. Students who have at least one parent who can read have scores that are statistically identical to those with no parent who can read.

However, the results for the different strata of the Anglophone subsystem show the following two findings:

- two-parent literacy that positively influences student performance in reading and math in Rest of Anglophone regions, and only in reading in the West region;
- students with two parents who are not literate and who have higher statistical scores than those with at least one parent who is literate in the Center and Littoral region.

Graph 38: Pupil performance in reading and mathematics at the end of school by parent literacy
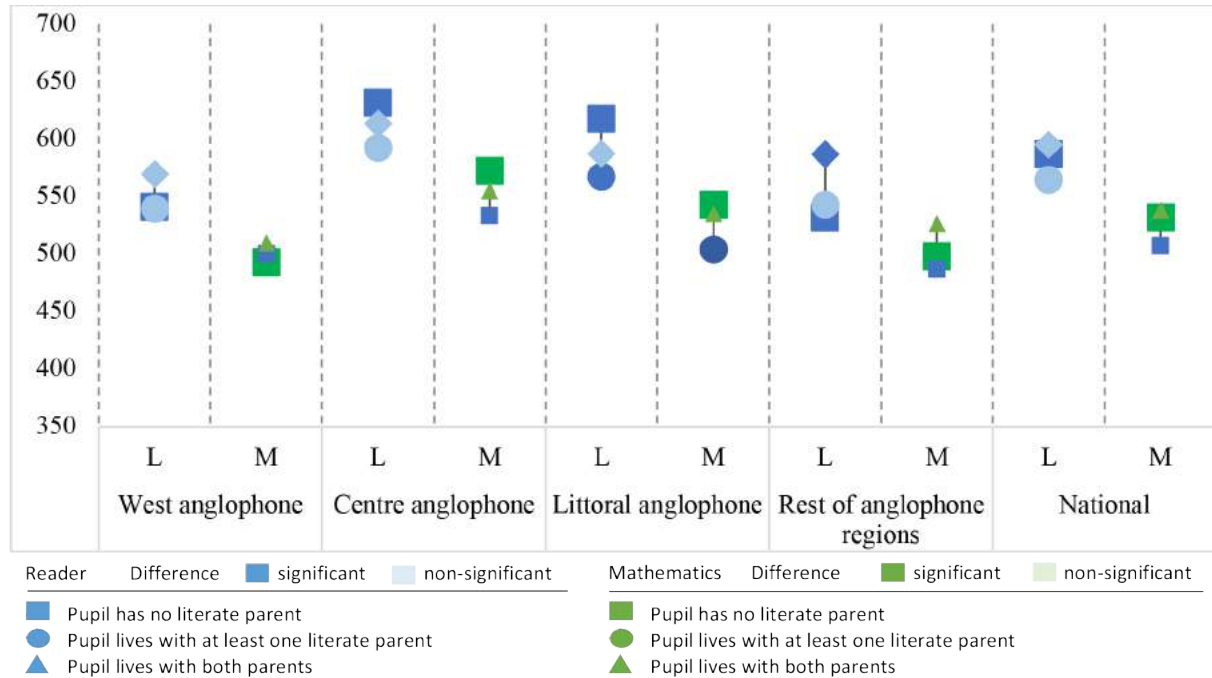
5.2.7.2. Book ownership at home

The possession of books at home greatly improves the performance of pupils in both subjects at the beginning and end of schooling.

Only one pupil in two has books at home at the beginning of schooling in the Anglophone sub-system in Cameroon. The lowest proportions are observed in the Western strata (39.8%) and the Rest of Anglophone (41.6%). This result shows a very alarming situation in the Western Anglophone stratum in terms of possession of books at home. The Littoral and Center strata are in the lead with 62.3% and 59.4% respectively.

Graph 39: Distribution of pupils at the beginning of schooling according to the availability of books at home
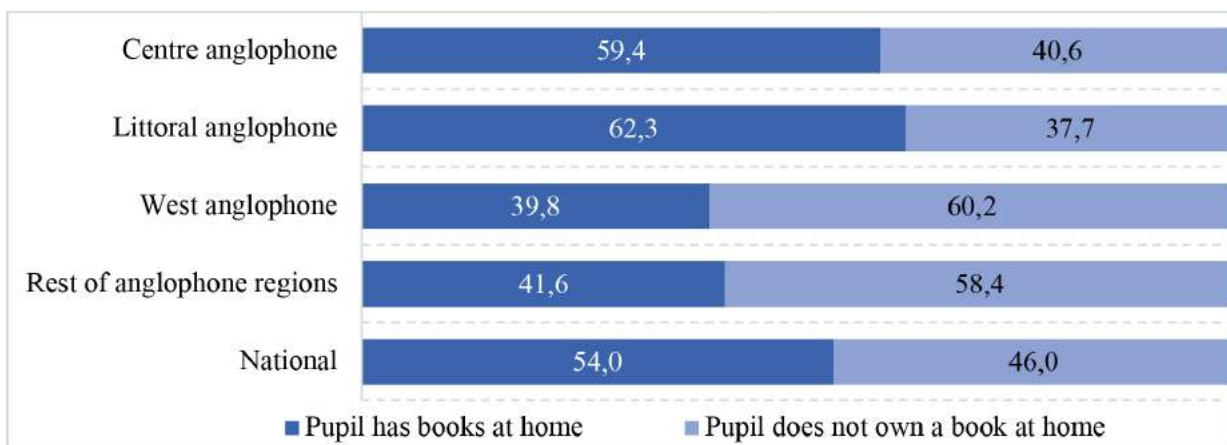
The average performance at the beginning of schooling in reading and mathematics is significantly higher among pupils with books at home at the national level, as it is in the majority of strata, except in the Western and Central strata.

Graph 40: Performance of pupils in reading and mathematics at the beginning of schooling by schooling goal according to the availability of books at home.
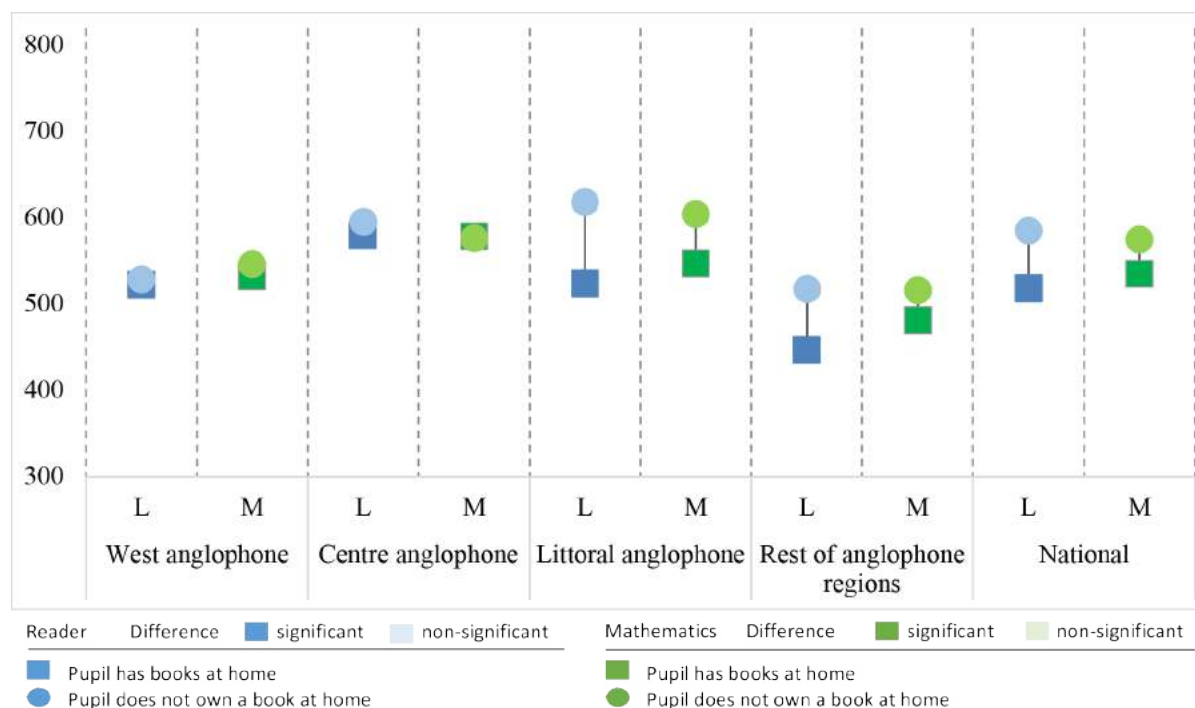
At the end of schooling, in the English-speaking sub-system, an average of one child in three does not have books at home. This trend can also be observed in the different Anglophone strata.

Graph 41: Distribution of school-leavers according to availability of books at home
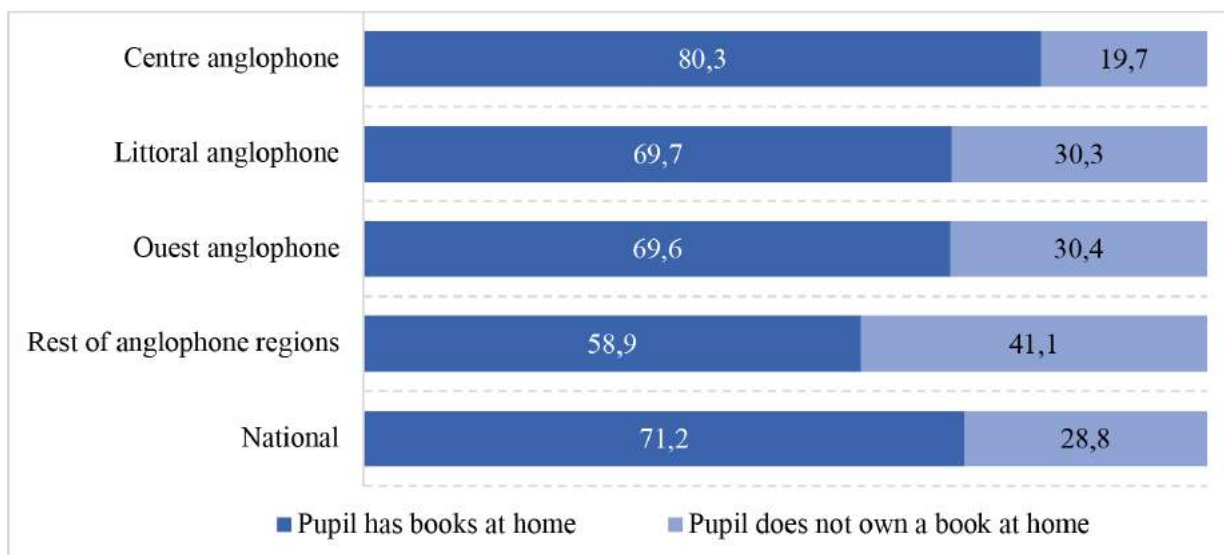
 In terms of pupil performance, the same observations made at the beginning of schooling also emerge at the end. At the level of strata, all strata follow the national Anglophone trend, except in the Center and the Rest of the Anglophone Region.

Graph 42: Pupils' performance in reading and mathematics at the end of schooling according to the availability of books at home
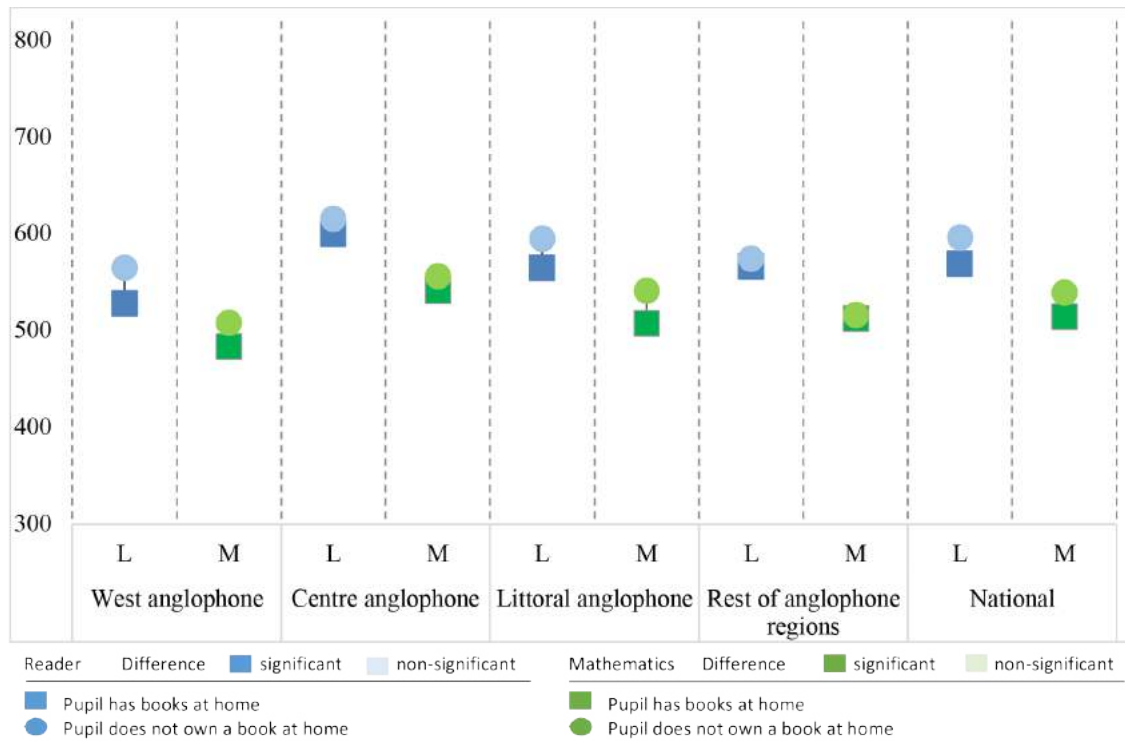
5.2.8. Pupils' nutrition

Nutrition is an important factor in school success. To ensure nutrition for learning and well-being, school feeding programs have been established in many developing countries. Empirical evidence shows that school feeding has been able to improve pupils' academic performance. Diagne et al (2013), for example, evaluated the influence of school canteens on pupils' performance in mathematics and French in Senegal. They find that school canteen programs lead to a significant improvement in school performance. In Cameroon, school canteen programs have significantly increased the enrolment of girls, thus ensuring their retention in school, particularly in the Far North region.

In this section, we will try to look at the performance of pupils according to the availability of a canteen, whether they eat at home before coming to school and whether they are hungry at school.

5.2.8.1. School canteen available for pupils

On average, only 27.5% of pupils have a canteen at school at the beginning of their schooling in the Anglophone subsystem. The highest proportion is found in the Central stratum (50.6%) and the lowest in the Western stratum. It is clear that these percentages generally reflect the low existence of school canteen programs in schools and the presence or absence of a real school feeding policy at national level.

Graph 43: Distribution of pupils according to the availability of a school canteen at the beginning of their schooling
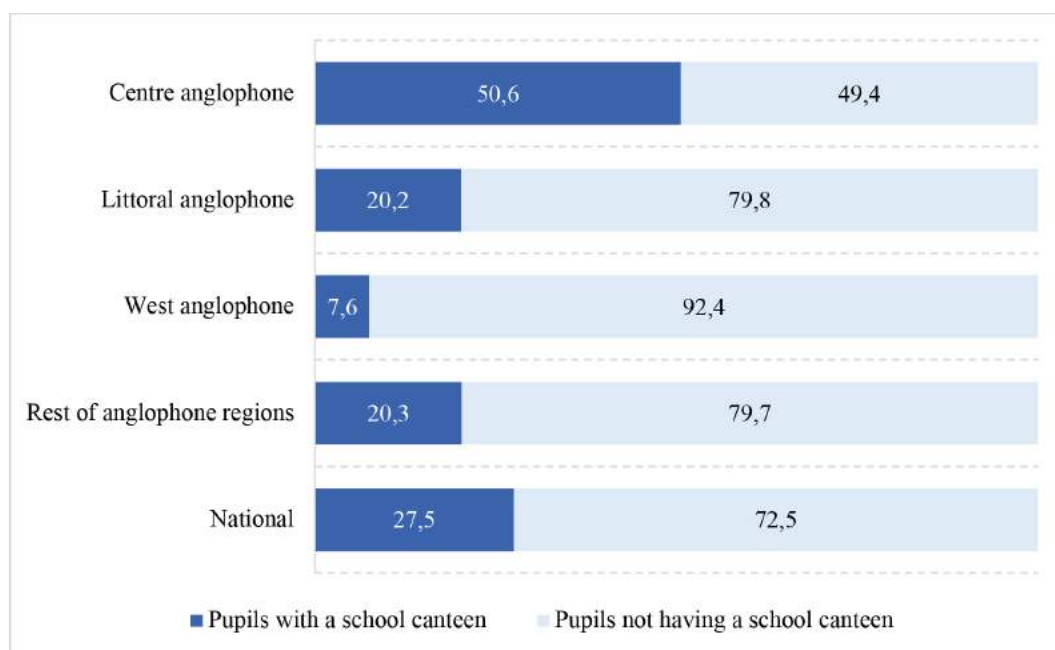
At the beginning of schooling in the Anglophone subsystem, the performance gap between pupils without a school canteen and those with one is significant in favour of the latter in both subjects. According to the strata, the performance gap is also significant between pupils with and without a school canteen in all strata except the West.

Graph 44: Pupils' performance in reading and mathematics at the beginning of schooling according to the availability of a school canteen
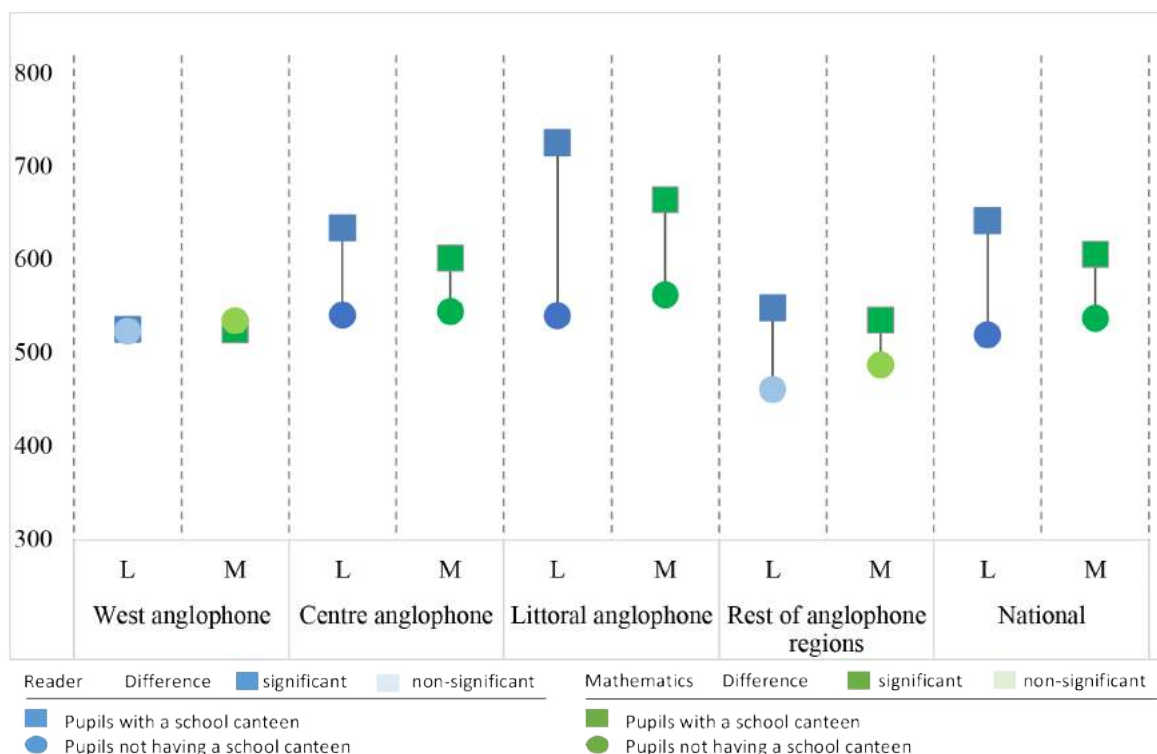
At the end of the school year, the trends observed at the beginning of the school year in terms of the proportion of pupils who have access to a school canteen at school also emerge, despite a clear improvement in the proportions (Graph 45).

Graph 45: Distribution of pupils by availability of a school canteen at the end of schooling
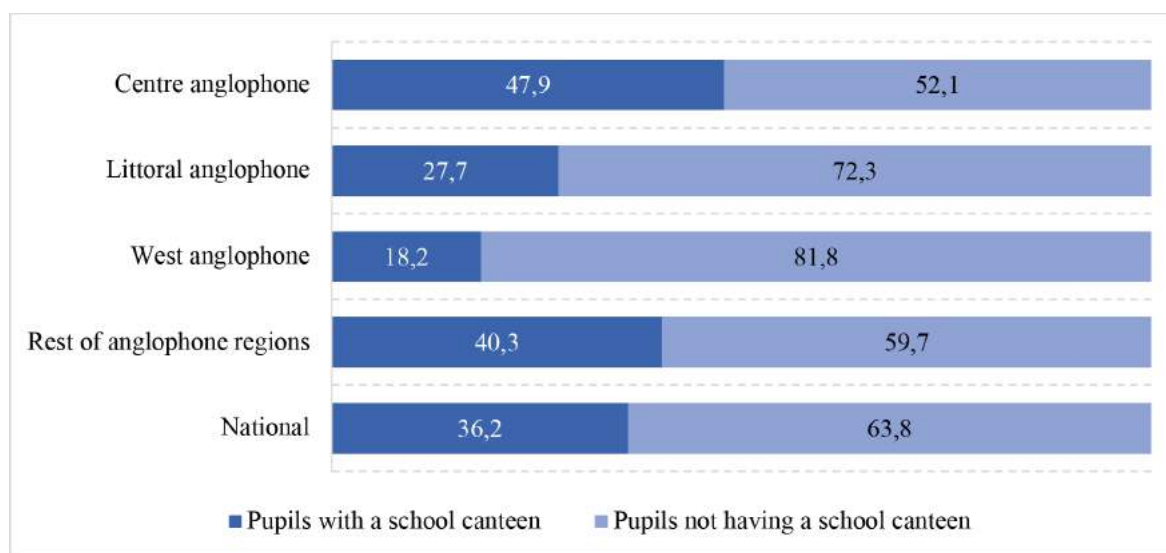
As observed at the beginning of schooling, the performance gap is also significant at the end of schooling between pupils without a school canteen and those with one, in favour of the latter. The national Anglophone trend is also observed in all strata.

Graph 46: Pupils' performance in reading and mathematics at the end of schooling by availability of a school canteen at the end of schooling
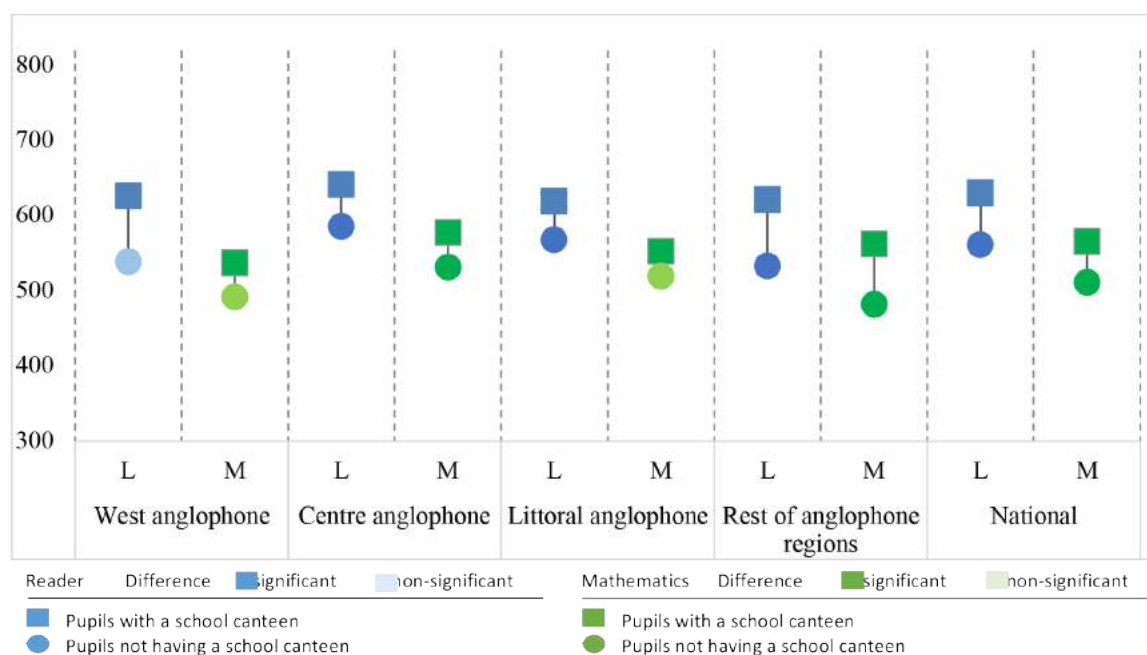
5.2.8.2. Hunger and learning in the classroom

On average in the Anglophone subsystem, at the end of schooling, 15% of pupils were never hungry in class, while 7% were sometimes hungry and about 80% were often or always hungry in class. The highest percentage for the latter group of those who are often or always hungry in class is found in the middle stratum (80.7%).

Graph 47: Distribution of pupils by Hunger in class at the end of school
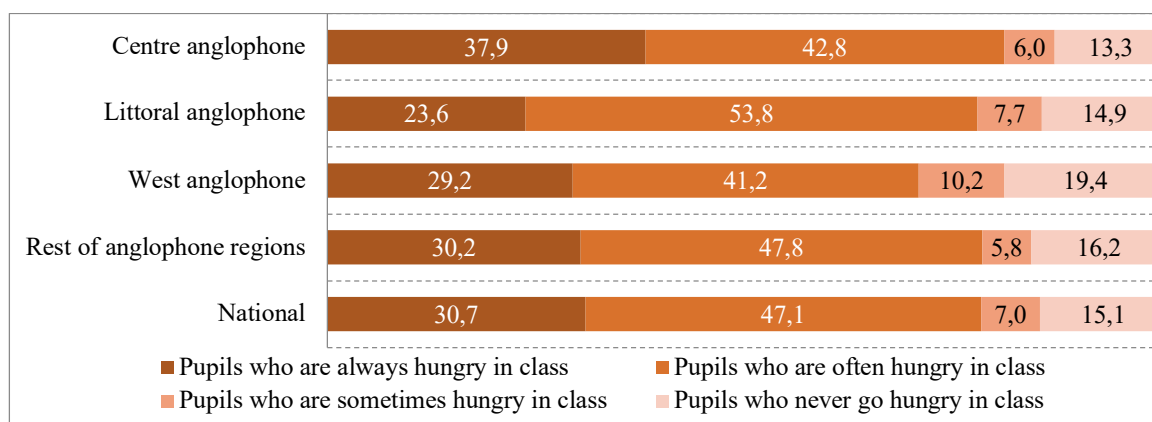
At the end of schooling in the Anglophone subsystem, the average differences in reading performance between pupils who are often or always hungry at school and those who are never hungry are insignificant in both subjects. In other words, the fact that a pupil is hungry in class does not influence his/her performance.

Graph 48: Pupils' performance in reading and mathematics at the end of schooling according to being hungry in class at the end of schooling
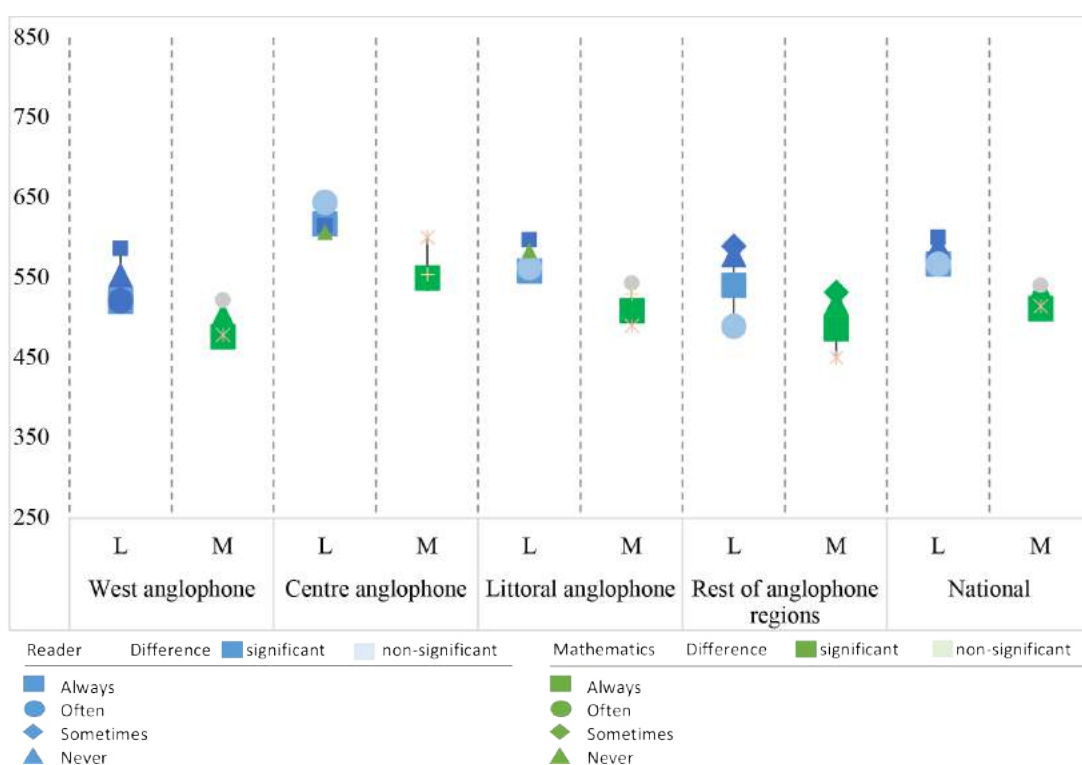
5.2.9. Extra-curricular work

The participation of pupils in certain extra-curricular activities during the school year is likely to degrade their academic performance.

5.2.9.1. Pupils' participation in agricultural work

More than half of the pupils (56.3%) at the end of their schooling in the Anglophone sub-system in Cameroon participate in agricultural work for all the countries. This proportion is higher in the West (72.2%). Overall, this proportion is above 50% in all Anglophone strata of the country.

Graph 49: Distribution of school leavers according to participation in agricultural work
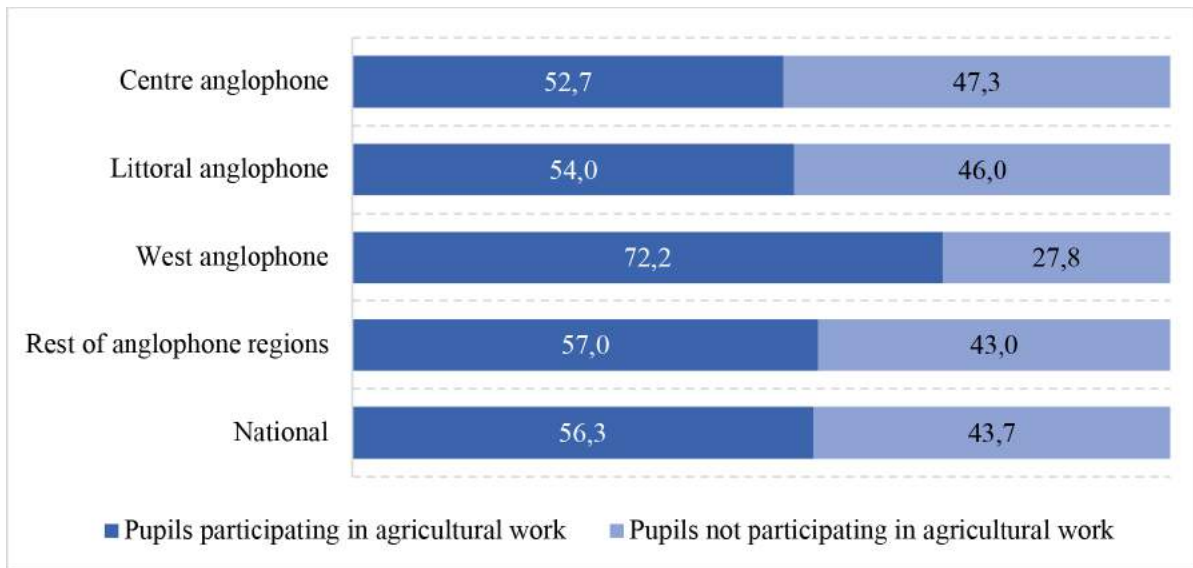
The average performance gap in reading and mathematics for the Cameroonian Anglophone subsystem between pupils who participate in agricultural work and those who never participate is significant in favour of pupils who never participate in both subjects. However, this difference is not significant in the Littoral and Center.

Graph 50: Performance of school-leavers in reading and mathematics according to their participation in agricultural work
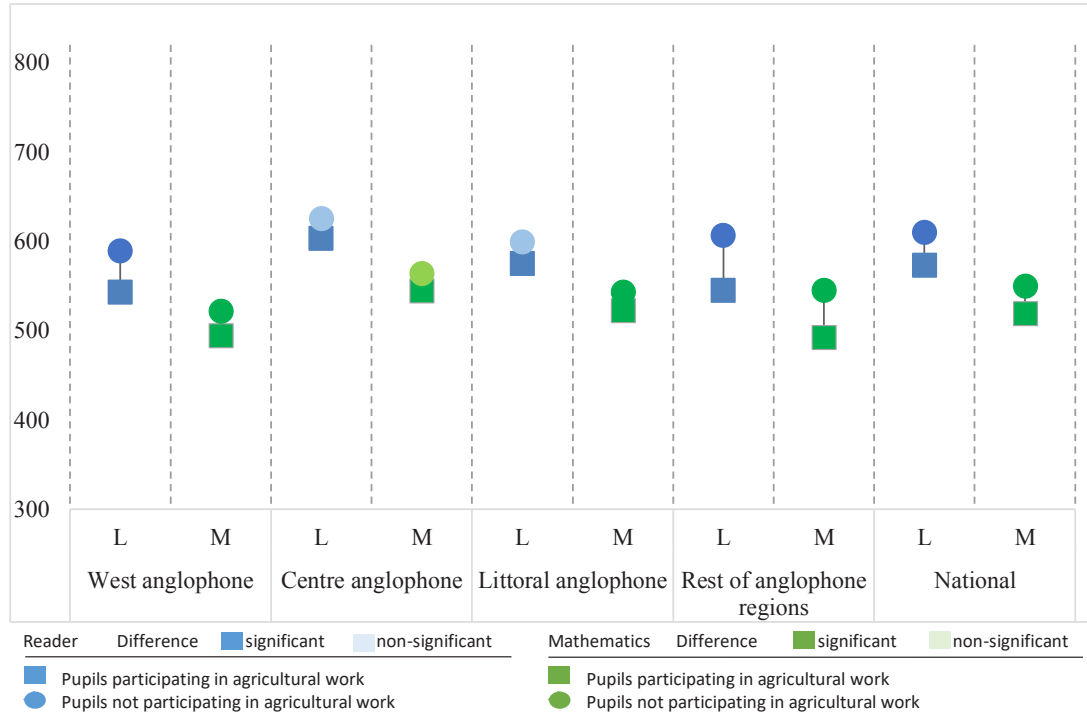
5.2.9.2. Participation of pupils in petty trade

Overall, an average of 44% of pupils in the Anglophone sub-system at the end of their schooling participate in small-scale trade. This proportion remains higher in the West (51.3%).

Graph 51: Distribution of school leavers according to their participation in petty trade
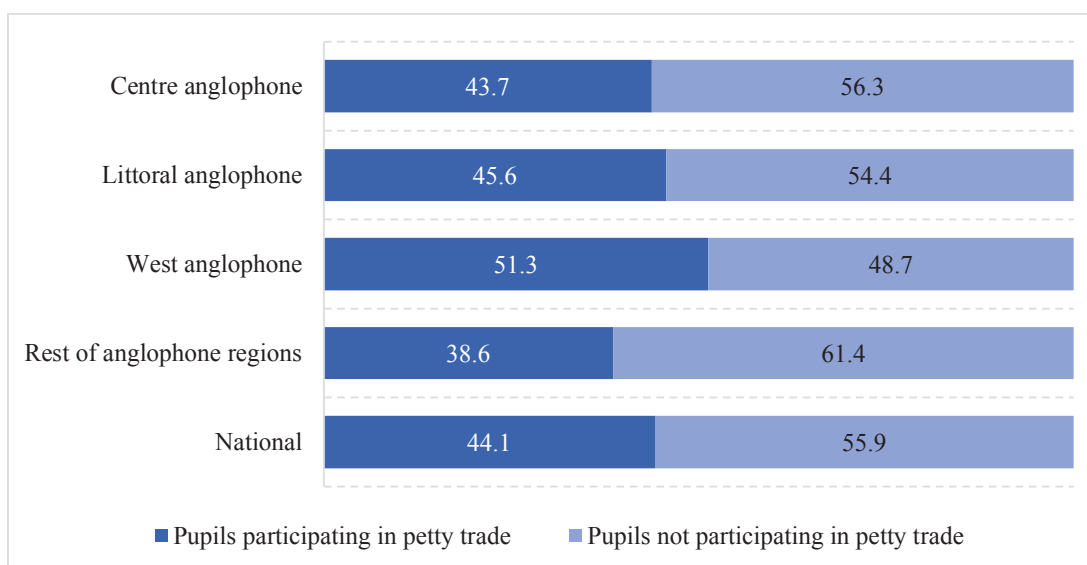
 At the end of schooling, the average gap in performance in the Cameroonian Anglophone sub-system between pupils who participate in petty trade and those who never participate is significant in favour of pupils who never participate in both subjects. At the level of the different strata of the said sub-system, this gap is significant every-where in favour of those who never participate, except in the Center where it is not significant.

Graph 52: Performance of school-leavers in reading and mathematics according to their participation in petty trade
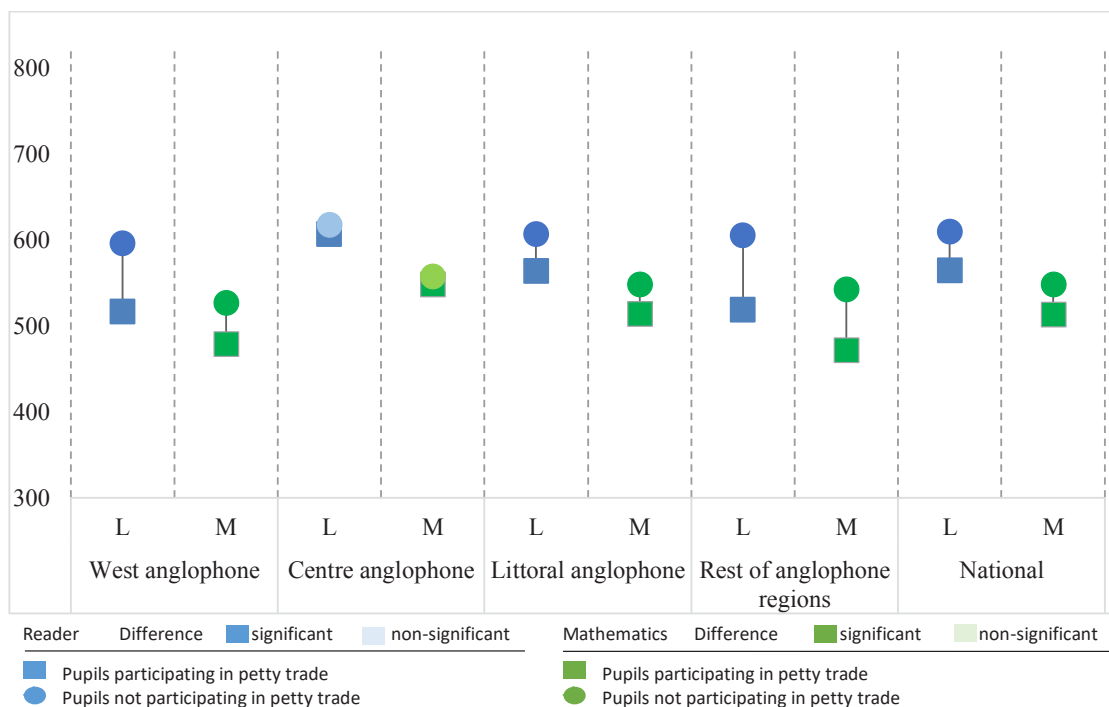
5.2.9.3. Participation of pupils in domestic work

Domestic work is an activity practised by most Cameroonian pupils. Indeed, 90.5% of school leavers in the Anglo-phone subsystem engage in domestic activities during the school year. The proportion of pupils who do domestic work is higher in the Littoral (91.1%) and the Center (91.8%).

Graph 53: Distribution of school-leavers according to their participation in domestic work
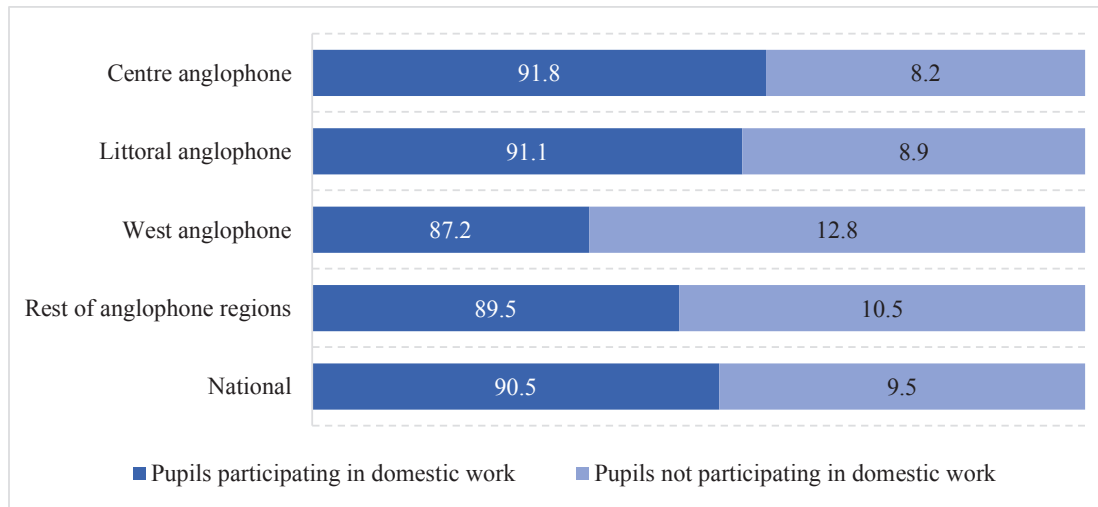
At the national Anglophone level, the average score in reading and mathematics of school-leavers who participate in homework is not significant compared to those who never participate. At the level of the different Anglophone strata, the performance gap between pupils who participate in homework and those who never participate in homework is significant only in the Rest of Anglophone stratum in favour of those who never participate in homework.

Graph 54: Performance of school-leavers in reading and mathematics according to their participation in homework
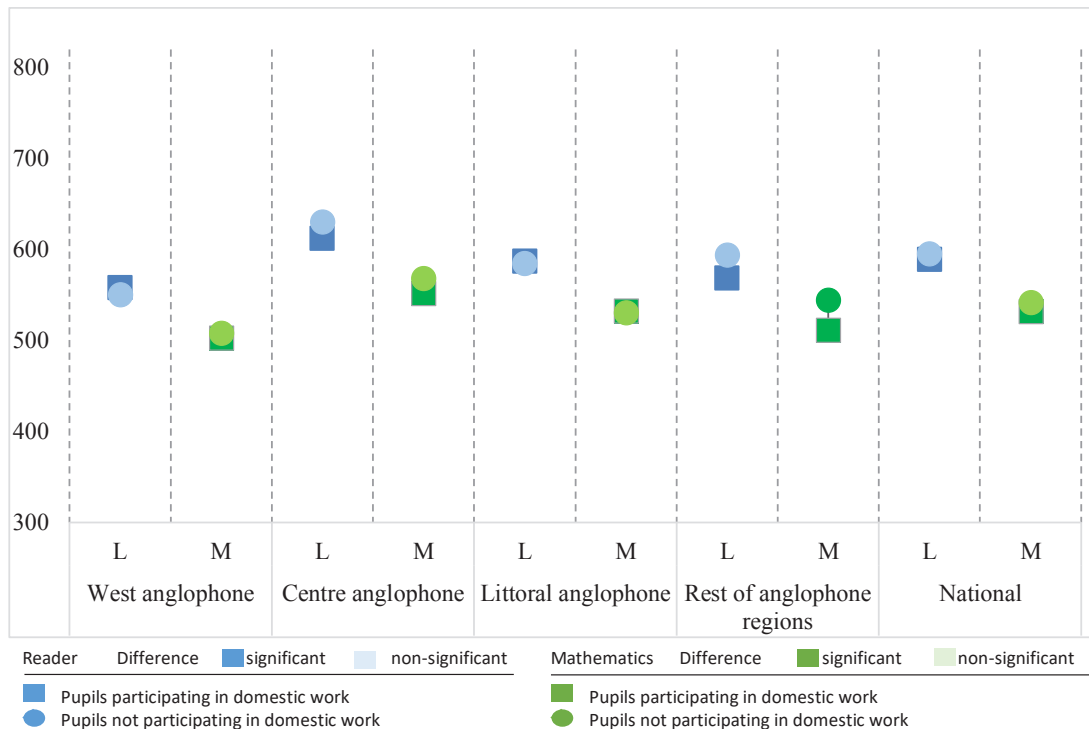
5.2.9.4. Participation of pupils in manual work

On average, 44.1% of school leavers in the Anglophone subsystem of Cameroon participate in manual work. It is only higher in the West (62.0%).

Graph 55: Distribution of school leavers according to participation in manual work
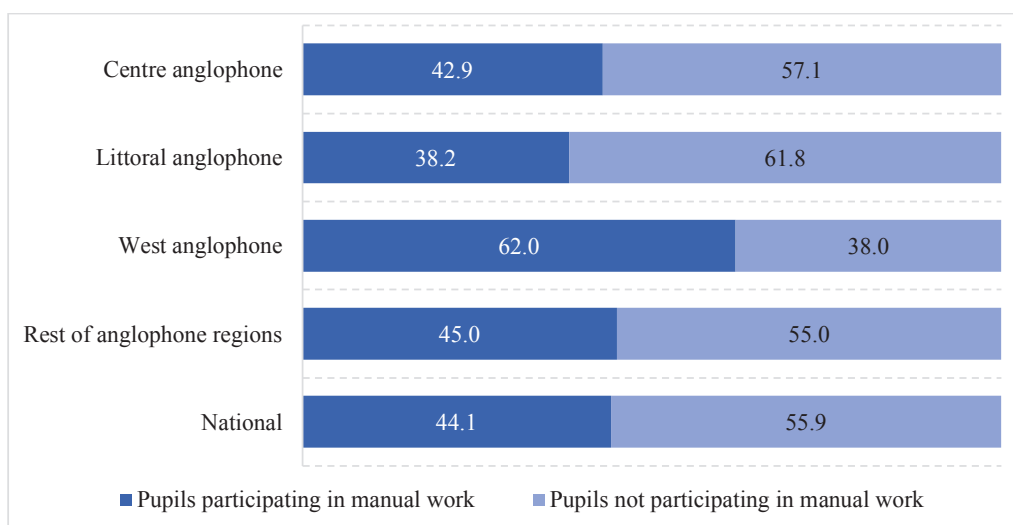
The average gap in reading and mathematics scores for the whole of the Anglophone sub-system between pupils who participate in manual work and those who never participate is significant in favour of the latter. This gap is also significant in all the Anglophone strata of Cameroon except the Littoral.

Graph 56: Performance of school-leavers in reading and mathematics according to their participation in manual work
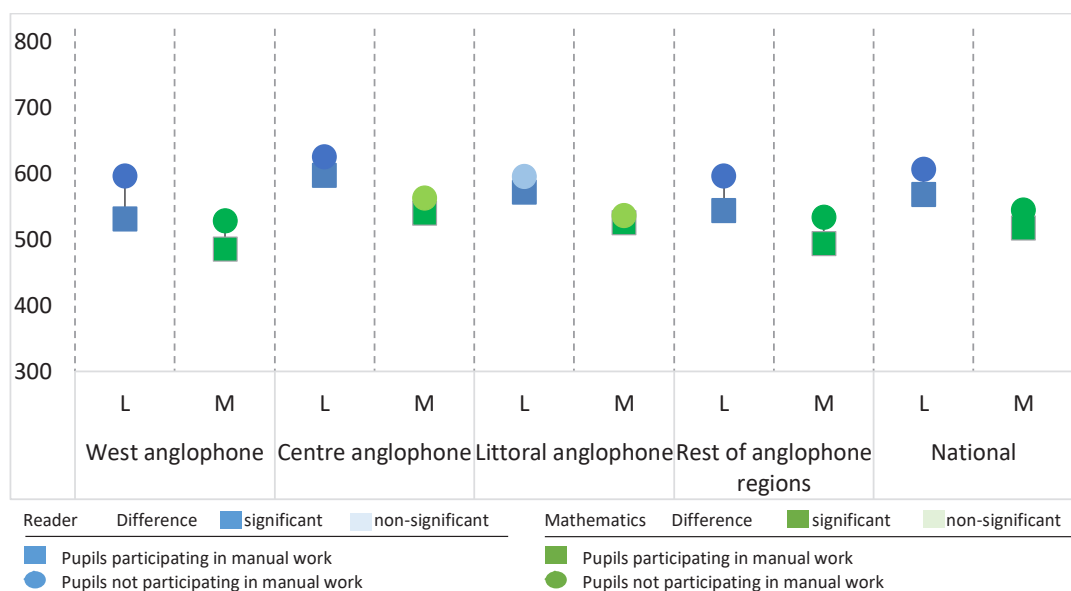
5.2.10. Pupil's educational background

5.2.10.1. Pre-schooling and type of pre-schooling

Pre-school is an important factor in educational success. It is in this sense that the 2030 Agenda devotes an entire goal "SDG 4.2: Ensure that by 2030 all girls and boys have access to quality early childhood development and care and early childhood education that prepares them for primary school". However, access to pre-primary education remains low in most sub-Saharan African countries in general and in Cameroon in particular.

Despite the significant increase in the number of children enrolled in pre-school in Cameroon, due to public efforts, the promotion of the private sector and the establishment of community pre-schools, only two out of five children are actually enrolled in pre-school, given the potential demand for children of pre-school age.

The distribution of pupils according to kindergarten attendance indicates a proportion of pupils who attended kindergarten of 78.2% at the beginning of schooling and 78.5% at the end of schooling in the Cameroonian Anglophone sub-system. However, at the level of the strata, many disparities are observed. The proportion of pupils attending nursery school varies between 50.5% (Rest of Anglophone) and 90.6% (Littoral) at the beginning of schooling and between 66.4% (West) and 87.1% (Center) at the end. It is interesting to note that the Far North, North, Adamaoua and East strata, which form the Priority Education Zone, have the lowest percentages, below the Francophone national average

Graph 57: Percentage of early school leavers by attendance at kindergarten or pre-schoo

Graph 58: Percentage of school leavers by attendance at kindergarten or pre-school

	Graph 57	Graph 58
West anglophone	70.6	66.4
Centre anglophone	85.4	87.1
Littoral anglophone	90.6	76.7
Rest of Anglophone regions	50.5	73.5
Nationale	78.2	78.5
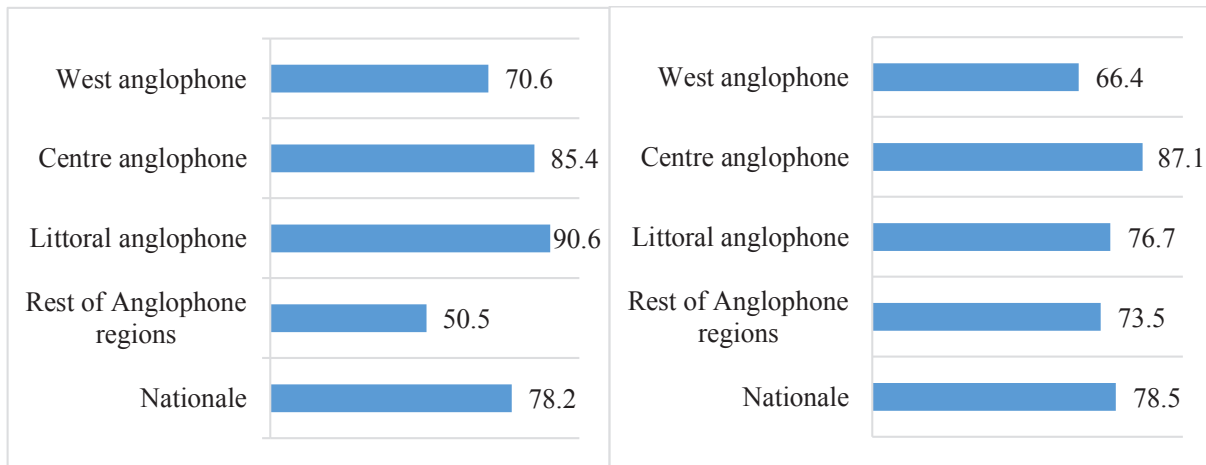
At the beginning of schooling, pupils who have attended kindergarten or pre-school perform better than those who have not in reading and mathematics. According to the different Anglophone strata, the average level of pupils who attended kindergarten in language and mathematics is significantly higher than that of pupils who did not attend kindergarten in all but the West in reading.

Graph 59: Performance of pupils at the beginning of schooling according to whether they attended kindergarten or pre-school in reading and mathematics
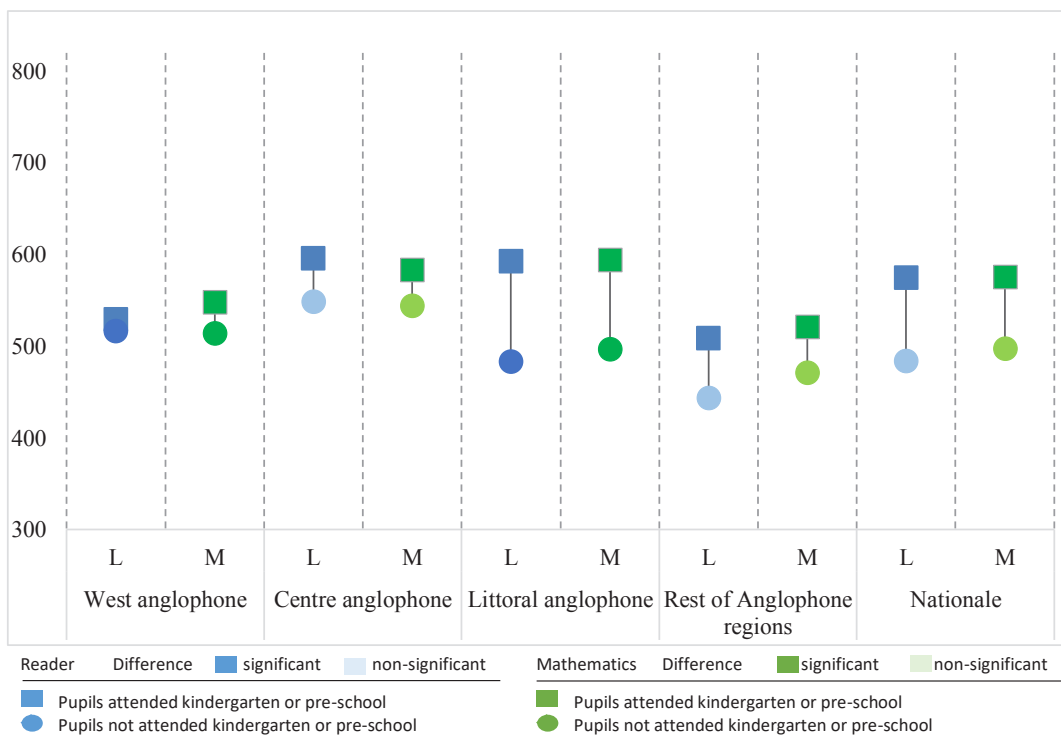
At the end of schooling, the same observation can be made as at the beginning of schooling. This shows that pre-school has a positive influence on school results in reading and mathematics.

Graph 60: Performance of pupils at the end of schooling according to attendance at kindergarten or pre-school in reading and mathematics
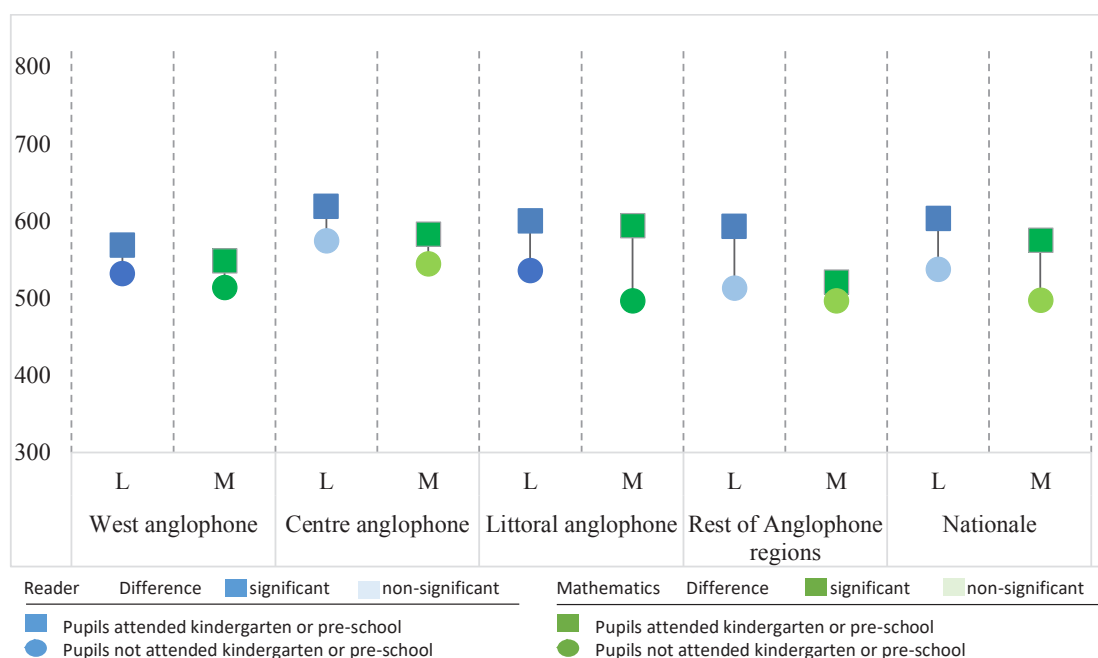
5.2.10.2. Repetition

Repetition remains an important concern for the sectoral policies of French-speaking Sub-Saharan African countries. Indeed, it is a pedagogical practice used to help pupils with learning difficulties to catch up academically. The scientific literature is almost unanimous in underlining the ineffectiveness of repetition and its lasting and negative impact on the educational trajectory of pupils (Basa, 2019, Draelants, 2008, Draelants, 2019, Sunny et al., 2017).

In Cameroon, one of the main options of the 2013-2020 Education and Training sectoral strategy is to significantly reduce school wastage by lowering the average repetition rate in primary education. The repetition rate has dropped slightly in the Anglophone sub-system, from 6% in 2010 to 4.15% in 2019 (MINEDUB, Rapport d'analyse des données de la carte scolaire, 2018-2019), despite the important measures put in place at national level to support pupils in difficulty so that they can continue their education without repeating a year.

At the beginning of schooling in the Anglophone subsystem, an average of 13.3% of pupils repeated the second year of primary school. The highest proportions are observed in the Western stratum (17.1%) and the Littoral (14.5%).

Graph 61: Percentage of early school leavers who have repeated the second year of primary school
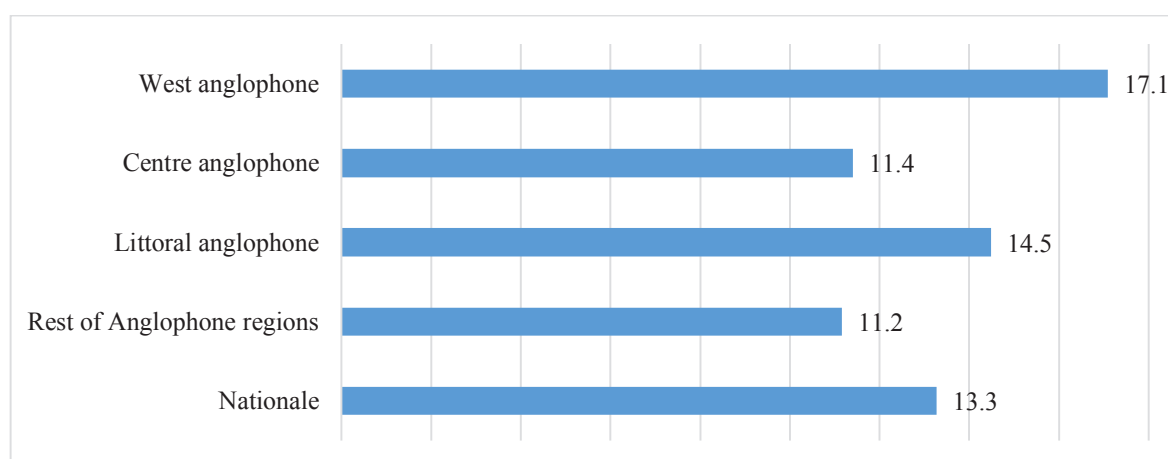
At the end of schooling, on average, one pupil out of three has already repeated at least once in the Anglophone sub-system in Cameroon. This proportion is particularly high in the Western stratum (39.8%), with a proportion of about 5.7% of pupils who have repeated two or more times. The center is the stratum with the highest proportion of children at the end of the primary cycle who have never repeated a year (80.1%).

Graph 62: Distribution of school-leavers according to the number of times they have repeated a year in the Anglophone primary sector
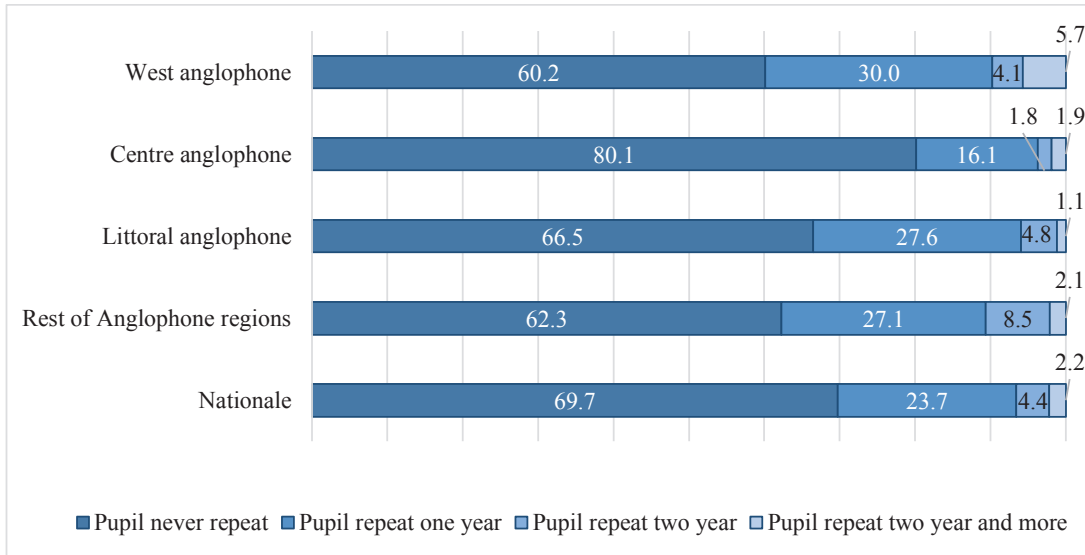
Overall, the average gap in language and mathematics performance between pupils who have repeated class 2 and those who have not repeated the grade is not significant at the beginning of Anglophone primary education in Cameroon in favour of those who have never repeated. This difference is also significant in favour of children who have never repeated a grade in the Littoral, Center and West strata.

Graph 63: Performance of pupils at the beginning of primary school in language and mathematics who have repeated the second year of primary school or not
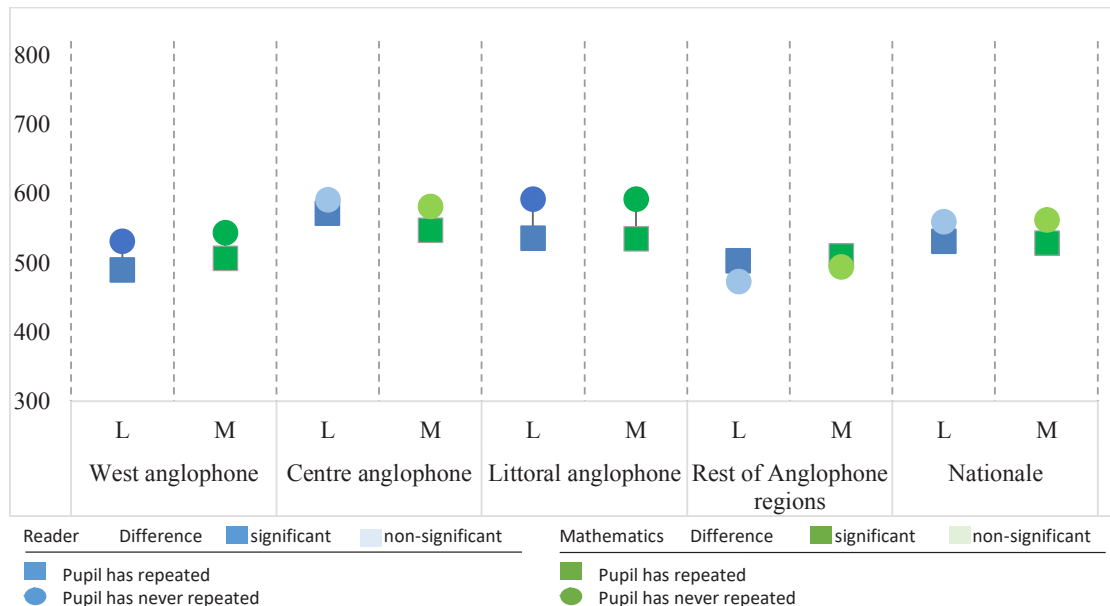
At the end of schooling, the performance gap between pupils who have never repeated a year and those who have repeated at least once is significant in favour of those who have never repeated a year. It can be seen that the more a pupil repeats, least he or she performs in reading and mathematics. This observation is also observed in all of the country's Anglophone strata.

Graph 64: Pupils' performance in reading and mathematics at the end of schooling according to the number of repetitions
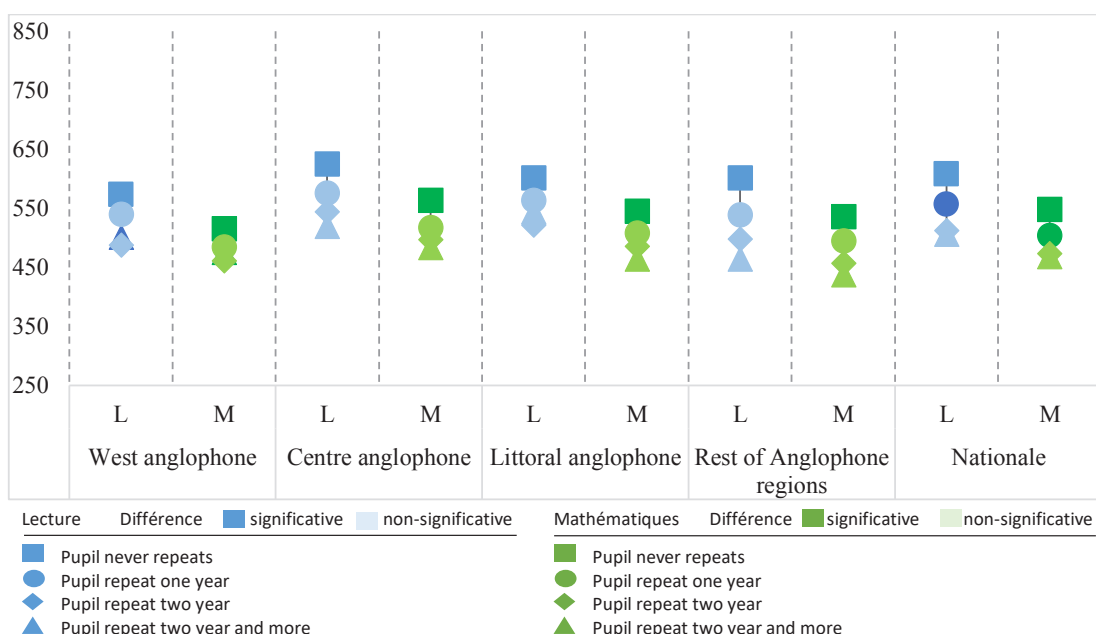
These analyses show that repetition, as practised, does not allow pupils to achieve results at the end of primary school equivalent to those of their non-repeating peers. These findings have already been identified in previous PASEC evaluations (2012 and 2014). It is important to reflect on credible pedagogical practices with relevant impacts on the reduction of repetition.

5.2.11. School locality and school performance

In this analysis, the term 'school locality' refers to the area (rural or urban) where the school is located. The urban area includes cities and city suburbs, while the rural area includes large and small villages.

In the Anglophone sub-system in Cameroon, the average proportion of pupils in urban areas is 74.2% at the beginning of schooling and 75.3% at the end. However, this proportion varies enormously according to the different Anglophone strata of the country. It is higher in the Central stratum (92.7%) at the beginning of schooling and (92.0%) at the end. The percentage of pupils whose school is located in an urban area is lowest in the Rest of the Anglophone stratum at the beginning of schooling and in the Western stratum at the end of schooling.

Graph 65: Percentage of pupils at the beginning of their schooling attending a school in an urban area
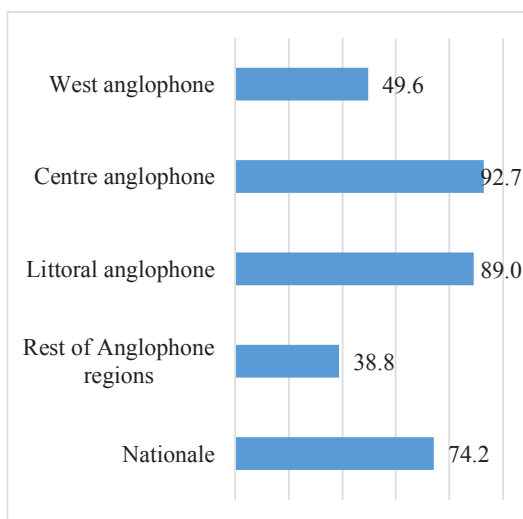
Graph 66: Percentage of pupils at the end of their schooling attending a school in an urban area
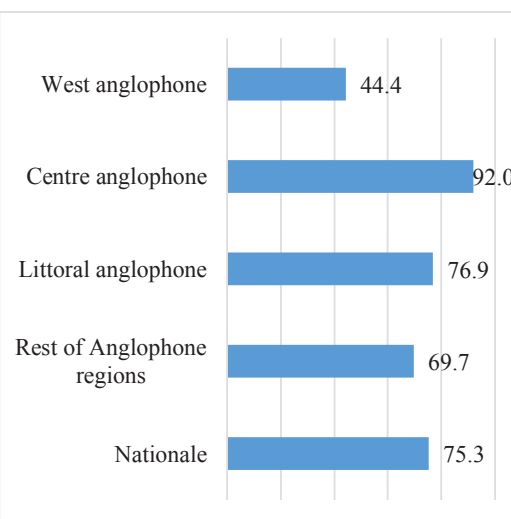
The gap in pupil performance according to school location shows that pupils whose schools are located in urban areas perform better than pupils whose schools are located in rural areas in the Anglophone sub-system in Cameroon at the beginning of schooling, as shown in the graph below. At the level of the different strata, the same trends are observed as at the national Anglophone level.

Graph 67: Performance of pupils at the beginning of schooling in reading and mathematics according to the location of the school
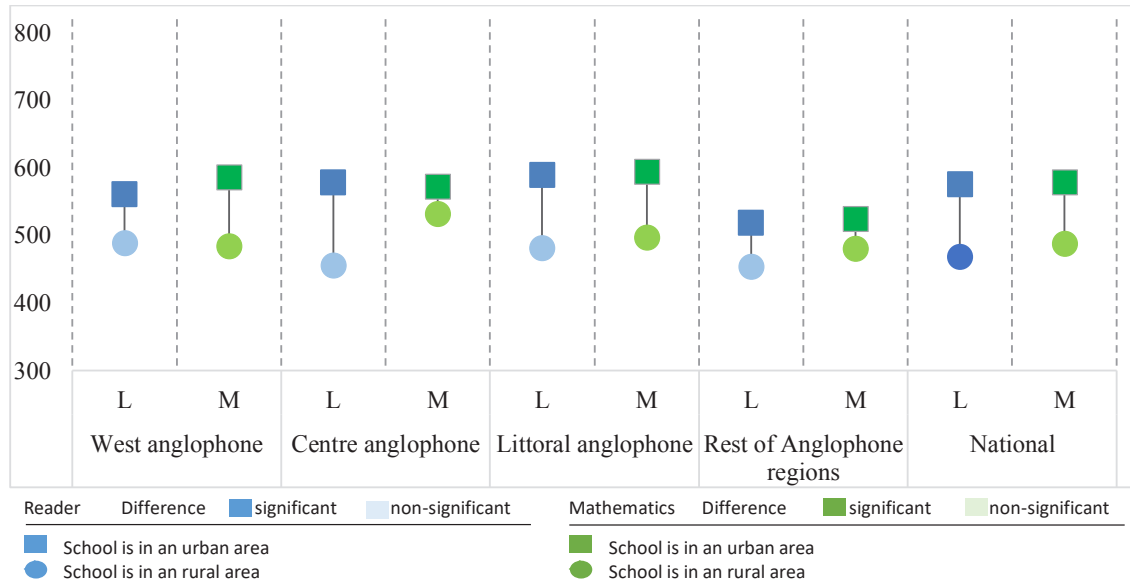
At the end of schooling in the Anglophone sub-system, we also observe that pupils whose schools are located in an urban area perform better than pupils whose schools are located in a rural area, both at the national level and in the different strata.

Graph 68: Performance of school-leavers in reading and mathematics by school location
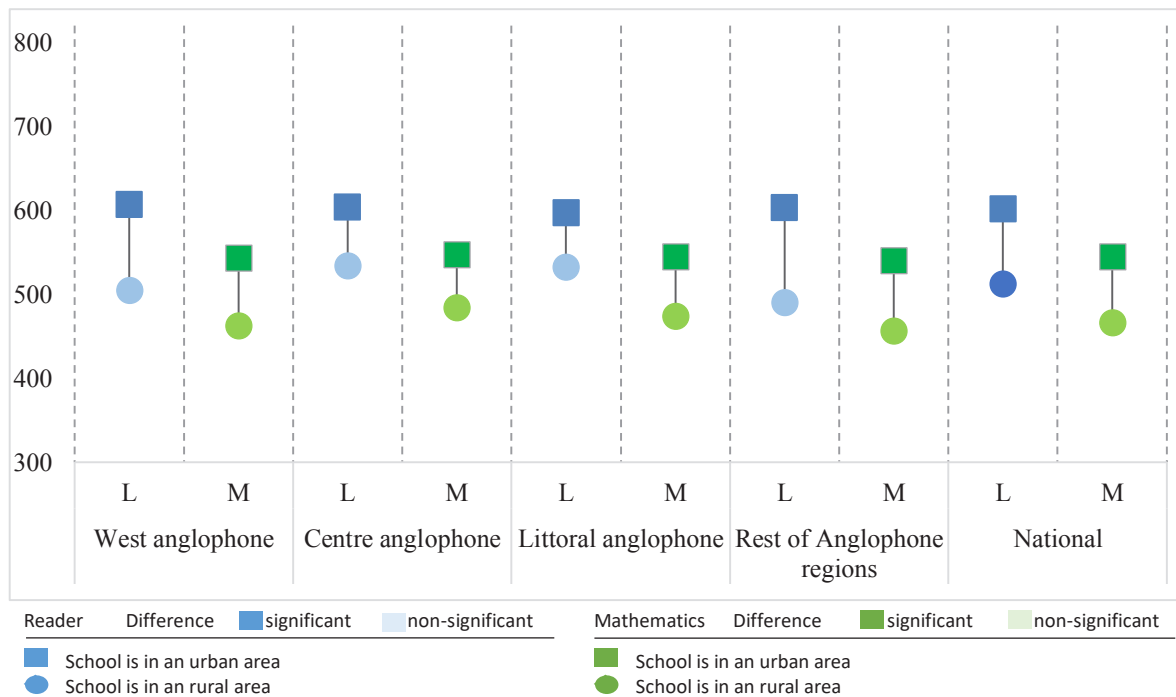
5.2.12. School environment: infrastructure, teaching resources, health and hygiene

School infrastructure, as well as equipment and pedagogical resources, contribute to creating a school environment that is conducive to teaching and learning. Several international evaluations have shown the importance of these resources in sufficient quantity and of appropriate nature to create favourable learning conditions (Hungi et al. 2011, Mullis et al. 2012a, Mullis et al. 2012b)

5.2.12.1. Classroom size

On average, at the beginning of schooling in the Anglophone sub-system in Cameroon, there are more classrooms with more than 55 pupils. Indeed, about 77.2% of pupils are in this situation, while only 22.8% are in a classroom with less than 35 pupils.

At the level of the different Anglophone strata of the country, in the West (100.0%) all the pupils evaluated are in classrooms with more than 55 pupils. Whereas in the Littoral and Rest of Anglophone strata, there is a predominance of rooms with more than 55 pupils.

Graph 69: Distribution of pupils at the beginning of schooling by class size
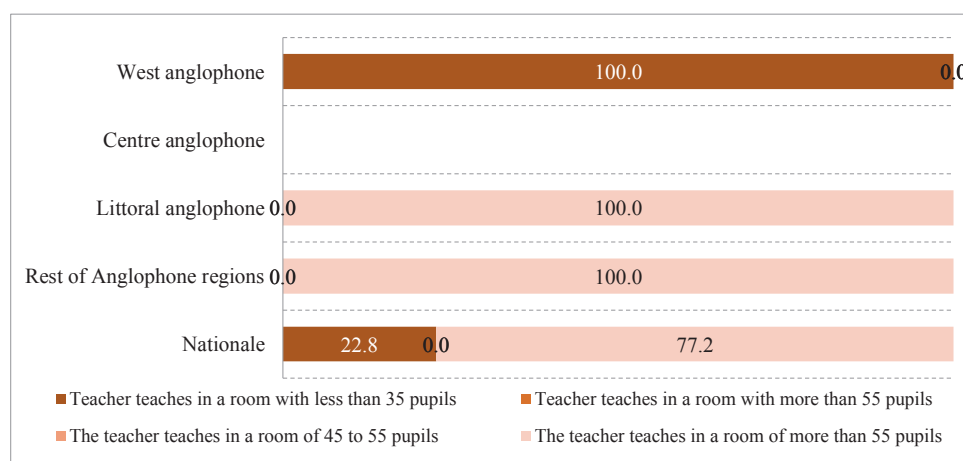
The graph below shows the performance of pupils at the beginning of their schooling as a function of class size. The observation that emerges directly is that the more a pupil is in an overcrowded room, the more his or her performance deteriorates, both in reading and in mathematics. However, at the level of the different strata, the situation is not significant.

Graph 70: Pupils' performance in reading and mathematics at the beginning of schooling, by schooling goal and class size
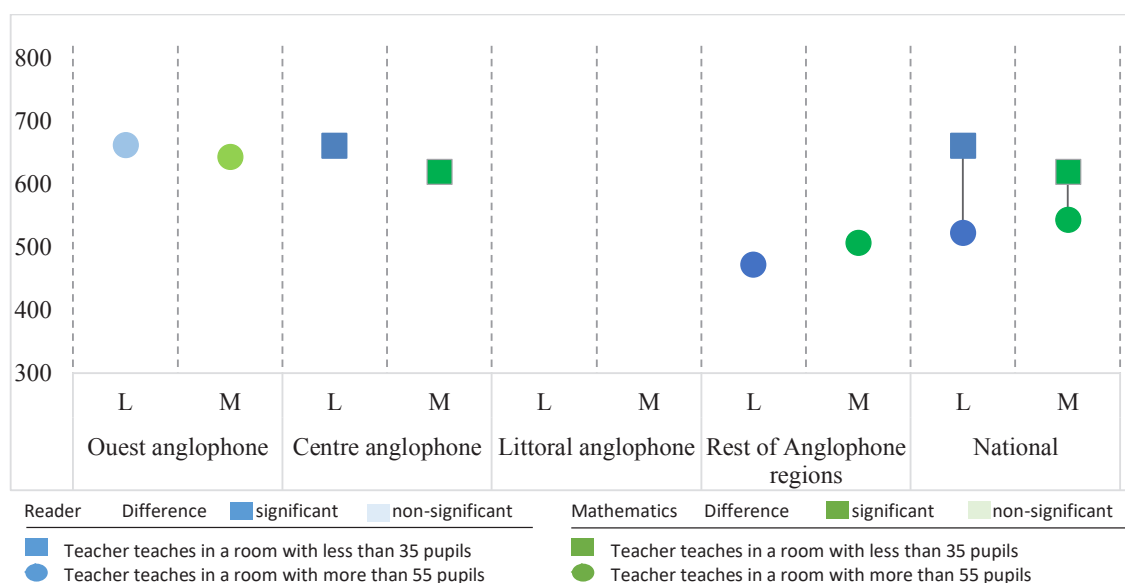
At the end of schooling in the Cameroonian Anglophone subsystem, on average 51.5% of classrooms have less than 35 pupils and 41.8% have more than 55 pupils. The remaining 6.7% of classrooms have between 35 and 55 pupils. According to the different Anglophone strata, the Center (100%) and the Rest of Anglophone (98.7%) have the highest proportion of classrooms with less than 35 pupils, 86.4%. While the Western stratum (77.9%) has all the school leavers in classrooms with more than 55 pupils.

Graph 71: Distribution of school leavers by class size
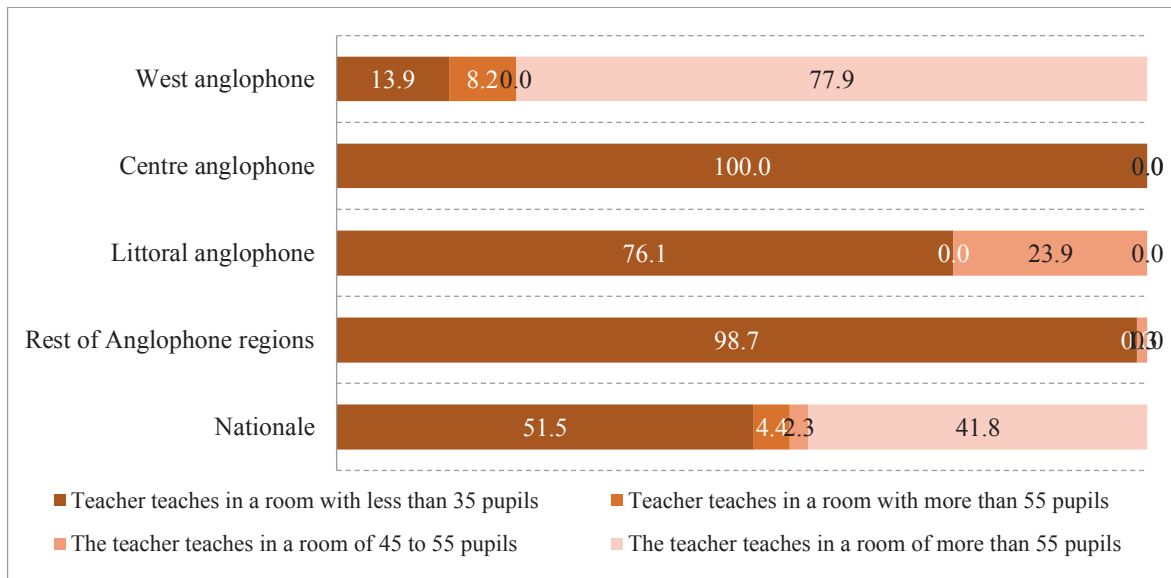
In contrast to the beginning of schooling, overcrowded classes at the end of Anglophone schooling do not have a significant effect on pupil performance. Even at the level of the different strata, it can be seen that class size does not have an influence on pupil performance.

Graph 72: Pupil performance in reading and mathematics at the end of schooling, by class size
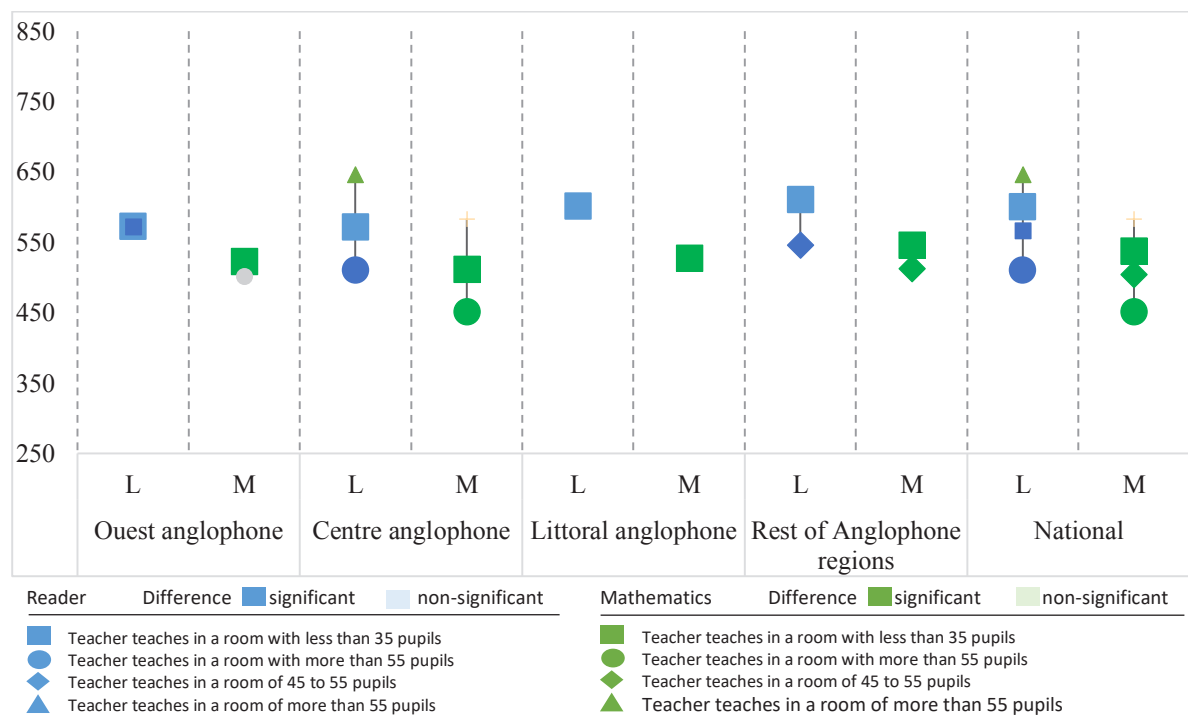
5.2.12.2. Classroom seating

On average, there is one seat for more than two pupils in the English-speaking subsystem at the beginning of schooling.

Graph 73: Distribution of pupils at the beginning of schooling by seats per pupil
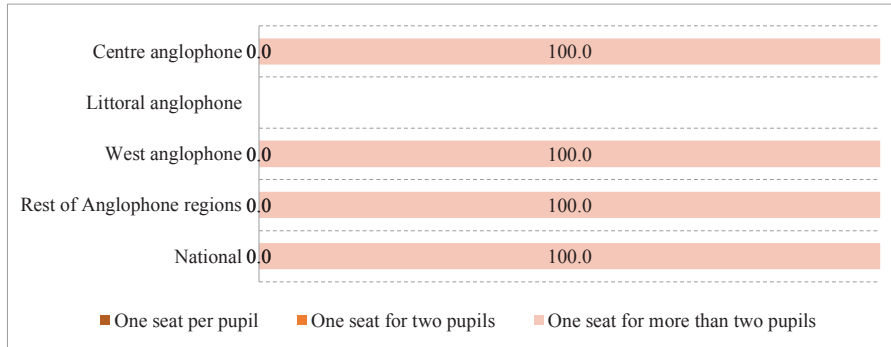
At the end of schooling, there is on average more than one seat for every two pupils, except for the littoral where there is one seat for every two pupils.

Graph 74: Distribution of school leavers by number of seats per pupil
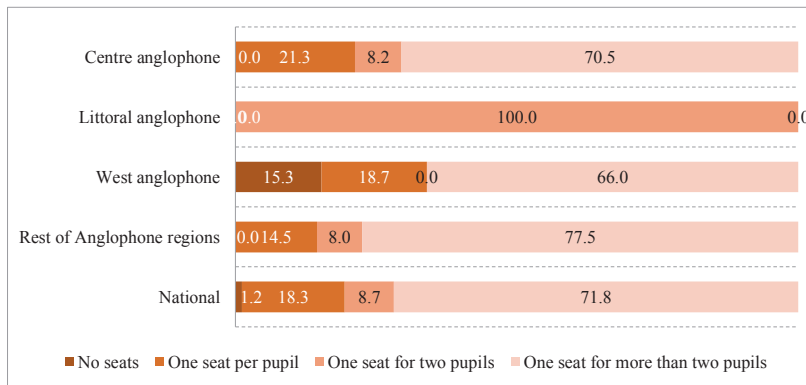
At the end of schooling in the Anglophone subsystem, the performance gap is not significant between pupils who use their own seats and those who do not in either reading or mathematics. This trend at the national Anglophone level is observed in all strata.

Graph 75: Pupils' performance in reading and mathematics at the end of schooling according situation of seat
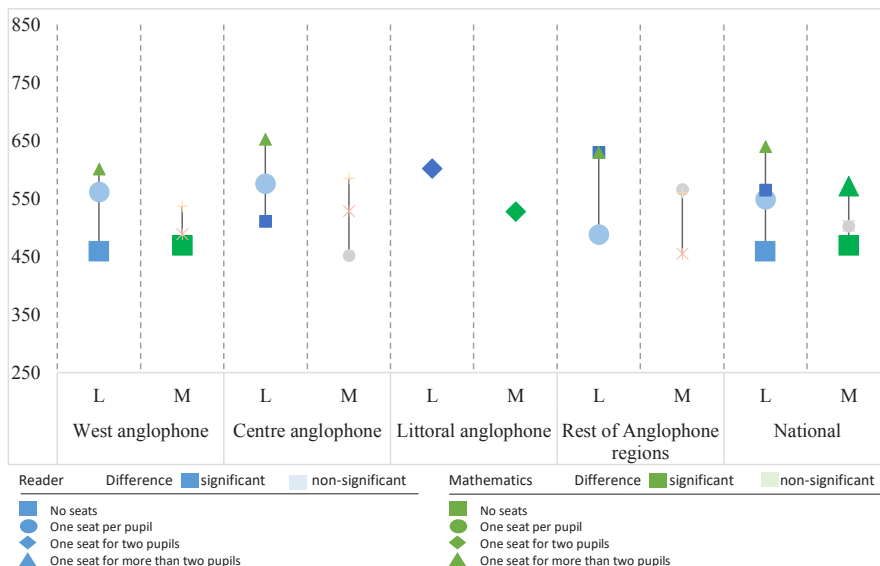
5.2.12.3. School books and textbooks made available to pupils
5.2.12.3.1. Libraries

Pupils attending a school with a library perform better in reading and mathematics than those attending a school without a library.

The distribution of early school leavers in schools with a library in the Anglophone subsystem is low. On average, only 24.6% of pupils are in schools with a library. This percentage is quite low, although studies note the role of libraries in supporting pupil learning (Molaudzi, 2020). This national trend is also observed in the different strata. Indeed, while in the Center and the Rest of the English-speaking world, one pupil in three is in a school with a library, in the Littoral and the West it is only one in five.

Graph 76: Distribution of pupils at the beginning of their schooling according to the availability of a library
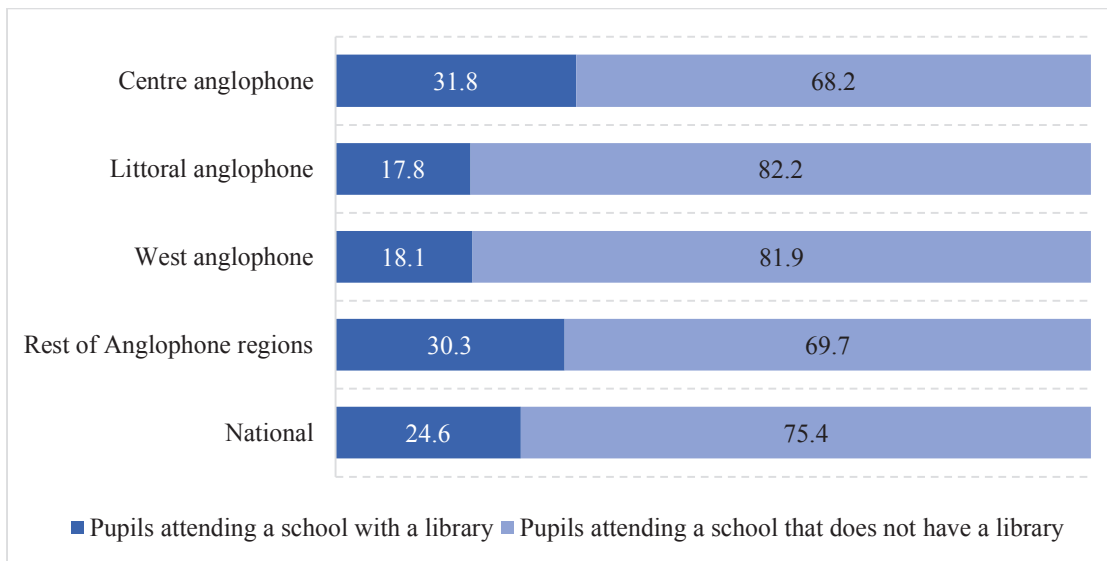
At the beginning of schooling in the Francophone subsystem, pupils attending a school with a library perform better in language and mathematics than those attending a school without one. This is also true for all strata.

*Graph 77: Pupils' performance in reading and mathematics at the beginning of schooling according to the availability of a library*
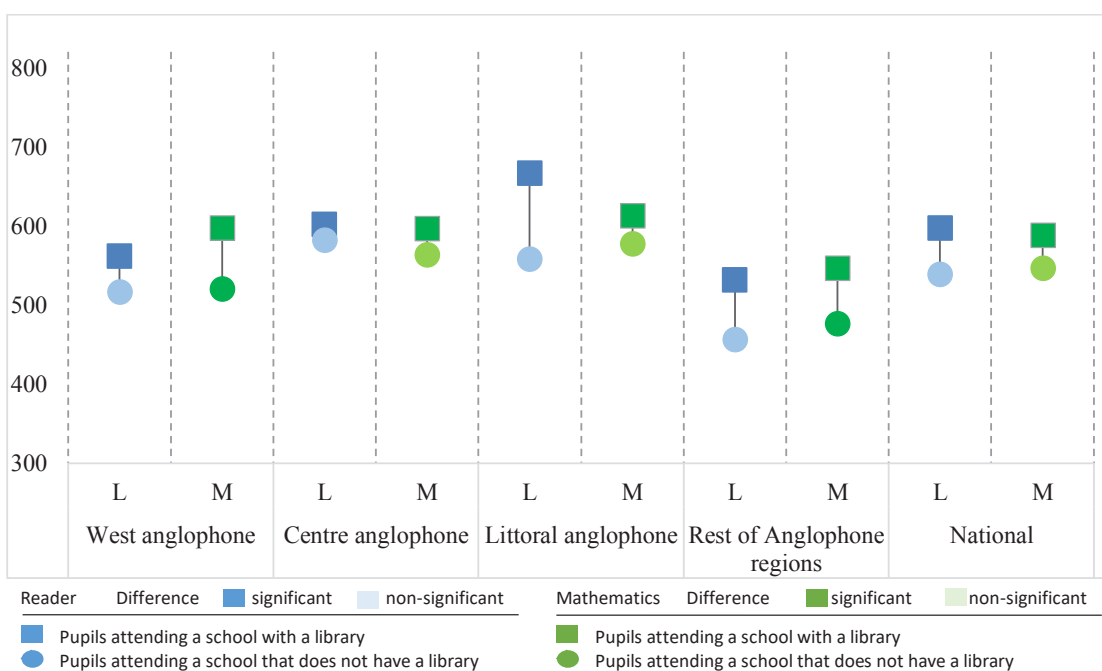
As at the beginning of schooling, the same trends can be observed at the end of schooling in the English-speaking subsystem. Only 21% of pupils attend a school with a library. This proportion is even lower in the Littoral stratum.

Graph 78: Distribution of school leavers by availability of a library
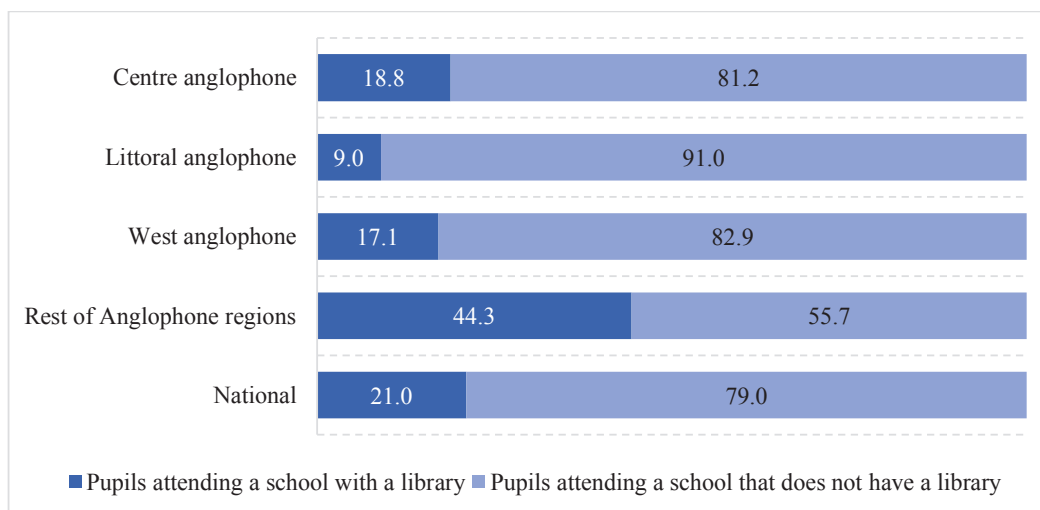
As was the case at the beginning of schooling, the availability of a library at school significantly improves pupils' performance in reading and mathematics at the end of schooling.

Graph 79: Pupils' performance in reading and mathematics at the end of schooling, by availability of a library
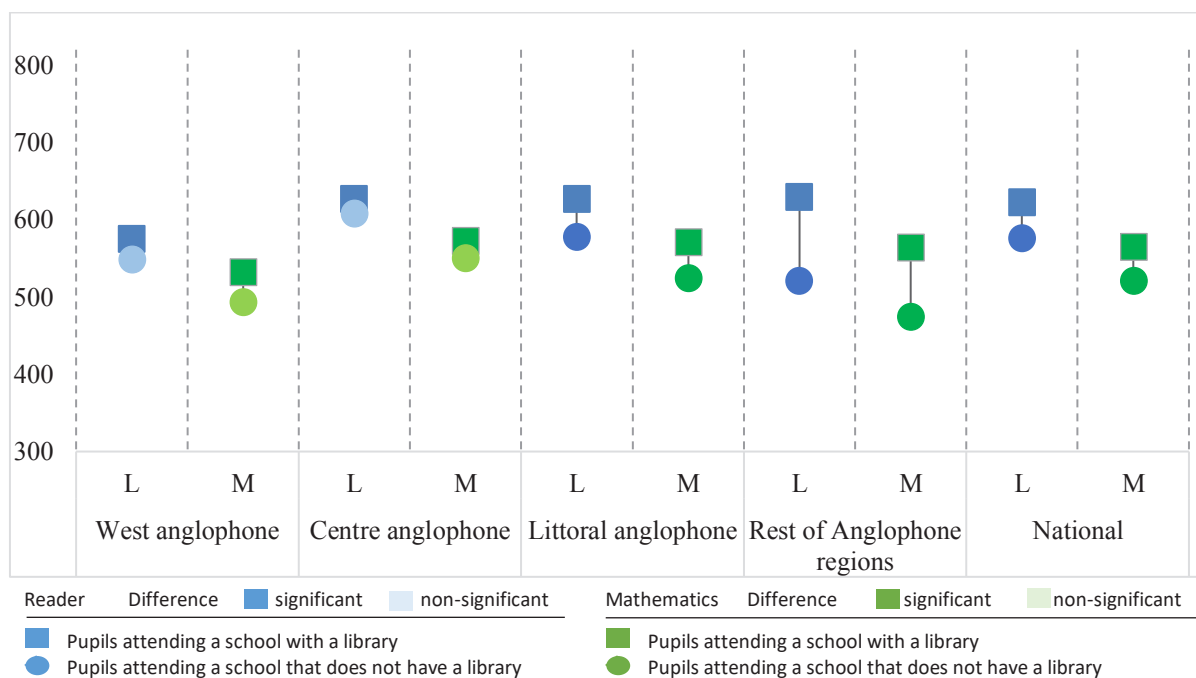
5.2.12.3.2.   Textbooks available to pupils

Only one pupil in ten at the beginning of schooling in the English-speaking subsystem uses a reading or mathematics book provided by the school on his own. This still shows a high proportion of pupils sharing a book, about 93% of pupils. In the Littoral stratum, all pupils share a reading or mathematics book provided by the school.

Graph 80: Distribution of pupils by availability of reading books at the beginning of schooling Graph
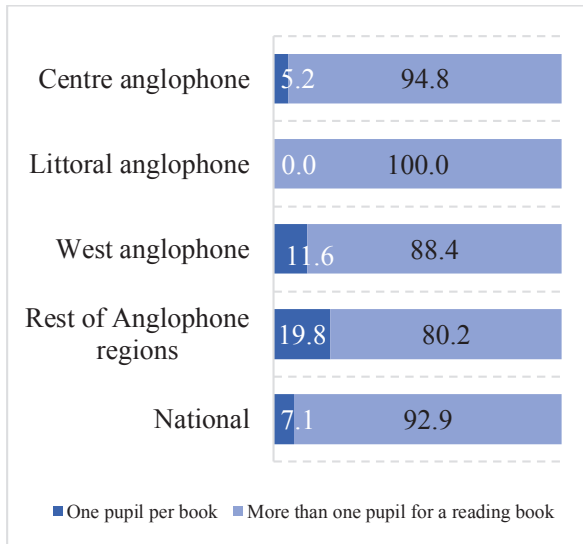
Graph 81: Distribution of pupils by availability of mathematics books at the beginning of schooling

	One pupil per book	More than one pupil for a reading book
Centre anglophone	5.2	94.8
Littoral anglophone	0.0	100.0
West anglophone	11.6	88.4
Rest of Anglophone regions	19.8	80.2
National	7.1	92.9

■ One pupil per book   ■ More than one pupil for a reading book

	One pupil per book	More than one pupil for a math book
Centre anglophone	5.2	94.8
Littoral anglophone	0.0	100.0
West anglophone	11.6	88.4
Rest of Anglophone regions	19.8	80.2
National	7.1	92.9

■ One pupil per book   ■ More than one pupil for a math book

Overall, it can be seen that the gap in pupil performance at the beginning of schooling according to the availability of a reading book is not significant, except in the Western and Central strata, where this performance gap is in favour of pupils in the situation of one pupil per reading book.

Graph 82: Performance of pupils in reading and mathematics at the beginning of schooling, according to the availability of a reading book

Reader   Difference ■ significant ■ non-significant   Mathematics   Difference ■ significant ■ non-significant

■ One pupil per book
● More than one pupil for a reading book

■ One pupil per book
● More than one pupil for a reading book
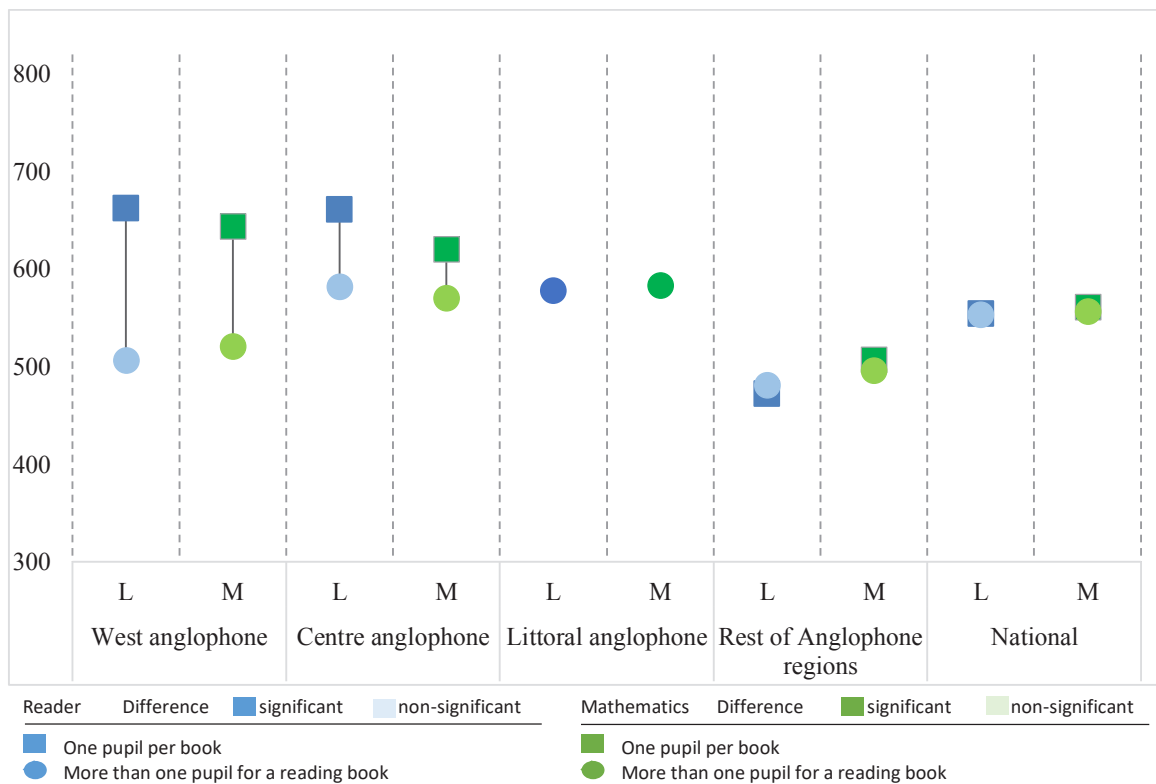
The performance findings according to the availability of a reading book are identical depending on whether the pupil has a mathematics book at school.

Graph 83: Pupils' performance in reading and mathematics at the beginning of schooling according to the availability of a mathematics book at the beginning of schooling
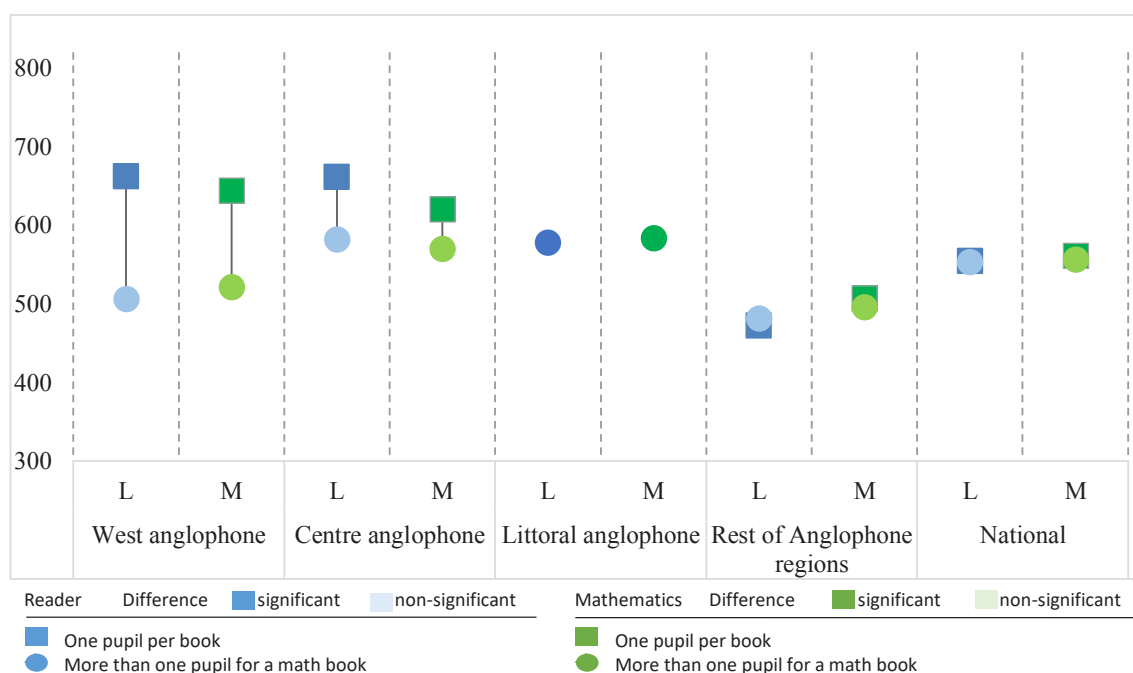
At the end of schooling in the francophone subsystem, one pupil in five uses a reading or mathematics book provided by the school alone. In the Western stratum, the situation observed at the beginning of schooling tends to be confirmed, i.e. all pupils share a reading or mathematics book provided by the school.

Graph 84: Distribution of pupils by availability of reading book at the end of schooling
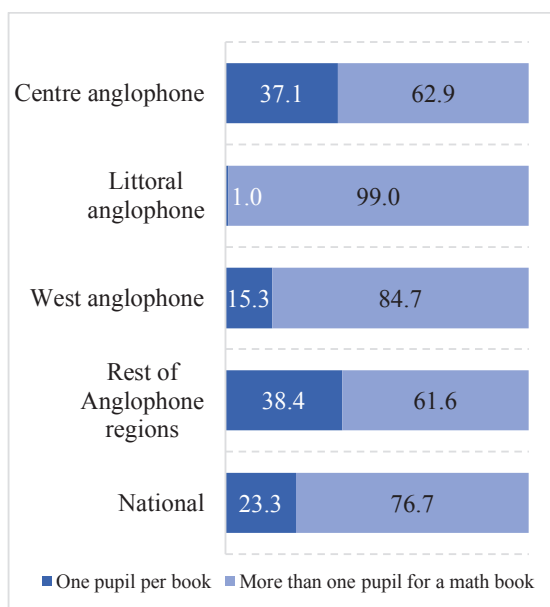
Graph 85: Distribution of pupils by availability of mathematics book at the end of schooling
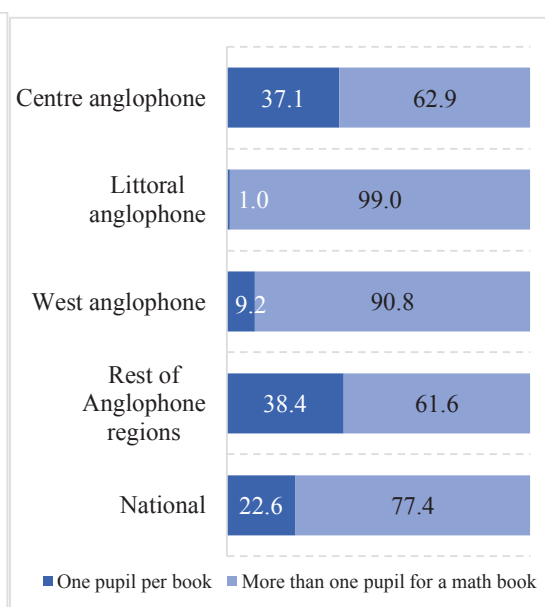
We note that at the end of schooling, the gap in pupil performance according to book availability is significant in favour of pupils in the situation of one pupil per reading book. According to the different Anglophone strata, this gap is also significant only in the Rest of Anglophone stratum.

Graph 86: Pupils' performance in reading and mathematics at the end of schooling according to availability of reading book at the end of schooling
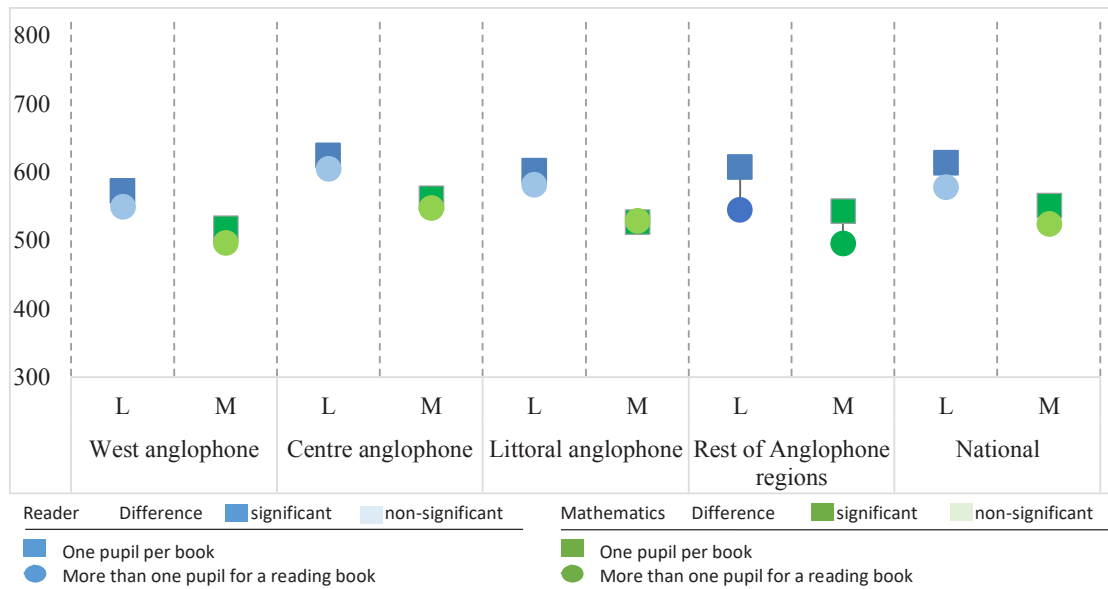
The performance findings according to the availability of a reading book are also observed according to whether the pupil has a mathematics book at school.

Graph 87: Pupils' performance in reading and mathematics at the end of schooling according to availability of a mathematics book at the end of schooling
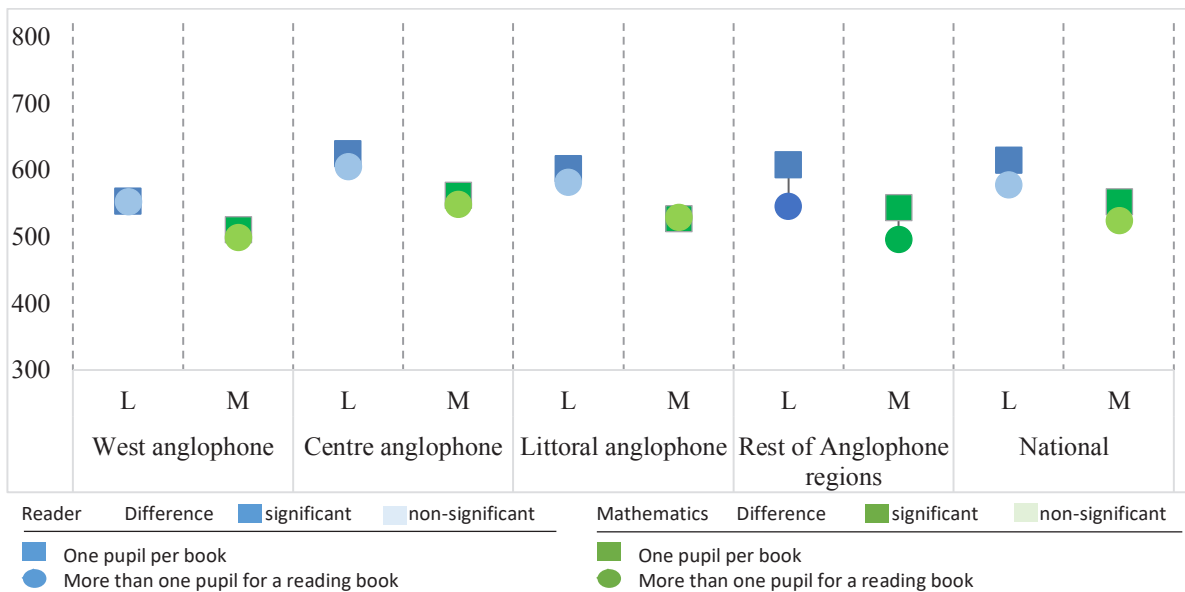
5.2.12.4. Hygiene and sanitary conditions

When health is threatened, so is learning. This reality, as evidenced by the impact of the COVID19 pandemic, calls for a particular focus on the issue of hygiene and sanitation in schools. The results on this thematic show that about nine out of ten pupils have access to a latrine at school and this significantly improves their academic performance.

On average, 91.3% of pupils at the beginning of Anglophone schooling have a latrine at school, particularly in the West where it is all pupils.

Graph 88: Distribution of early school leavers by availability of a latrine
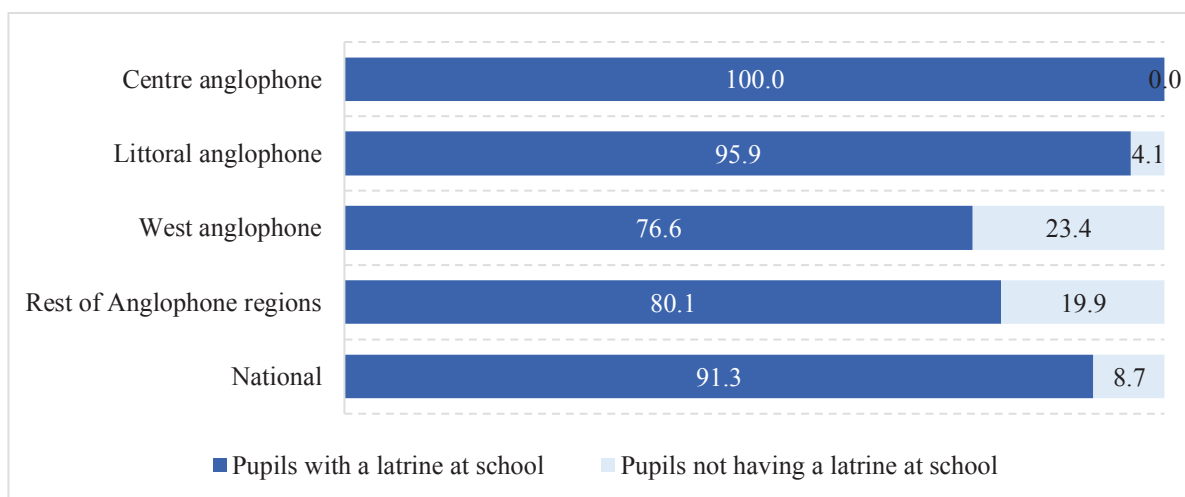
The performance of pupils with a latrine at school is significantly better than that of pupils without a latrine at school. The situation observed at the national Anglophone level is also apparent in all strata except in the Center.

Graph 89: Performance of early school leavers in reading and mathematics by availability of a latrine
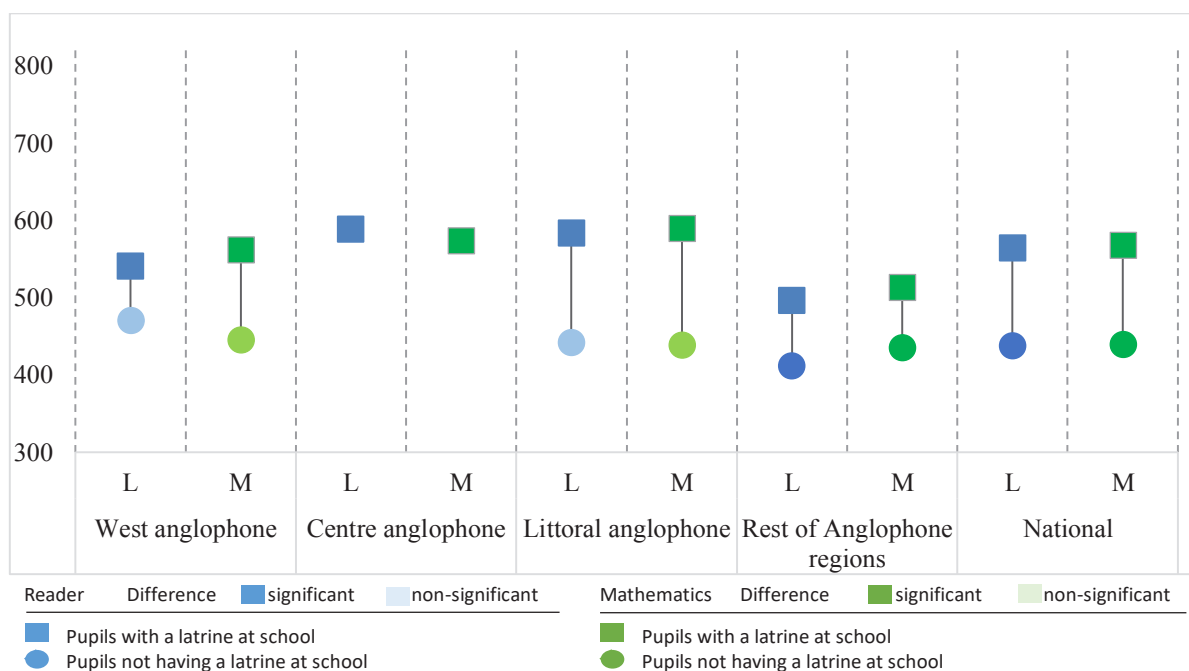
At the end of schooling, the same trends are observed as at the beginning of schooling, with an average of 92.4% of pupils having a latrine at school.

Graph 90: Distribution of early school leavers by availability of a latrine
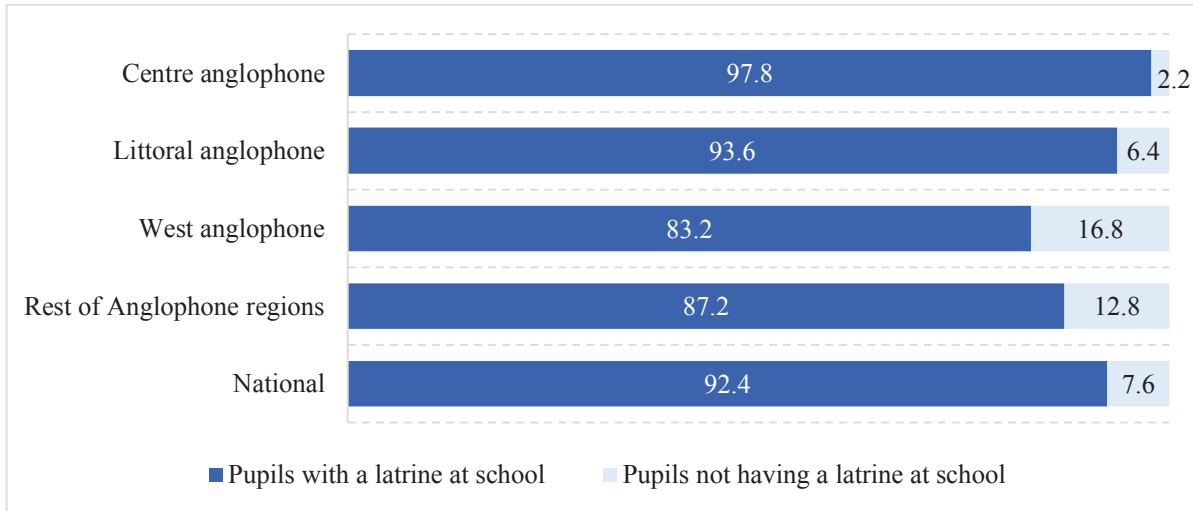
At the end of schooling, the availability of latrines significantly improves the academic performance of pupils in reading and mathematics in the Anglophone subsystem. This is the case in all Anglophone strata of the country.

Graph 91: Performance of school leavers in reading and mathematics by availability of a latrine
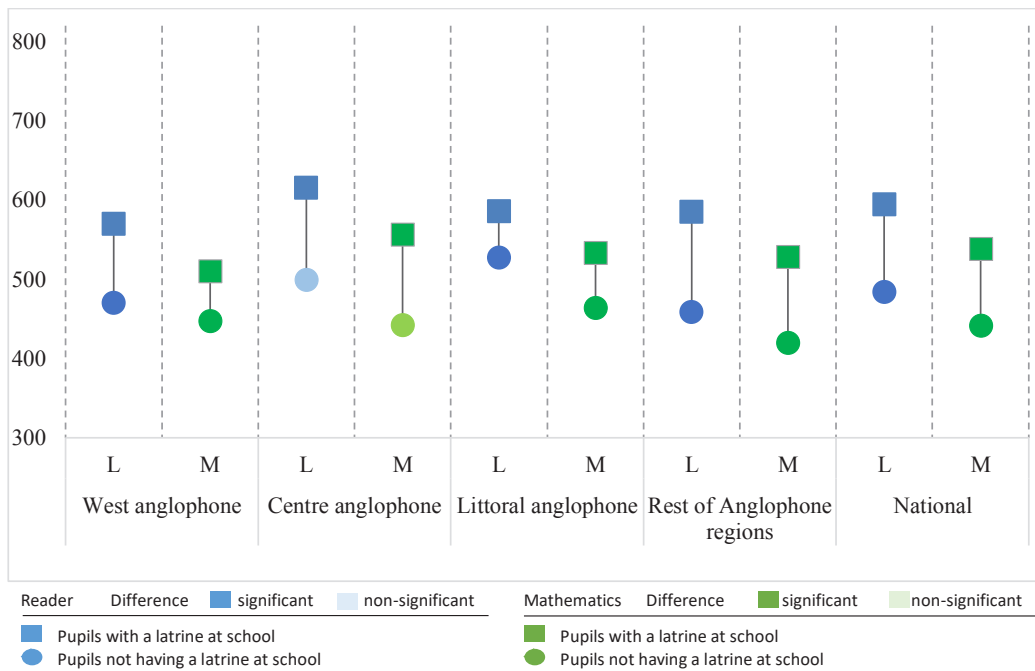
5.2.12.5. First aid facilities and health actions

On average, nine out of ten pupils in the Anglophone subsystem have a school infirmary or health care facilities and they perform better than those without access to health care facilities at school.

The average percentage of Francophone school leavers attending a school with an infirmary or first-aid kit is 90.1%. This percentage is 100% in the Center stratum, and in the Littoral it is about 95%.

Graph 92: Distribution of early school leavers according to the availability of an infirmary
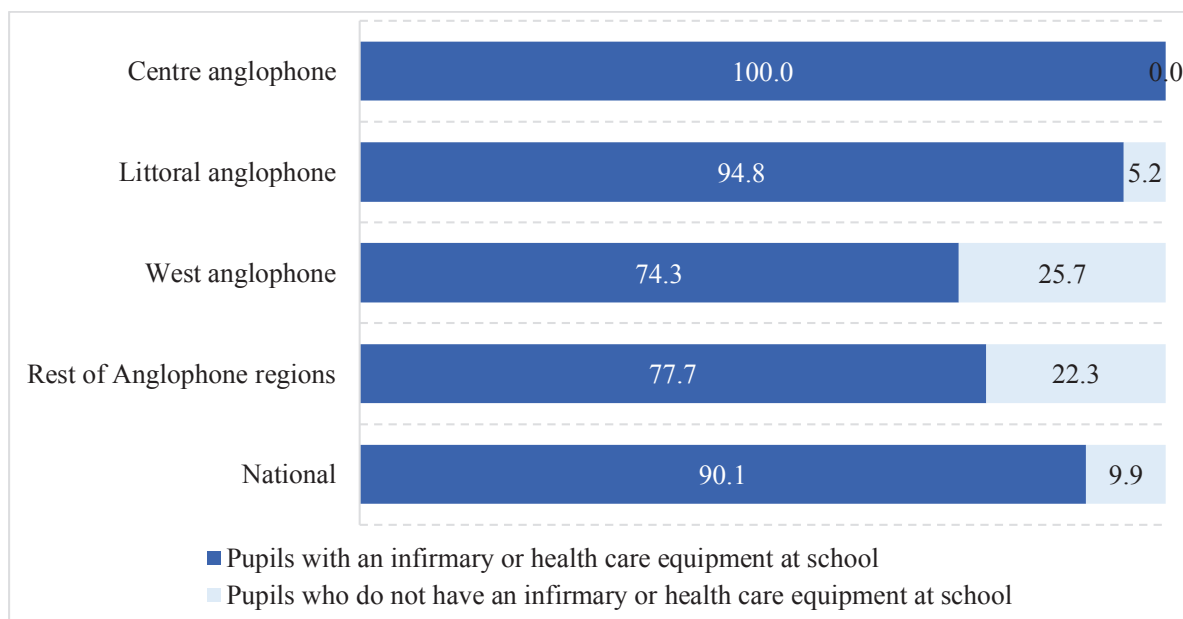
It was found that at the beginning of schooling in the Anglophone sub-system, pupils who had access to an infirmary or health care facilities at school performed better in reading and mathematics than those who did not. This observation is also observed in the majority of the Anglophone strata in Cameroon, except in the Center, where all pupils had access to an infirmary or health care.

Graph 93: Performance of pupils at the beginning of schooling in reading and mathematics according to the availability of an infirmary
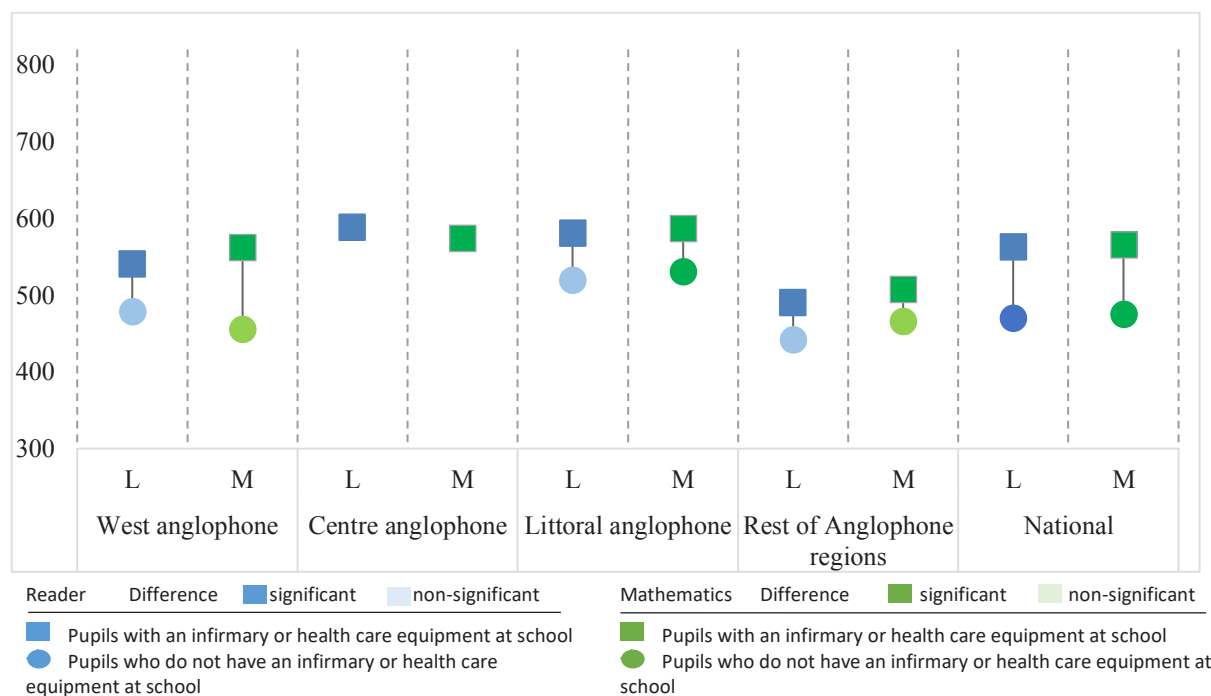
The trends observed at the beginning of schooling are also observed at the end of schooling, where about 91.5% of pupils have an infirmary or medical equipment at school.

Graph 94: Distribution of school-leavers according to availability of an infirmary
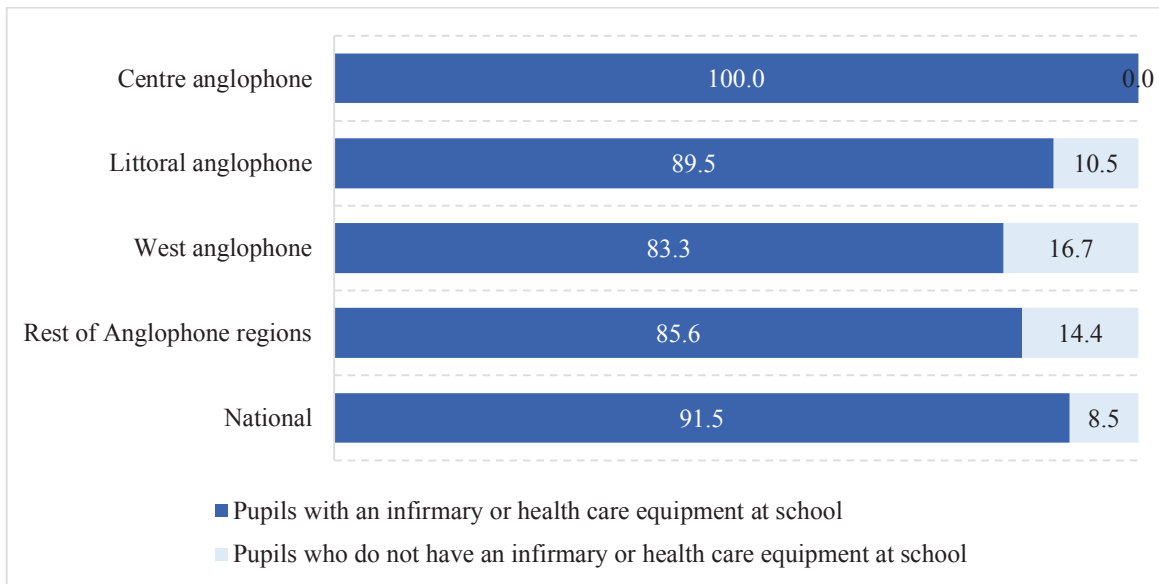
 With regard to pupil performance, as was the case at the beginning of schooling, at the end of schooling as well, we find that pupils who have a school infirmary or health care equipment have better results in reading and mathematics than those who do not. As was the case at the beginning of schooling, this difference is not significant in the Center stratum.

Graph 95: Performance of pupils at the end of schooling in reading and mathematics according to the availability of an infirmary
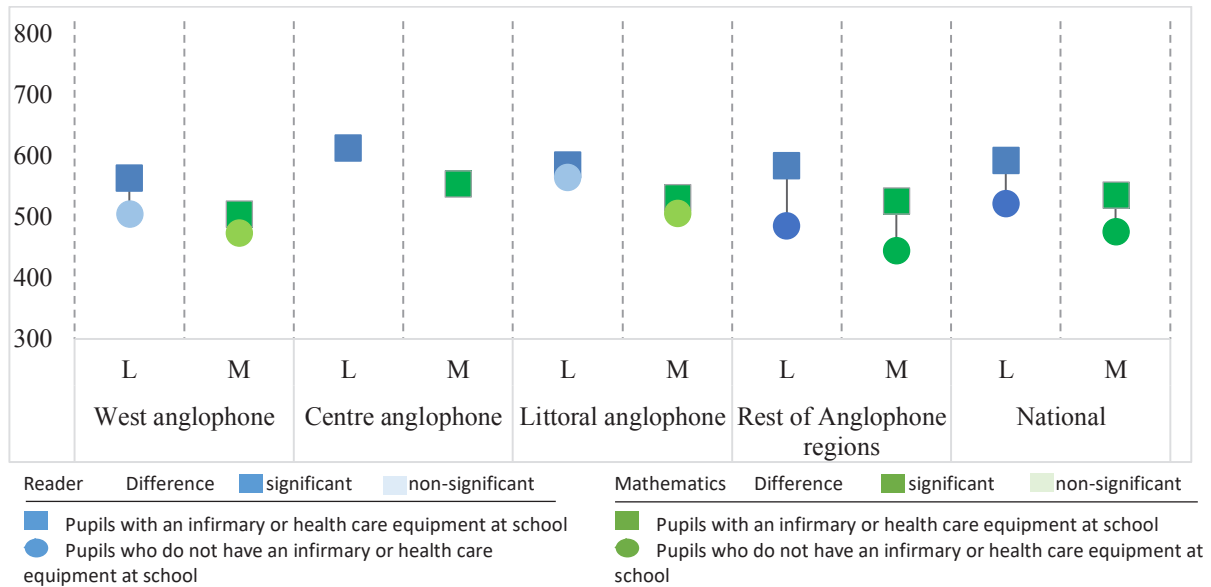
5.3. SCHOOL ENVIRONMENT AND PUPIL PERFORMANCE

A good school environment (land use, presence of school infrastructure and facilities) is conducive to learning.

5.3.1. School infrastructure and pupil performance

At the beginning of schooling, the average level of the school infrastructure index for all the Anglophone strata of Cameroon is 57.7. The Littoral and the Center have the highest level of infrastructure. The indicator of dispersion of results within a stratum (the standard deviation) shows that the degree of homogeneity in the distribution of infrastructure between schools varies according to the stratum. Thus, the West and the Center show the highest disparities, while the Littoral and the Rest of Anglophone show less. Among the different Anglophone strata, the Littoral thus combines a high level of school infrastructure with a better allocation of this infrastructure between schools.

At the end of the school year, the average level of the school infrastructure index in the Francophone strata is 58.1. This index is highest in the Center and Littoral (as was already the case at the beginning of the school year). The Rest of the Anglophone region has an index close to the average. The West has the lowest level of school infrastructure. The Rest of the Anglophone stratum has the highest disparities, while the Littoral and the West have the lowest. It can be seen that the Littoral stratum combines a high level of school infrastructure with a fairly good allocation of this infrastructure between schools.

Graph 96: Average level of the school infrastructure index and standard deviation - Beginning of schooling
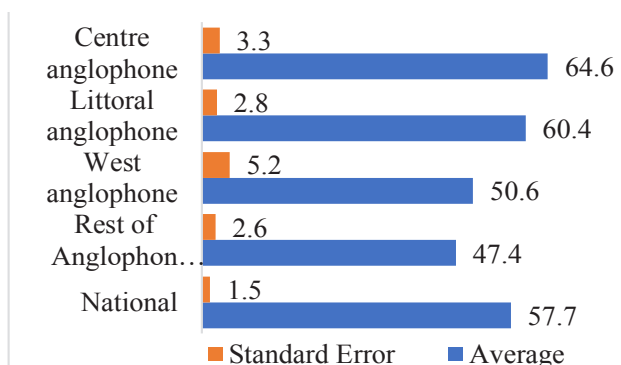
Graph 97: Average level of the school infrastructure index and standard deviation - End of schooling
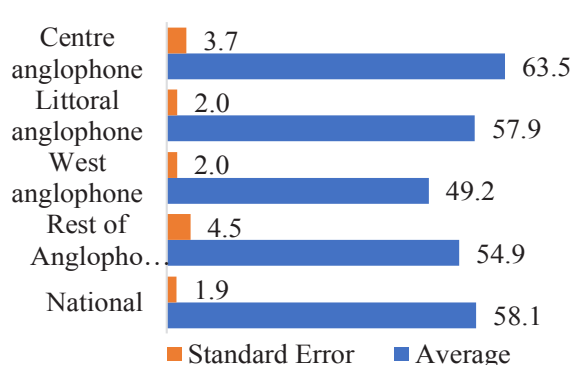
At the beginning of schooling, the average level of infrastructure provision in the school positively influences performance in reading and mathematics for the Anglophone group. This influence is positive and significant in both subjects in all strata except in the Rest of the Anglophone population in reading. When the average class equipment index is taken into account, this link becomes non-significant for both subjects, but positive in mathematics and negative in reading.

Graph 98: *Average gap between the scores of pupils in a given school and pupils whose school infrastructure index is one unit lower, at the start of schooling - Reading*
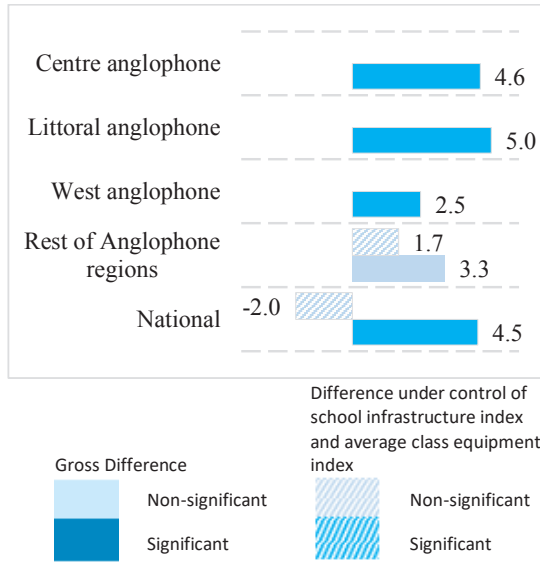
Graph 99: *Average gap between the scores of pupils in a given school and pupils whose school infrastructure index is one unit lower, at the start of schooling - Mathematics*
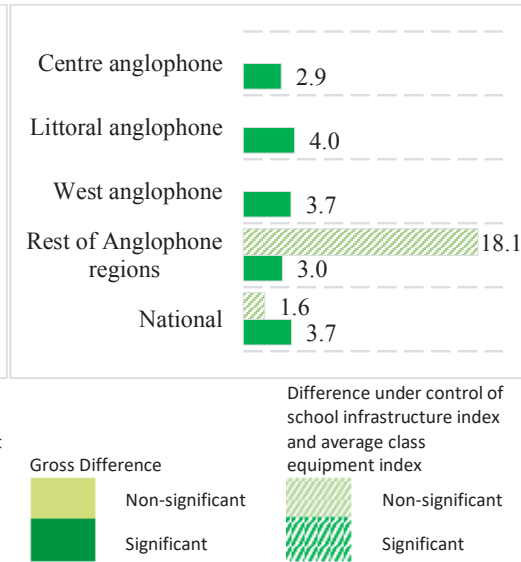
The average level of school infrastructure endowment positively influences Pupils' performance in reading and mathematics at the end of schooling for the Anglophone group. The link between the level of school infrastructure and pupils' performance in reading and mathematics is significant in all strata in both subjects. When the average classroom equipment index is taken into account, this link remains significant in both subjects in all strata, except in Littoral. In all strata, we note that pupils with a high level of school infrastructure obtain better results.

Graph 100: *Average difference between the scores of pupils in a given school and pupils whose school infrastructure index is one unit lower, at the beginning of schooling - Language*
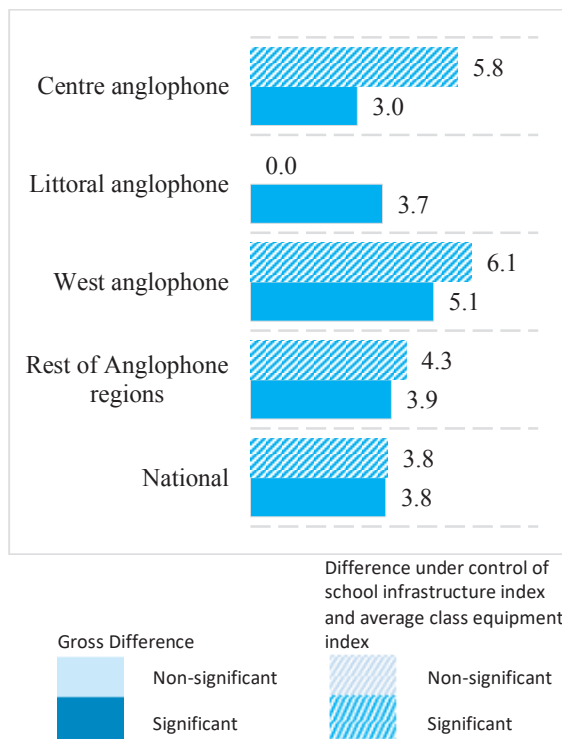
Graph 101: *Average difference between the scores of pupils in a given school and pupils whose school infrastructure index is one unit lower, at the beginning of schooling - Mathematics*
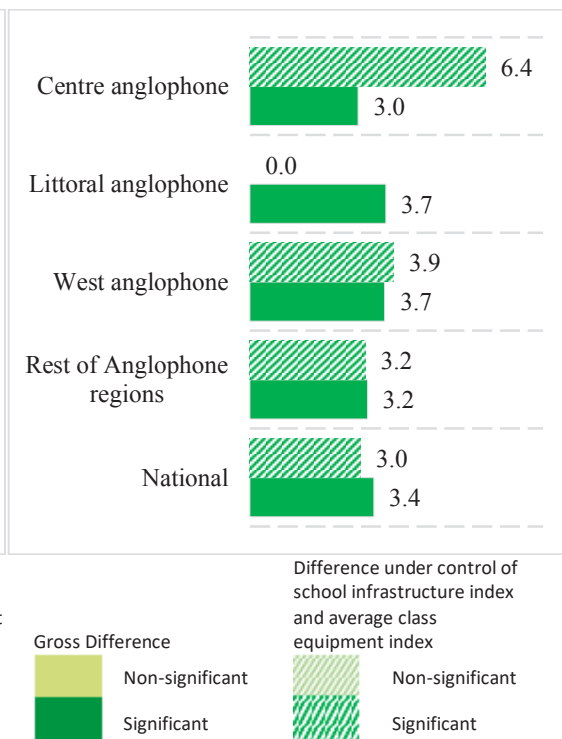
5.3.2. Classroom equipment and pupil performance

At the beginning of schooling, the average level of the classroom equipment index in the Anglophone subsystem of Cameroon is 42.5. This index is highest in the Francophone stratum of the Center. In the Western stratum, the index is above or very close to the average. The indicator of dispersion of results within a stratum (the standard deviation) shows that the degree of homogeneity in the distribution of equipment between schools varies according to the stratum. Thus, the Center and the West show the lowest disparities. Thus, among the different English-speaking strata, the Center combines a high level of equipment in the classroom with a better allocation of this equipment between schools.

On the other hand, at the end of schooling, the average level of the classroom equipment index for the Francophone strata is 46.9. This index is highest in the Littoral. The other strata with an index above or very close to the average are the Center and the West. The Littoral stratum (almost zero disparity), the West and the Rest of the English-speaking world have the lowest disparities, while the center has more. It can be seen that the Littoral stratum combines a high level of classroom equipment with a fairly good allocation of this equipment between schools.

Graph 102: Average level of classroom equipment index and standard deviation - Beginning of schooling
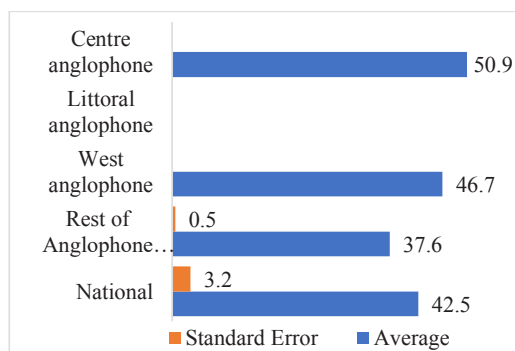
Graph 103: Average level of classroom equipment index and standard deviation - End of schooling
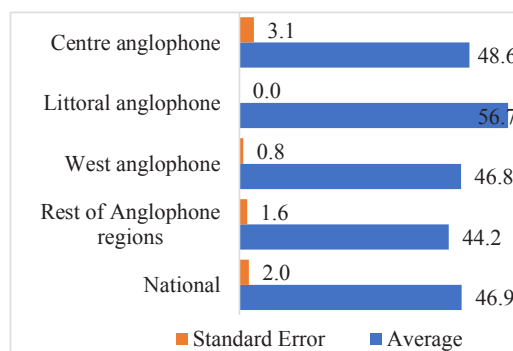
At the beginning of schooling, the average level of equipment in the classroom positively influences performance in reading and mathematics for the Anglophone group. However, this influence is not significant at the strata levels in either subject. When the average school infrastructure index is taken into account, this link remains positive for both subjects, but not significant.

Graph 104: Average gap between the scores of pupils in a given school and pupils with a class equipment index one unit lower, at the start of schooling - Reading
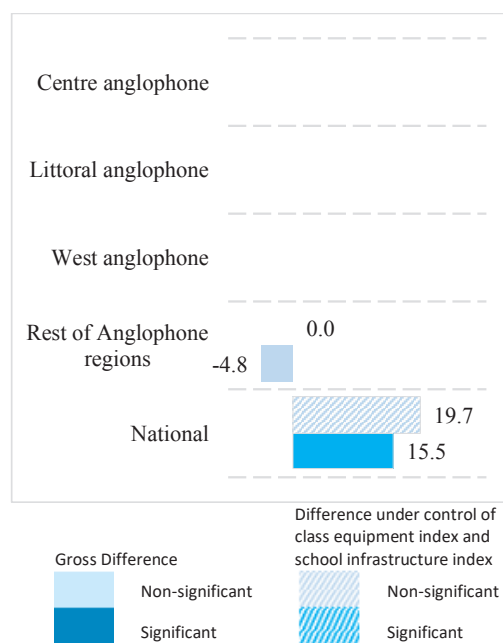
Graph 105: Average gap between the scores of pupils in a given school and pupils with a class equipment index one unit lower, at the start of schooling - Mathematics.
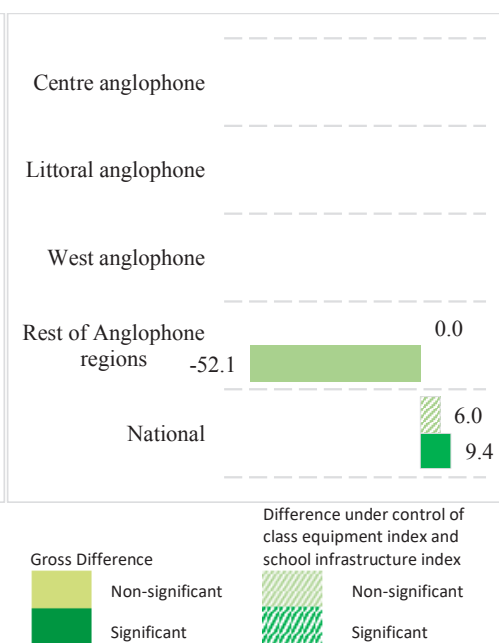
At the end of the school year, the average level of equipment in the classroom positively influences performance in reading and mathematics for the Anglophone group as a whole, but it is not significant. This influence only becomes significant in mathematics in the Rest of the Anglophone stratum. When the school's average infrastructure index is taken into account, this link remains non-significant and positive for both subjects. At the strata level, it becomes significant and negative in the West in both subjects.

Graph 106: Average gap between the scores of pupils in a given school and pupils whose class equipment index is one unit lower, at the start of schooling - Language
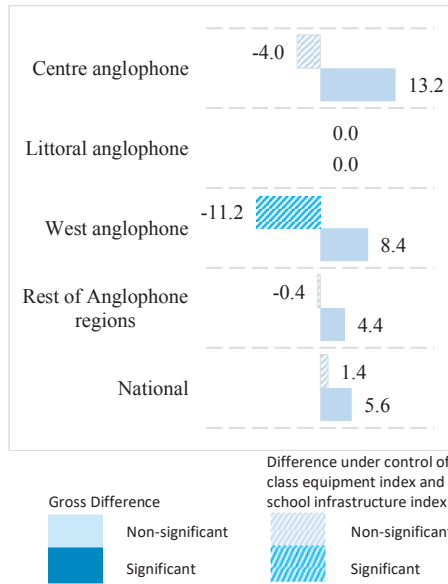
Graph 107: Average gap between the scores of pupils in a given school and pupils whose class equipment index is one unit lower, at the start of schooling - Mathematics

5.3.3. Teacher perception and pupil performance

At the beginning of schooling, the average level of the teacher perception index in the Anglophone sub-system of Cameroon is 54.8. This index is highest in the Western Anglophone stratum. Overall, all the other strata, with the exception of the Littoral, have an index very close to the average. The indicator of dispersion of results within a stratum (the standard deviation) shows that the degree of homogeneity in the distribution of teachers' perceptions between schools varies according to the stratum. Thus, the English-speaking Rest has the highest disparities, while the Center and the West have the lowest, almost zero.

On the other hand, at the end of the school year, the average level of the equipment index for the class in the Francophone area is 50.7. This index is highest in the center. The stratum with an index very close to the average is the Littoral. The Western and Central strata show the highest disparities, while the Rest of the Anglophone area and the Littoral show less.

Graph 108: Average level of the teacher perception index and standard deviation - Beginning of schooling
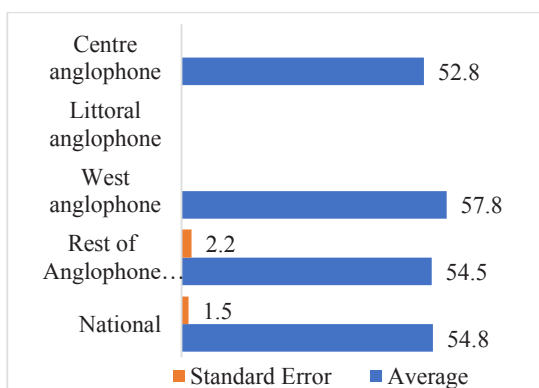
Graph 109: Average level of the teacher perception index and standard deviation - End of schooling
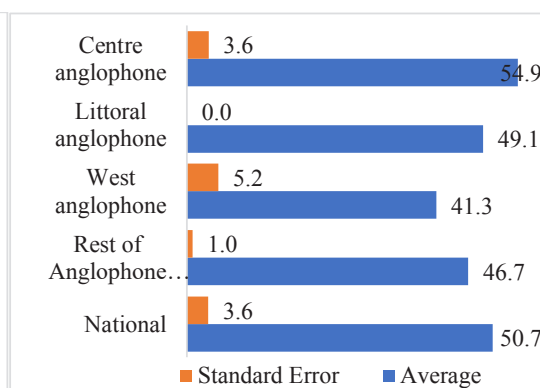
At the beginning of school, the average level of teacher perception positively influences performance in reading and mathematics for the Anglophone group. However, this influence was not significant. This observation is also observed at the strata level. When the average class equipment index is taken into account, this positive link remains insignificant in reading, but significant in mathematics. At the level of the different strata, the link remains non-significant and positive in both subjects.

Graph 110: Average gap between the scores of pupils in a given school and pupils whose teacher perception index is one unit lower, at the beginning of schooling - Reading

Graph 111: Average gap between the scores of pupils in a given school and pupils whose teacher perception index is one unit lower, at the beginning of schooling - Mathematics
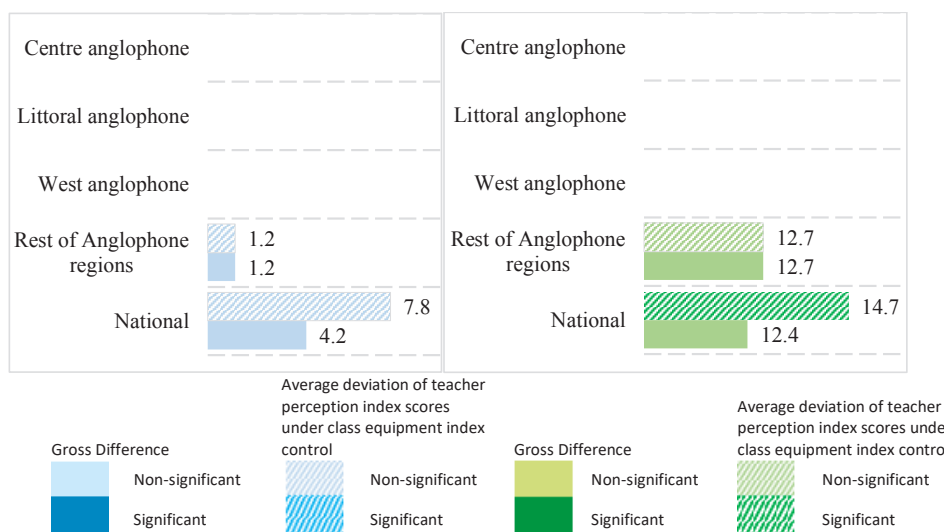
At the end of the school year, the average level of teacher perception has a positive influence on performance in reading and a positive influence on performance in mathematics for the Anglophone group as a whole. This influence is not significant and always positive at the strata level except in the Rest of the Anglophone group where it is negative. When the average equipment index of the class is taken into account, this link remains non-significant and negative in both subjects. At the level of the strata under the control of the average class equipment index, the link becomes significant and negative in the Rest of the Anglophone Region and the Center in both disciplines. However, it remains positive and insignificant in the other strata (West and Littoral.

Graph 112: Average gap between the scores of pupils in a given school and pupils whose teacher perception index is one unit lower, at the beginning of schooling - Language

Graph 113: Average gap between the scores of pupils in a given school and pupils whose teacher perception index is one unit lower, at the beginning of schooling - Mathematics
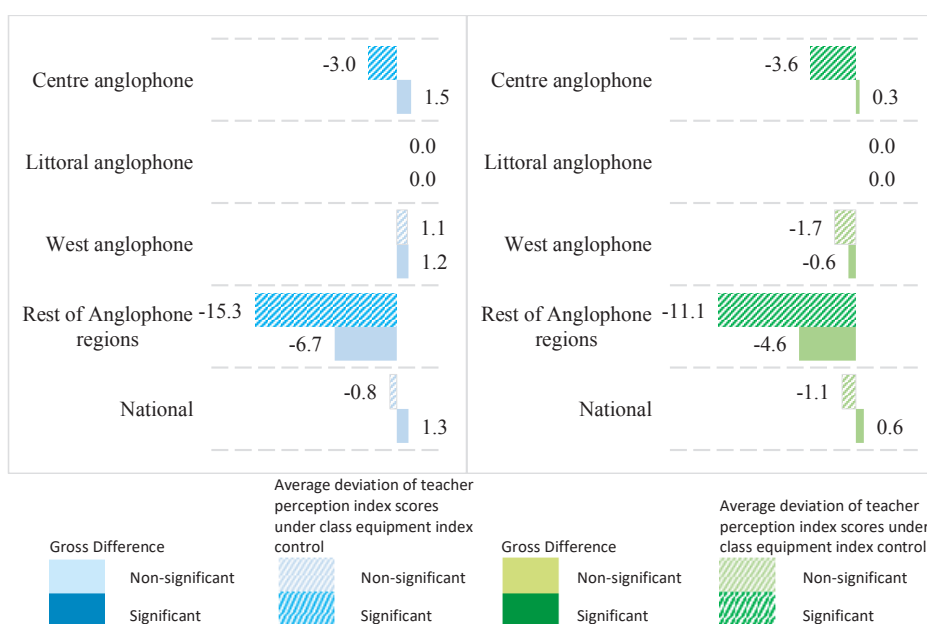
5.3.4. Community involvement and pupil performance

At the beginning of schooling, the average level of the community involvement index in the Anglophone sub-system of Cameroon is 53.3. Overall, all strata have an index level around the mean. The indicator of dispersion of results within a stratum (the standard deviation) shows that the degree of homogeneity in the distribution of community involvement between schools varies according to the stratum.

At the end of the school year, however, the average level of the community involvement index for the Francophone population as a whole is 52.8. As was already the case at the beginning of the school year, all strata have an index level around the average at the end of the school year. The rest of Anglophone stratum shows the highest disparities, while the West shows less.

Graph 114: Average level of the community involvement index and standard deviation - School start
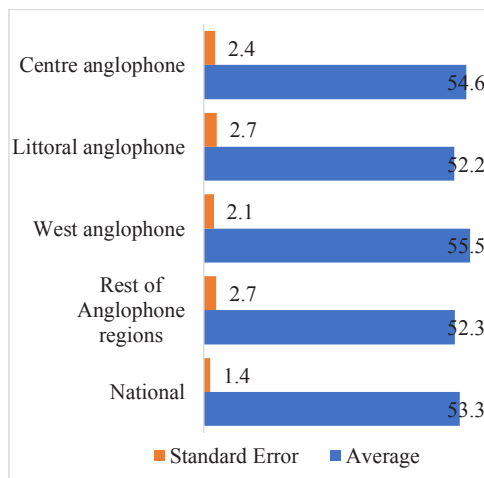
Graph 115: Average level of the community involvement index and standard deviation - School end
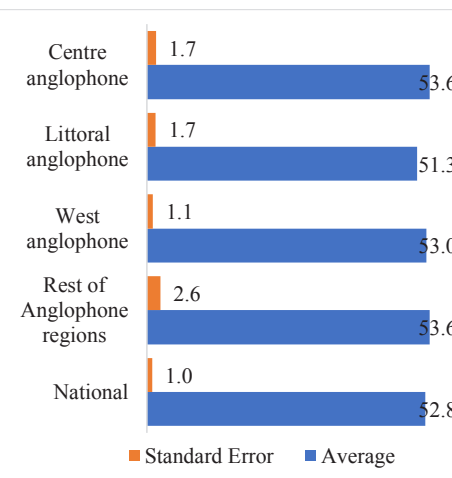
At the beginning of school, the average level of community involvement positively influences performance in reading and mathematics for the Anglophone group. This influence is not significant in either subject. At the stratum level, the same trend is observed as at the national level, except in the Center in reading and the Littoral in mathematics, where this influence is negative. When the average class equipment index is taken into account, this link remains insignificant in mathematics, and significant in reading. At strata level, the link remains insignificant in both subjects.

Graph 116: Average gap between the scores of pupils from a given school and pupils whose community involvement index is one unit lower, at the beginning of schooling - Reading
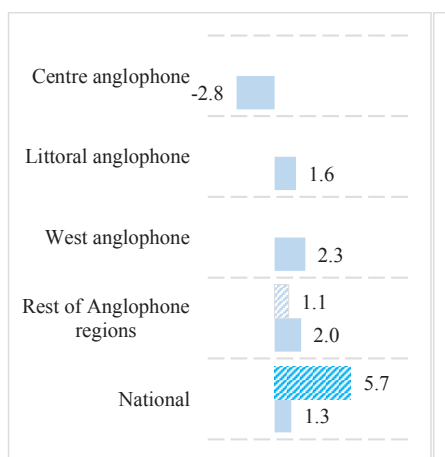
Graph 117: Average gap between the scores of pupils from a given school and pupils whose community involvement index is one unit lower, at the beginning of schooling - Mathematics

At the end of school, the average level of community involvement also positively influences performance in reading and mathematics for the Francophone population as a whole. This influence is not significant in mathematics, but it is in reading. At the stratum level, this influence is significant in Littoral in reading and in the Rest of Anglophone in both subjects. When the average class equipment index is taken into account, this link remains insignificant and negative in both subjects. At strata level, the link remains insignificant and negative in both subjects, except in the Rest of the English-speaking world stratum where it is positive.

Graph 118: Average gap between the scores of pupils from a given school and pupils whose community involvement index is one unit lower, at the beginning of schooling - Language
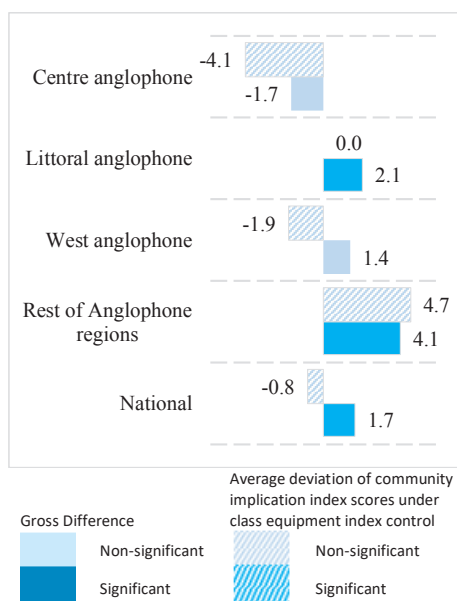
Graph 119: Average gap between the scores of pupils from a given school and pupils whose community involvement index is one unit lower, at the beginning of schooling - Mathematics
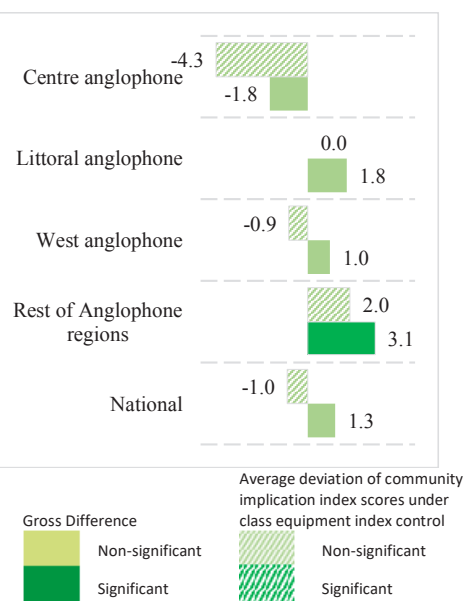
5.3.5 Land-use index

In the Anglophone subsystem, the West has the highest index of spatial planning at the beginning of schooling. The Anglophone stratum with the lowest level of spatial planning is the Rest of the Anglophone regions. The indicator of dispersion of results within a stratum (the standard deviation) shows that the degree of homogeneity in the distribution of land-use planning varies according to the stratum. Indeed, the Littoral shows the greatest disparity, while the Center shows less.

At the end of the school year, the average level of the spatial planning index for all the French-speaking strata in Cameroon is 56.8. This index is highest in the Rest of the Anglophone stratum. As at the beginning of the school year, the Center still has the lowest disparity. We also note that the strata with a high level of land use planning have the best allocations across the country.

Graph 120: Average level of indicator and standard deviation - School start
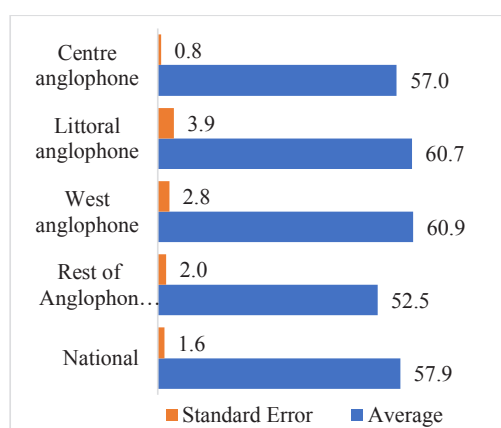
Graph 121: Average level of indicator and standard deviation - School end
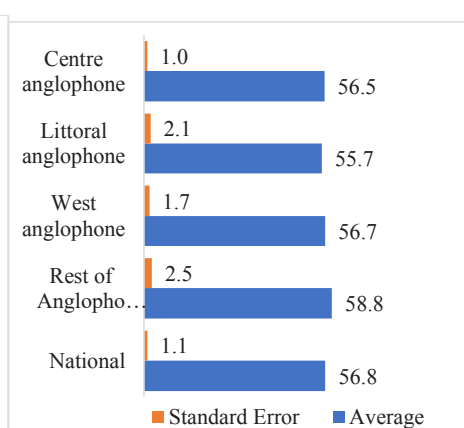
At the beginning of the primary cycle, the spatial planning index has a positive influence on pupils' performance in language and mathematics. The gross effect of land-use planning on pupil learning in both subjects is significantly positive at the national level and in the Western stratum. This relationship becomes insignificant in both subjects when controlling for the school infrastructure index.

Graph 122: Average gap between the scores of pupils in a given school and pupils whose indicator is one unit lower, at the beginning of schooling - Reading Figure
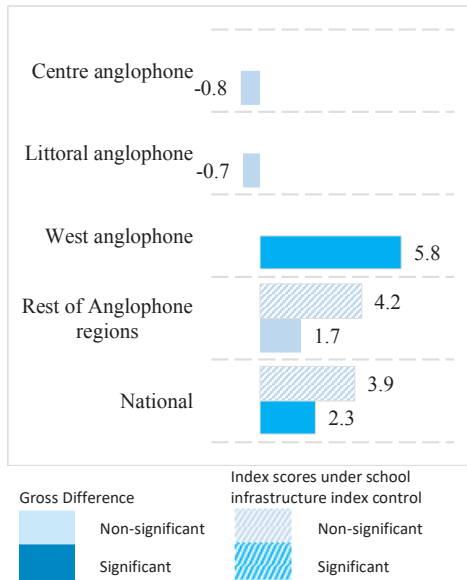
Graph 123: Average gap between the scores of pupils in a given school and pupils whose indicator is one unit lower, at the beginning of schooling - Mathematics
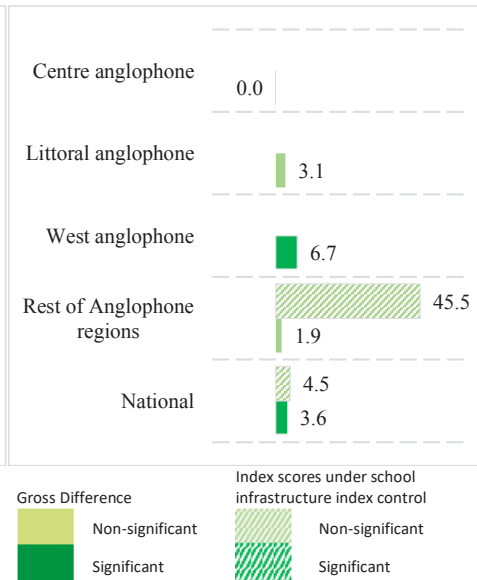
At the end of the primary cycle, the spatial planning index also has a positive influence on pupils' performance in language and mathematics. Similarly, the gross effect of land-use planning on pupils' learning in both subjects is significantly positive in the rest of Anglophone stratum in both subjects. This link remains significantly positive in both subjects when controlled for the school infrastructure index. This positive significance is only observed in the Rest of the Anglophone stratum. However, it is non-significant and negative in the Central stratum in both subjects.

Graph 124: Average gap between the scores of pupils in a given school and whose indicator is one unit lower, at the end of schooling - Language Graph
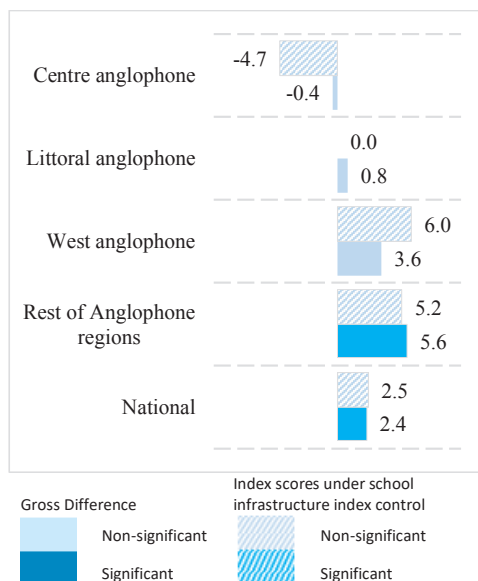
Graph 125: Average gap between the scores of pupils in a given school and pupils whose indicator is one unit lower, at the end of schooling - Mathematics
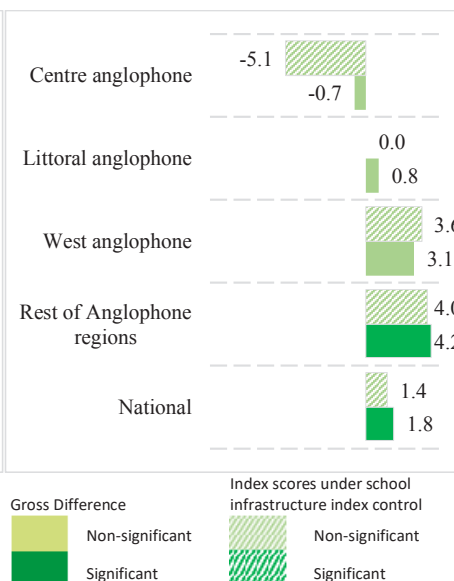
5.3.6. Textbooks and pupil performance

At the beginning of schooling in the Anglophone sub-system, all pupils share a reading textbook. This percentage is very high when one considers the positive effects of textbook ownership on improving pupil learning. This situation is observed in all the Anglophone strata.

Graph 126: Distribution of pupils according to the number of reading books per pupil at the beginning of school
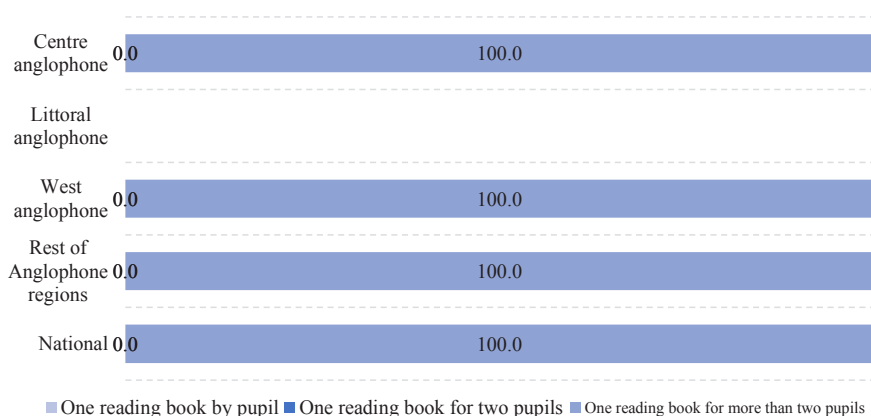
At the beginning of school, the differences in pupil performance according to the number of reading books per pupil are significant in favour of pupils in the situation of one reading book for more than two pupils. This is also only observed in the Rest of the Anglophone stratum.

Graph 127: Pupils' performance in reading and mathematics at the beginning of schooling according to the number of reading books per pupil
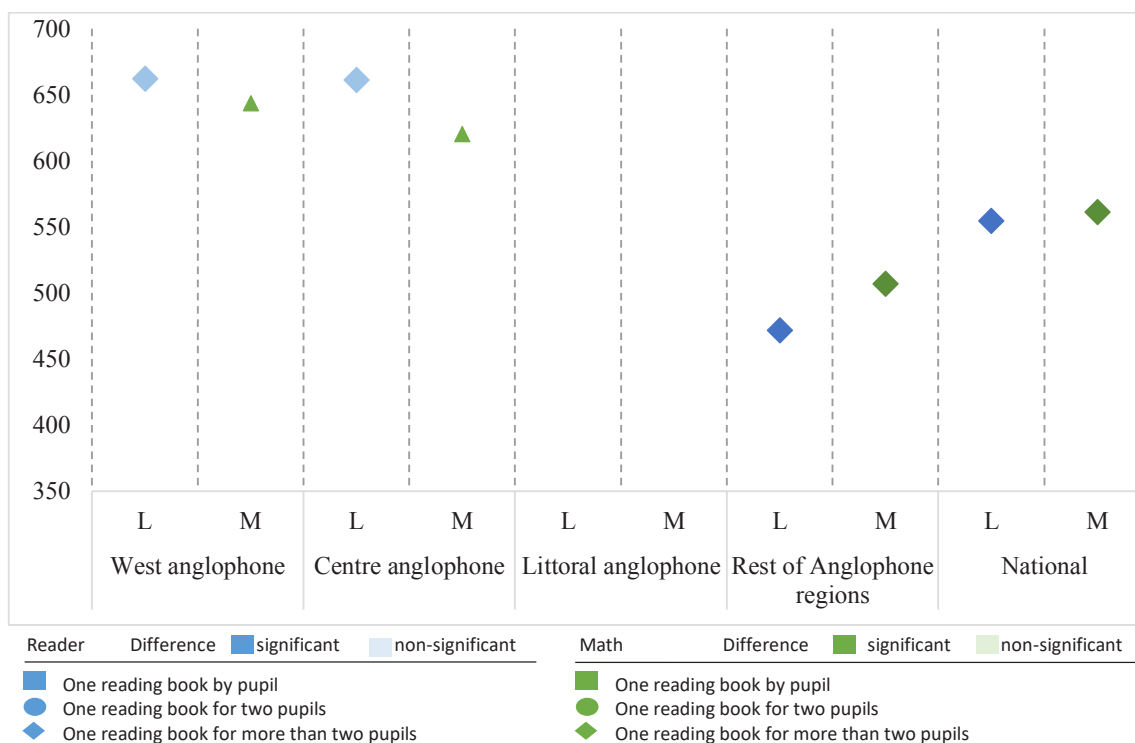
At the end of schooling in the Anglophone sub-system, almost all pupils share a reading textbook, particularly in the West (100%) and Littoral (100%).

Graph 128: Distribution of pupils according to the number of reading books per pupil at the end of schooling

Centre anglophone	0.0 3.9	96.1
Littoral anglophone	0.0 0.0	100.0
West anglophone	0.0 0.0	100.0
Rest of Anglophone regions	8.0 0.0	92.0
National	3.0 2.1	94.9

■ One reading book by pupil ■ One reading book for two pupils ■ One reading book for more than two pupils
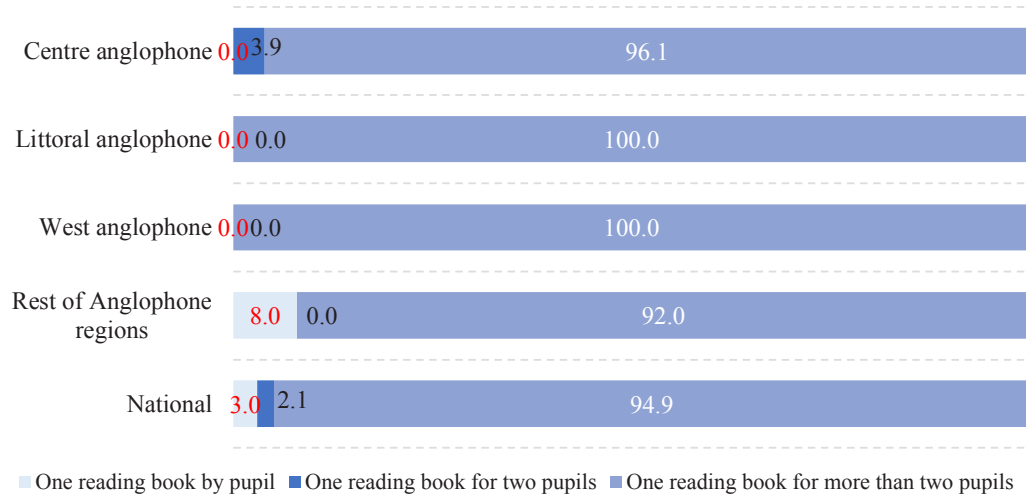
However, at the end of schooling, the differences in pupil performance according to the number of reading books per pupil are not significant.

Graph 129: Pupils' performance in reading and mathematics at the end of schooling according to the number of reading books per pupil

Reader   Difference ■ significant   ■ non-significant   Math   Difference ■ significant   ■ non-significant

■ One reading book by pupil
● One reading book for two pupils
◆ One reading book for more than two pupils

■ One reading book by pupil
● One reading book for two pupils
◆ One reading book for more than two pupils
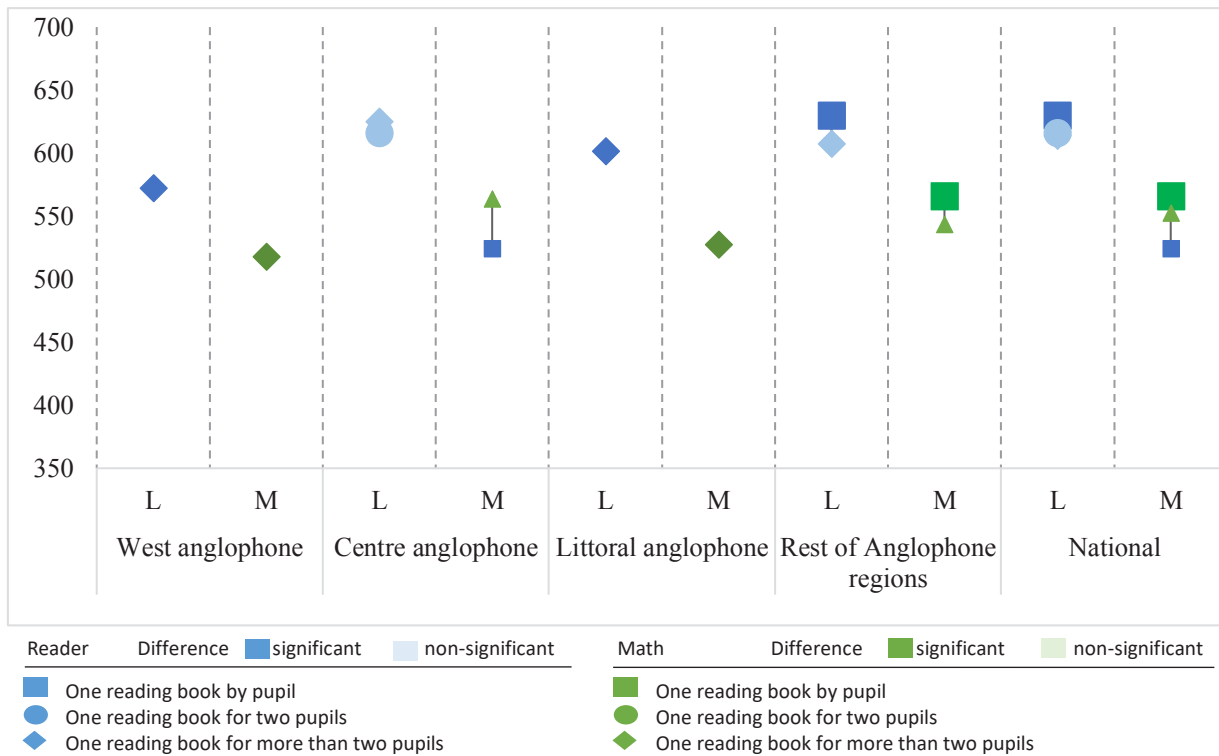
At the beginning of schooling in the English-speaking subsystem, all pupils share a mathematics textbook. This situation was also observed with the sharing of the reading book.

Graph 130: Distribution of pupils according to the number of mathematics textbooks per pupil at the beginning of schooling
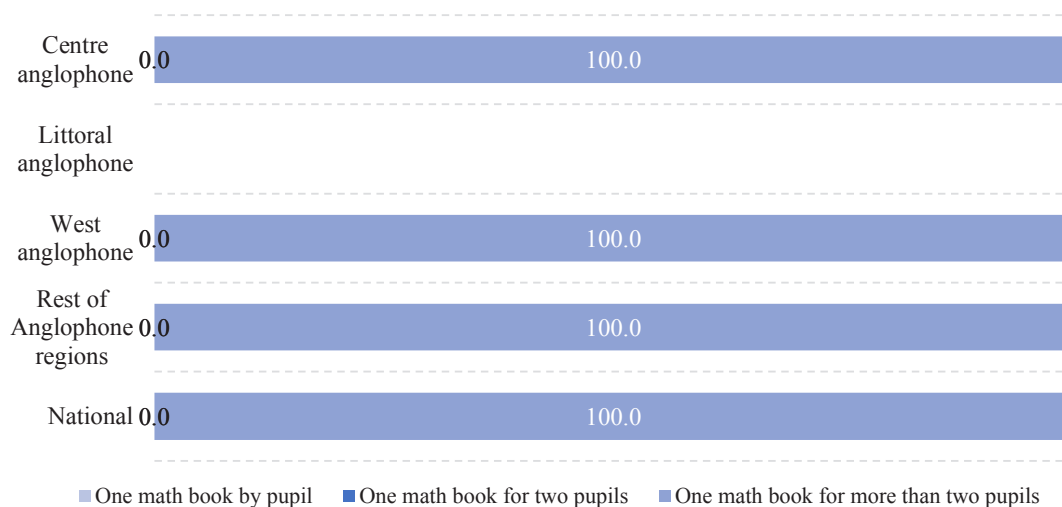
At the beginning of school, the differences in pupil performance according to the number of mathematics textbooks available per pupil are significant in favour of pupils in the situation of one reading textbook for more than two pupils. This was already the case according to the number of reading books per pupil. This is also the almost general observation that emerges at the level of the different strata.

Graph 131: Pupils' performance in reading and mathematics at the beginning of schooling, according to the number of mathematics textbooks per pupil
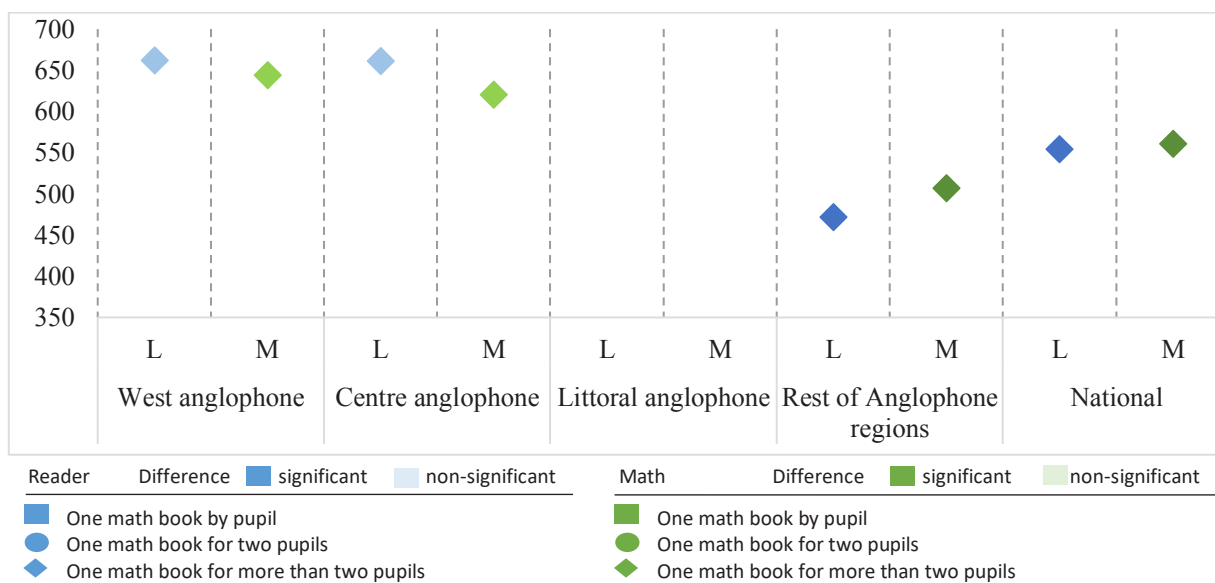
At the end of schooling in the English-speaking sub-system, almost all pupils also share a mathematics textbook, as was already the case with the reading textbook. This is the same for the different strata of the country.

Graph 132: Distribution of pupils according to the number of mathematics textbooks per pupil at the end of schooling
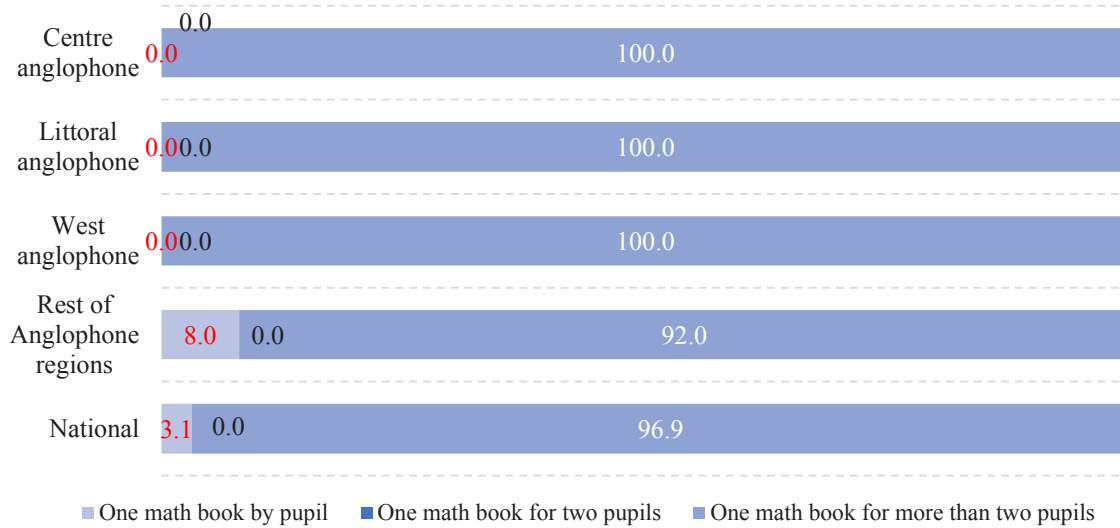
At the end of school, on the other hand, the differences in pupil performance according to the number of mathematics textbooks per pupil were insignificant in reading in favour of pupils in the situation of one reading textbook for every two pupils. But it is significant in mathematics.

Graph 133: Pupils' performance in reading and mathematics at the end of schooling according to the number of mathematics textbooks per pupil
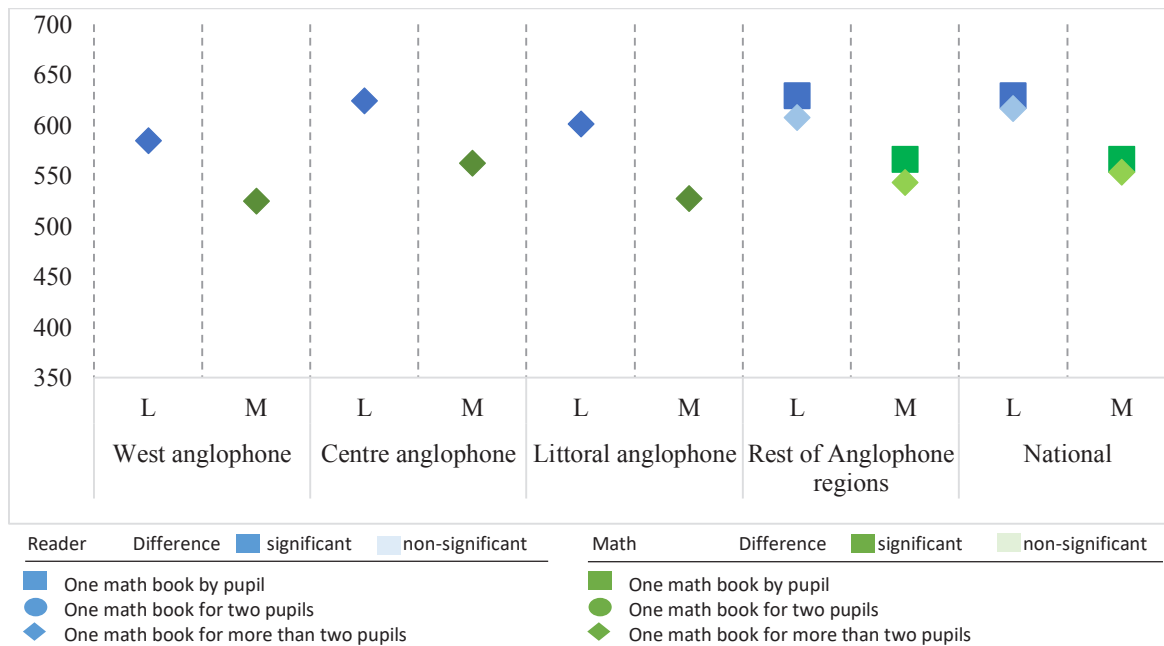
5.3.7. Class size and pupil performance

At the beginning of schooling in the Anglophone subsystem, the average class size is 135.6. The highest class size is observed in the Rest of Anglophone stratum, while the lowest is in the Center. The indicator of dispersion of results within a stratum (the standard deviation) shows that the degree of homogeneity in the distribution of class size varies according to the stratum. Indeed, the rest of Anglophone stratum shows the highest disparity. The disparity is zero in the Center stratum.

Graph 134: Average class size level and standard deviation - School start
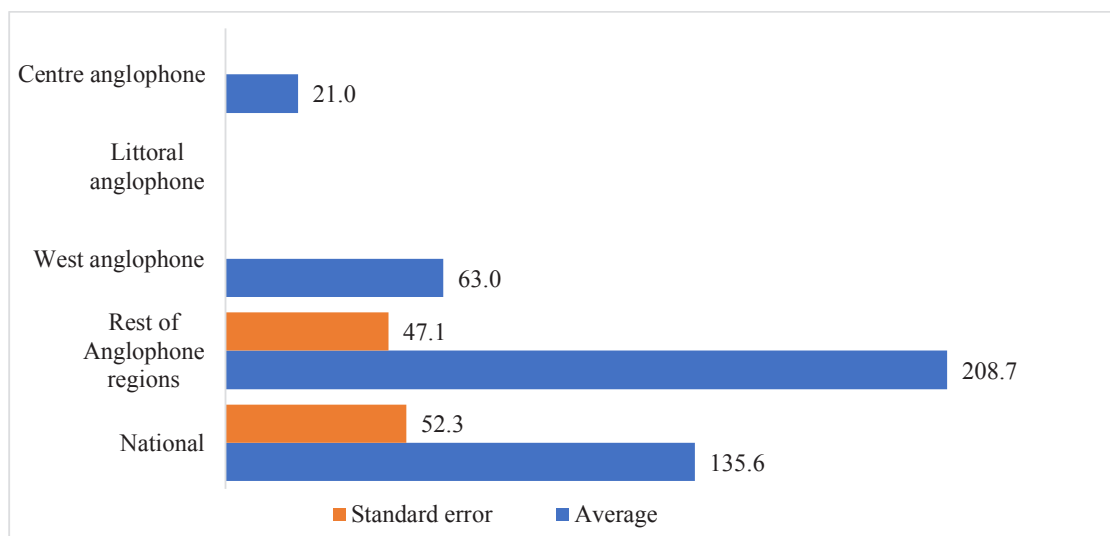
At the beginning of the primary cycle, class size has a negative influence on pupils' performance in language and mathematics. The raw effect of class size on pupils' learning in both subjects is particularly significant in reading and not significant in mathematics. At the level of the different Anglophone strata, this effect is non-significant and positive in the Rest of Anglophone stratum in both subjects. When controlling for the infrastructure index, the effect is significant and negative in both subjects.

Graph 135: Average difference between the scores of given pupils and pupils whose class size is one unit smaller, at the beginning of schooling-Reading
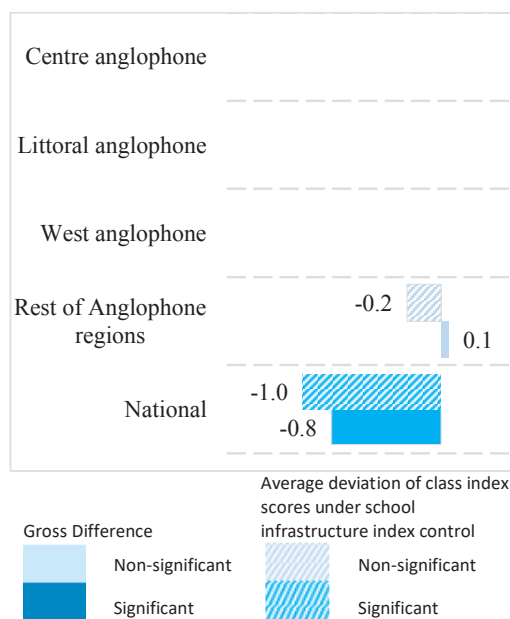
Graph 136: Average difference between the scores of given pupils and pupils whose class size is one unit smaller, at the beginning of schooling-Mathematics.
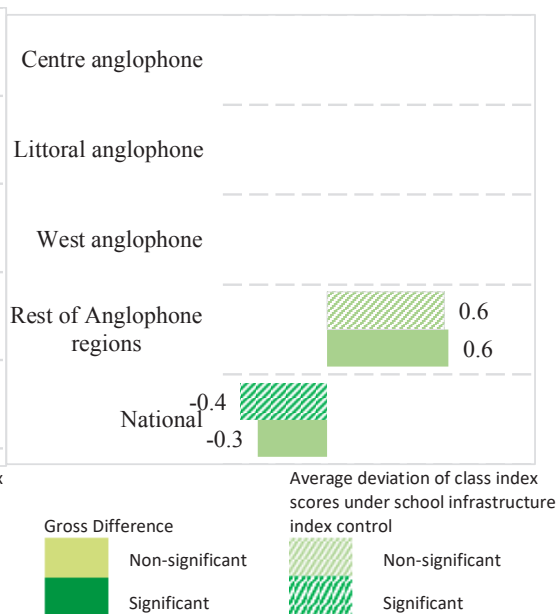
At the end of schooling in the Francophone subsystem, the average class size is 46.5. The highest class size is found in the Center stratum, while the lowest is found in the Littoral. The indicator of dispersion of results within a stratum (the standard deviation) shows that the degree of homogeneity in the distribution of class size varies according to the stratum. Indeed, the Center has the highest disparity, while the Littoral has the lowest, almost zero.

Graph 137: Average level of class size and standard deviation - School Leavers

At the end of the primary cycle, class size has a positive influence on pupils' performance in language and mathematics, although the gross effect of class size on pupils' learning in both subjects remains insignificant. At the level of the different Anglophone strata, this effect becomes positive in the West and the Center.

This link also remains non-significant and positive in both subjects when controlled for the school infrastructure index. At the strata level, this effect becomes significant and negative only in the rest of Anglophone stratum in reading.

Graph 138: Average gap between the scores of given pupils and pupils whose class size is one unit smaller, at the beginning of schooling - Language

Graph 139: Average gap between the scores of given pupils and pupils whose class size is one unit smaller, at the beginning of schooling - Mathematics

5.4. Characteristics of teachers and head teachers and pupil performance

Through the responses to the questionnaires submitted to the head teachers of the surveyed schools, the PASEC2019 evaluation was able to identify some characteristics of the head teachers that can contribute to understanding the context of pupils' acquisition of competences.

5.4.1. Gender

5.4.1.1.Gender of teachers

In the Anglophone sub-system, most pupils are taught in classrooms led by women at the beginning of schooling and by men at the end. Pupils taught by women perform better at the beginning of schooling and those taught by men perform better at the end.

The majority of the pupils surveyed at the beginning of the school year are taught in classrooms run by women, i.e. 58.6% on average. At the state level, the central and western regions have a situation where all pupils are taught by men. While in the Rest of the Anglophone regions, 73.2% of pupils are taught by a man.

Graph 140: Distribution of pupils by gender of the teacher at the beginning of school
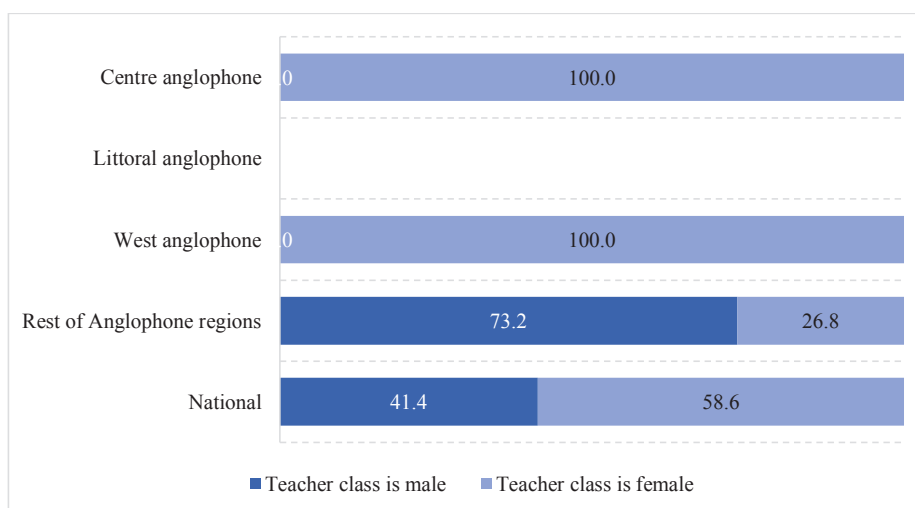
At the beginning of the school year, the average difference in performance in reading and mathematics between pupils with a female teacher and those with a male teacher is significant and is in favour of pupils taught by women. However, at the strata level, the difference is not significant, except in the Rest of the Anglophone stratum, in favour of pupils taught by men only in mathematics.

Graph 141: Pupils' performance in reading and mathematics at the beginning of schooling, by gender of the teacher
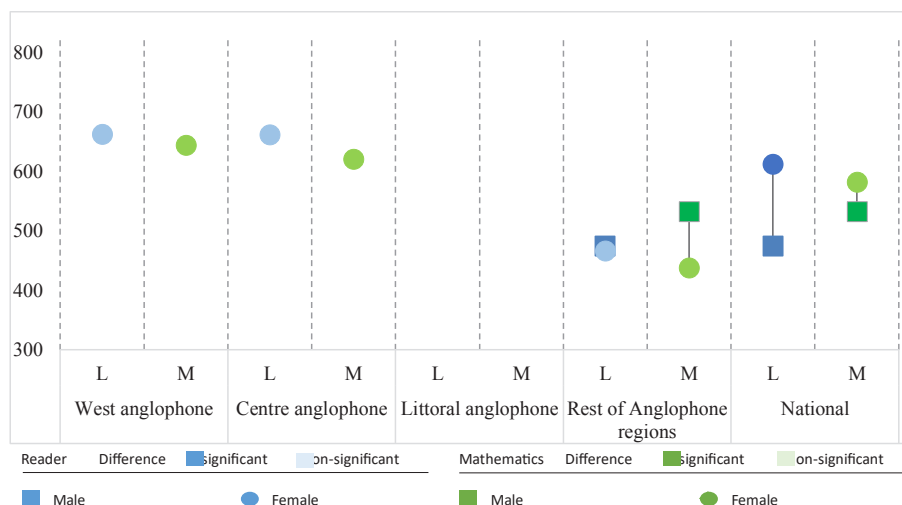
The majority of pupils surveyed at the end of their schooling are taught in classrooms run by men, an average of 86.1%. At the Stratum level, only the Littoral presents a situation where all pupils are supervised by men. Whereas in the Center (90%) and the Rest of the Anglophone Region (88.2%), pupils are more likely to be taught by women (74.5%).

Graph 142: Distribution of pupils by gender of the teacher at the end of school
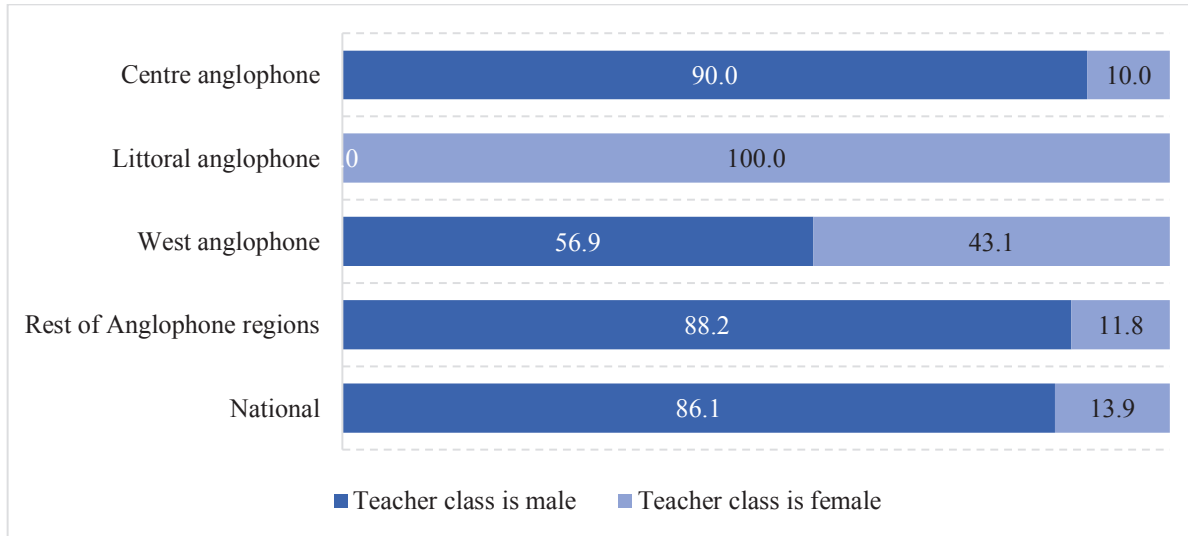
At the end of schooling, the average difference in performance in reading and mathematics between pupils with a female teacher and those with a male teacher is significant and is in favour of pupils taught by men, contrary to what was observed at the beginning of schooling. This difference is also significant in the West and in the Center, in favour of pupils taught by men.

Graph 143: Pupils' performance in reading and mathematics at the end of schooling by gender of the teacher at the end of schooling
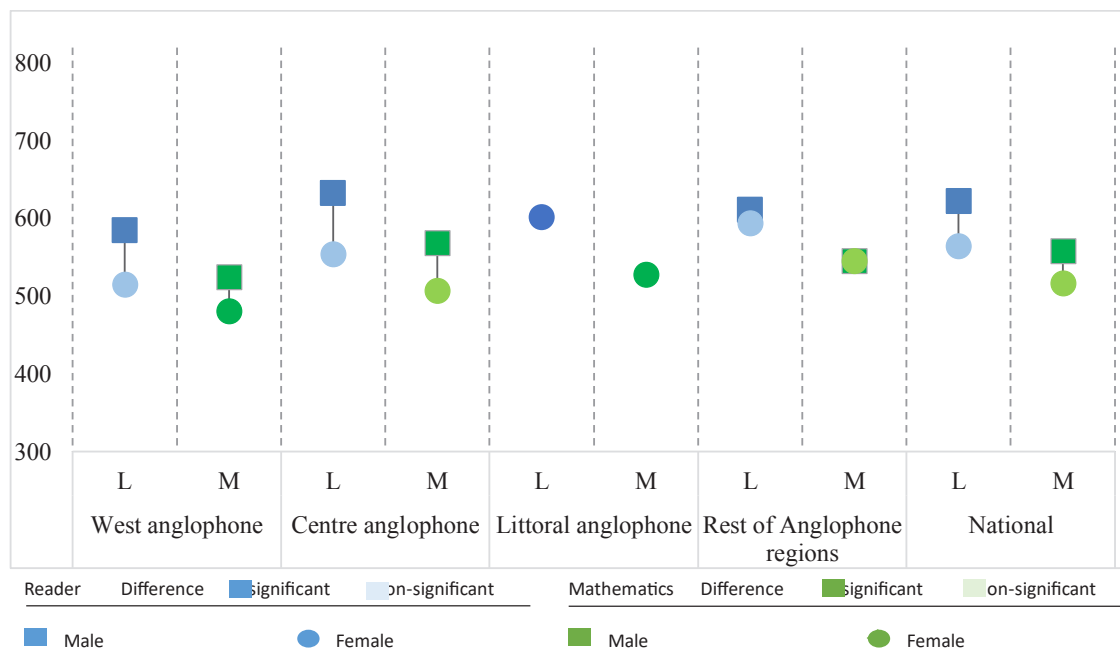
5.4.1.2. Gender of head teachers

On average, one out of every two pupils in the English-speaking subsystem is in a male-headed school. However, pupils attending a female-headed school perform better.

The majority of pupils surveyed at the beginning of their schooling attend schools run by men, 61% on average. At the stratum level, only the West presents a different situation, with one in four pupils attending male-led schools. In the rest of the strata, the situation is the same as the national average.

Graph 144: Distribution of pupils by gender of head teacher
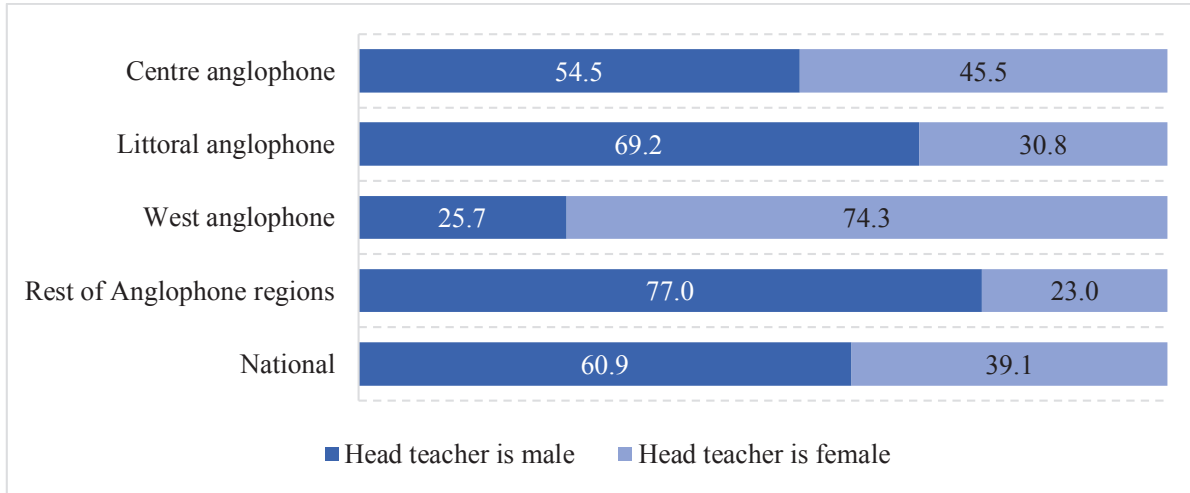
At the beginning of the school year, the average difference in performance in reading and mathematics between pupils with a female head teacher and those with a male head teacher is significant and is in favour of pupils in female-headed schools. At strata level, this difference is significant in two strata (Littoral and West) in both subjects, also in favour of pupils with a female head teacher.

Graph 145: Pupils' performance in reading and mathematics at the beginning of schooling, according to the gender of the head teacher
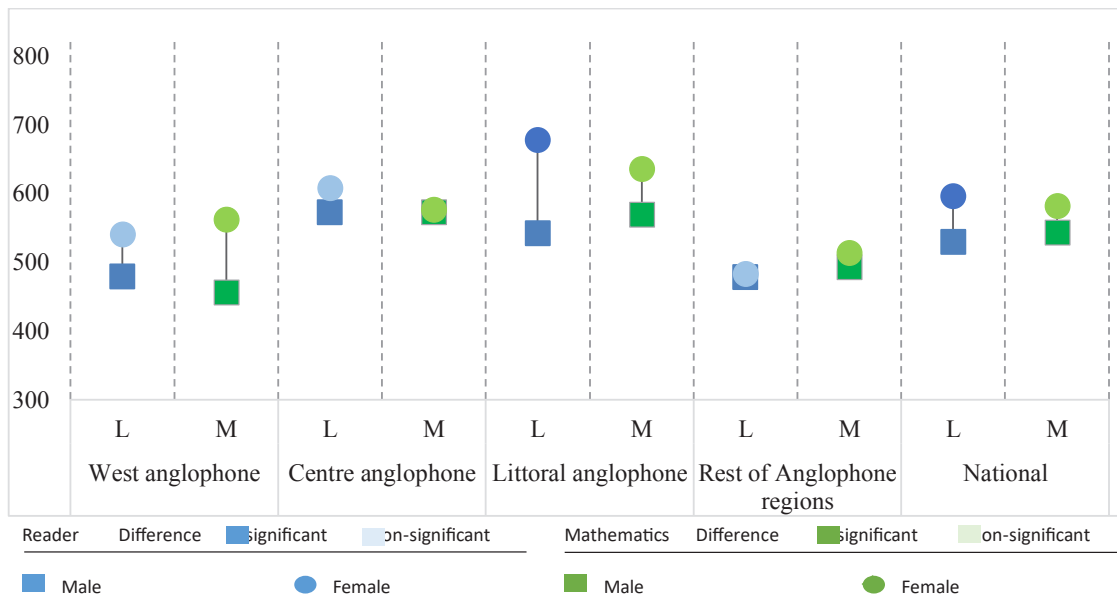
More than half of the school leavers attend male-led schools as well, with an average of 54.5%. At the stratum level, only the Center and the West present a different situation with less than half of the pupils attending schools run by men

Graph 146: Distribution of pupils by gender of head teacher
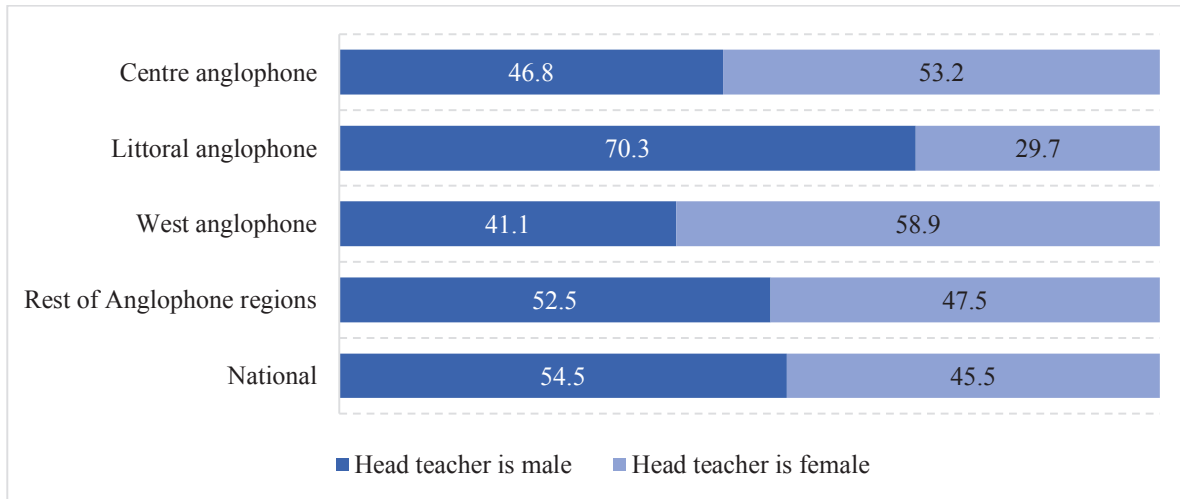
At the end of schooling, the average difference in performance in reading and mathematics between pupils with a female head teacher and those with a male head teacher is significant and is in favour of pupils in female-headed schools, as it was at the beginning of schooling. This difference is also significant in all strata of the Anglophone sub-system in favour of pupils in female-headed schools, except in Littoral.

Graph 147: Pupils' performance in reading and mathematics at the end of schooling, according to the gender of the head teacher
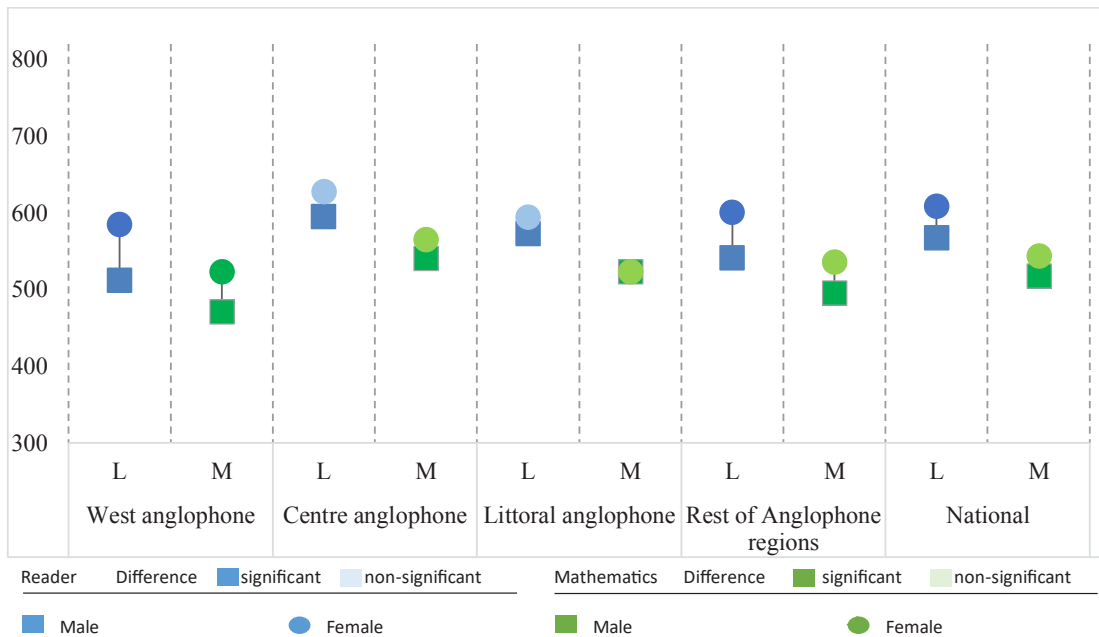
5.4.2. Seniority

5.4.2.1. Seniority of teachers

One in three pupils is taught by a teacher with less than five years' experience.

At the beginning of the school year, 22.8% of pupils are taught by teachers with five years of experience or less; and 77.2% of pupils are taught by teachers have between eleven and twenty years of experience. The Central stratum appears to have the highest proportion of pupils (100%) attending schools with the least experienced teachers. The Western stratum (100%) and the Rest of Anglophone (100%) are the only strata whose teachers have more than five years' experience.

Graph 148: Distribution of pupils by teacher seniority at the start of schooling
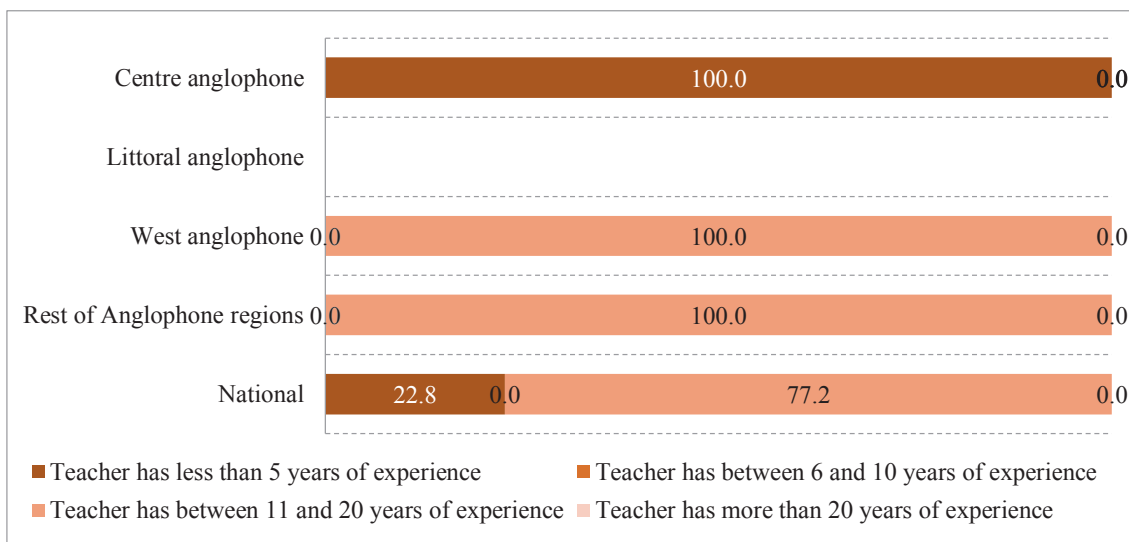
The performance gap of pupils at the beginning of schooling according to the seniority of the teacher is in favour of pupils taught by teachers with less than 5 years of experience. This shows that teacher experience does not have a significant effect on pupil performance.

Graph 149: Pupils' performance in reading and mathematics at the beginning of schooling, by teacher seniority
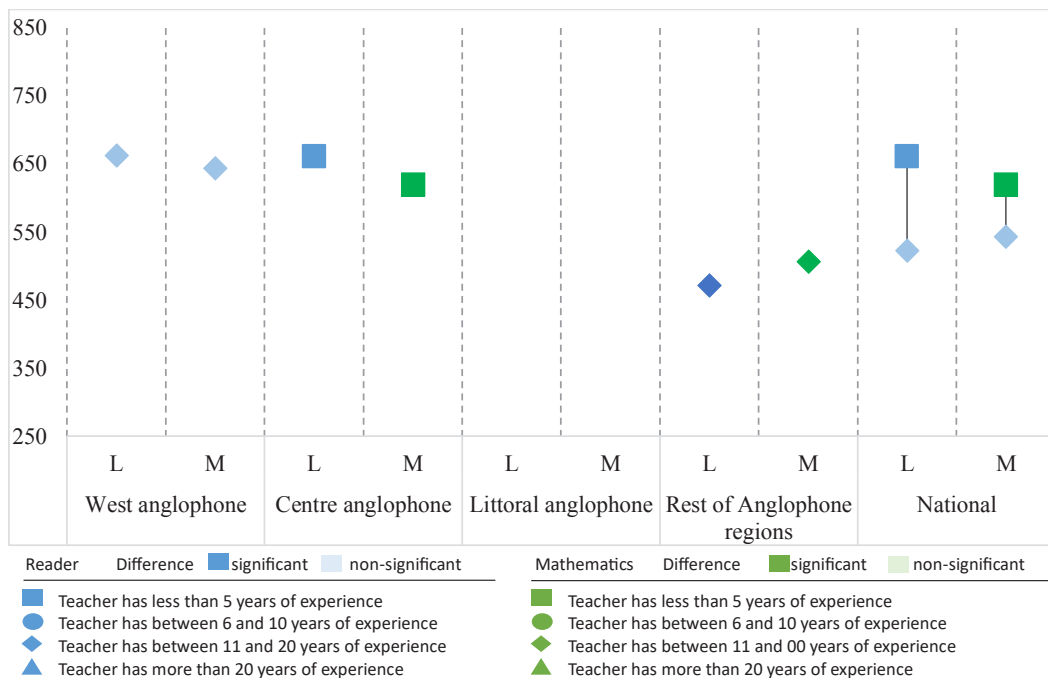
At the end of the school year, 42.4% of pupils attend classrooms where the teachers have no more than five years' experience; 11.4% of pupils taught by the teachers have between six and ten years' experience; and 46.2% of pupils taught by the teachers have between eleven and twenty years' experience. Littoral is the stratum (100%) with the highest proportion of pupils attending classrooms headed by the least experienced teachers. It is followed by the Rest of the Anglophone stratum (76.6%) and the West (63.7%). The Center has the highest proportion of pupils whose schools have teachers with more than five years of experience.

Graph 150: Distribution of pupils by teacher seniority at the end of schooling
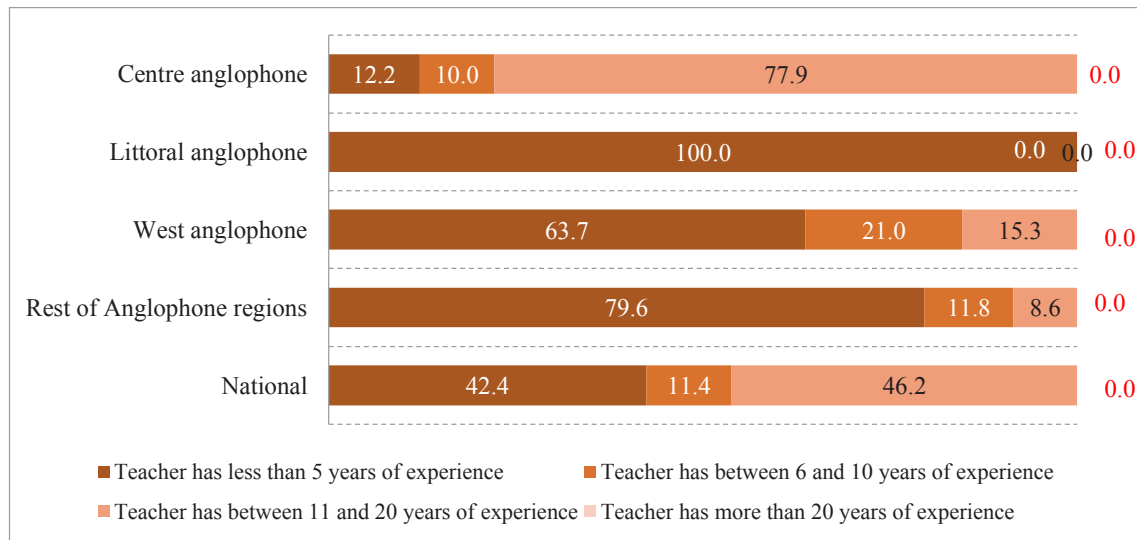
It can be seen that the performance gap of school leavers according to teacher seniority is in favour of pupils taught by teachers with between 11 and 20 years of experience. This situation is also observed in the Center stratum.

Graph 151: Pupils' performance in reading and mathematics at the end of schooling, according to the seniority of the teacher
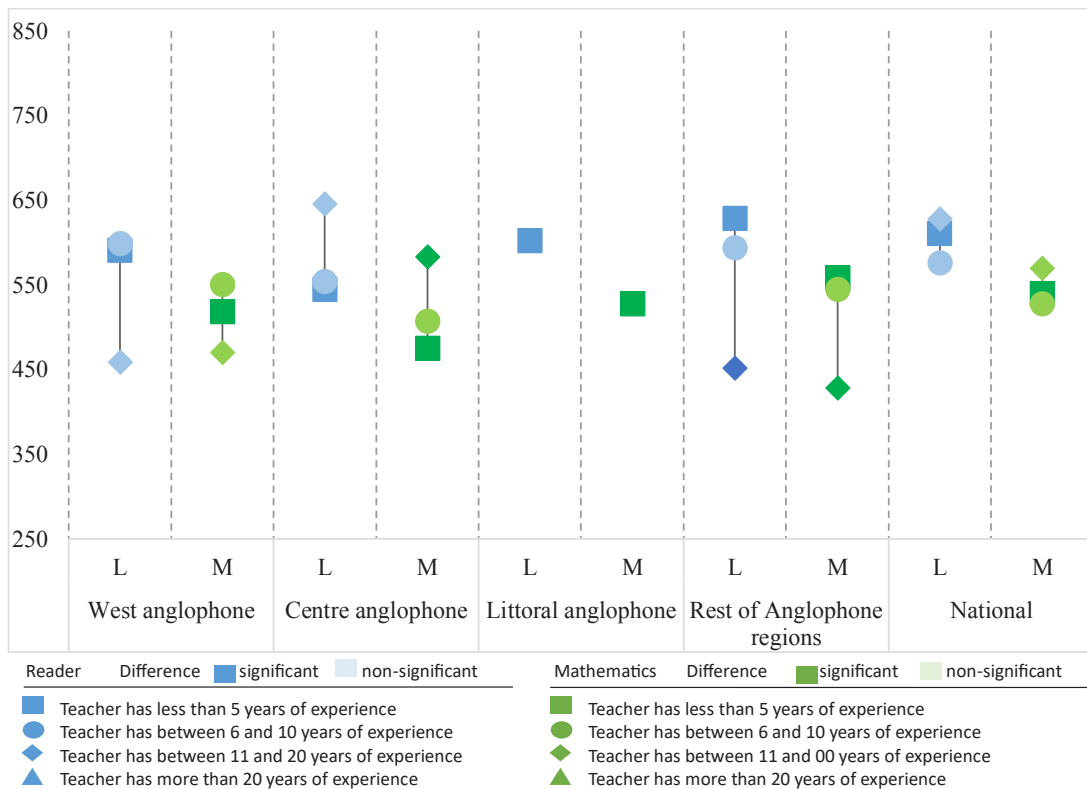
5.4.2.2. Seniority of head teachers

On average, three out of five pupils attend schools where the head teacher has been in the job for five years or less.

At the beginning of the school year, 53.6% of pupils attend schools where the head teacher has no more than five years' experience in this function; 29.2% in schools where the head teacher has between six and ten years' experience; and 12.2% belong the schools where the head teacher has between eleven and twenty years' experience and 5% attend schools where the head teacher has more than twenty years' experience. The Center (73.8%) and the West (60%) appear to be the strata with the highest proportion of pupils attending schools headed by the least experienced head teachers. The Littoral (60.2%), and the Rest of Anglophone (62.3%) have the highest proportions of pupils whose schools are headed by head teachers with more than five years' experience.

Graph 152: Distribution of pupils by number of years of experience of the head teacher at the beginning of school
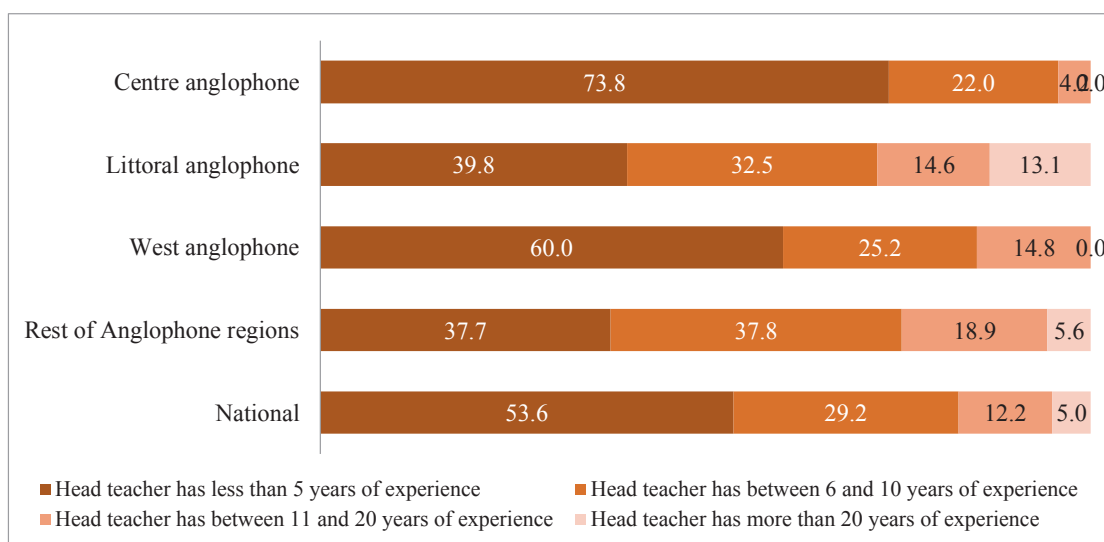
We can see that the gap in pupil performance at the beginning of schooling according to the seniority of the head teacher is in favour of pupils attending schools headed by head teachers with 5 years of experience or less.

Graph 153: Pupils' performance in reading and mathematics at the beginning of schooling according to the number of years of experience of the head teacher at the beginning of schooling
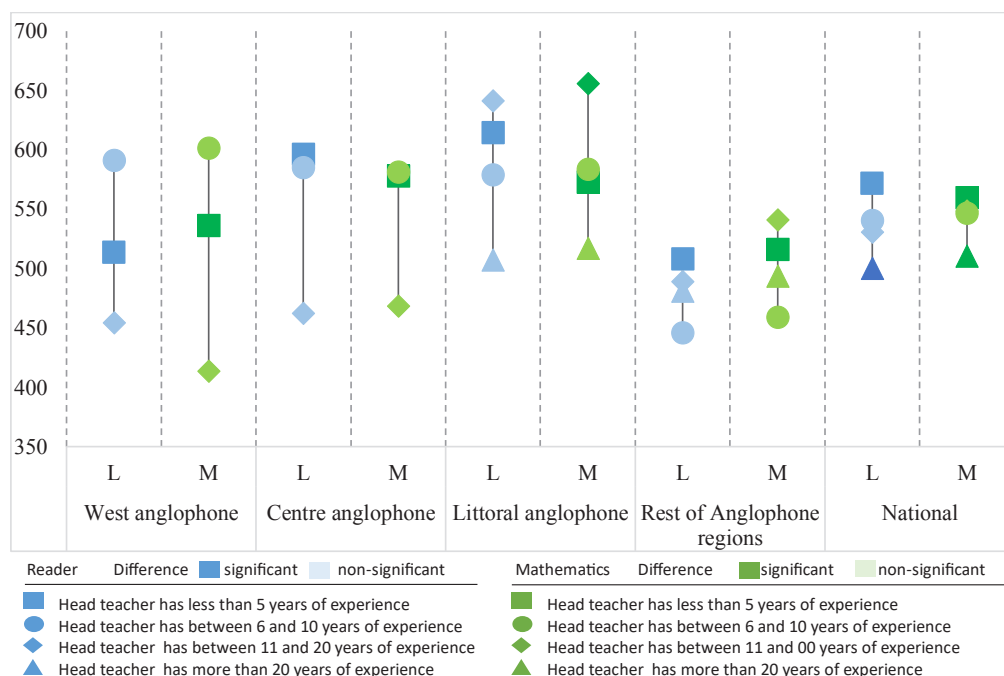
At the end of the schooling, 63.3% of the pupils attend schools where the head teachers have no more than five years of experience in this function; 20.1% of the pupils belong the schools where the head teachers have between six and ten years of experience; and 12.8% of the pupils have the head teachers have between eleven and twenty years of experience and 3.7% of pupils attend the schools where the head teachers have more than twenty years of experience. As was already the case at the beginning of the school year, at the end of the school year the Center (81.2%) and the East (75.8%) appear to be the strata with the highest proportion of pupils attending schools headed by the least experienced head teachers. The Littoral (59.4%) is the stratum with the highest proportion of pupils whose school is headed by a head teacher with more than five years' experience.

Graph 154: Distribution of pupils by number of years of experience of the school head teacher at the end of the school year
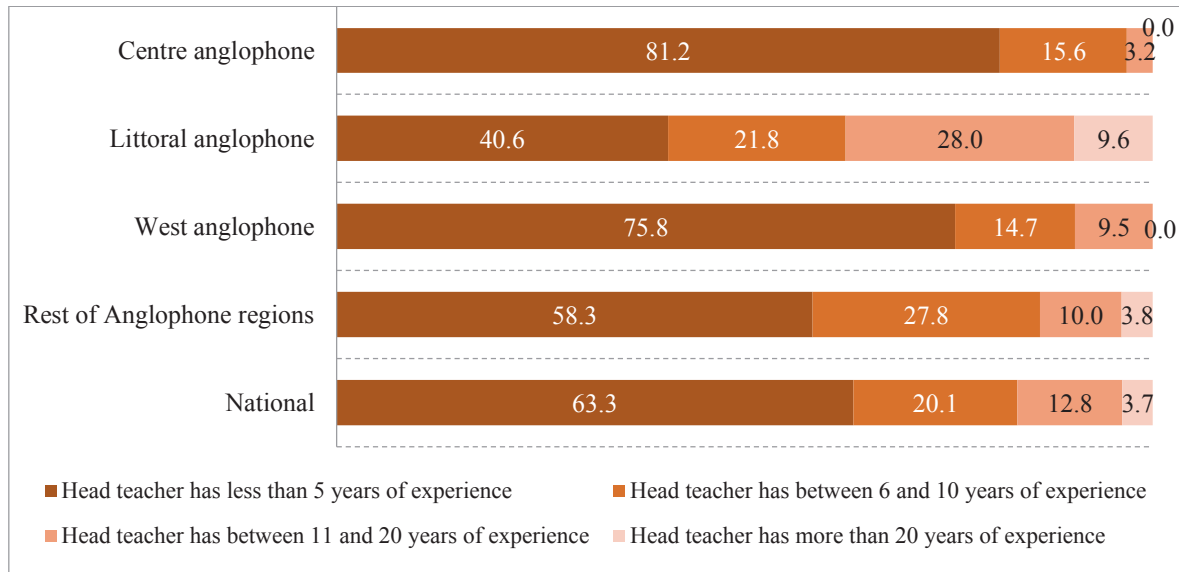
The difference in pupil performance at the end of schooling according to the seniority of the head teacher is very small and is not significant regardless of the seniority of the school head teacher.

Graph 155: Pupils' performance in reading and mathematics at the end of schooling according to the number of years of experience of the school head teacher at the end of schooling
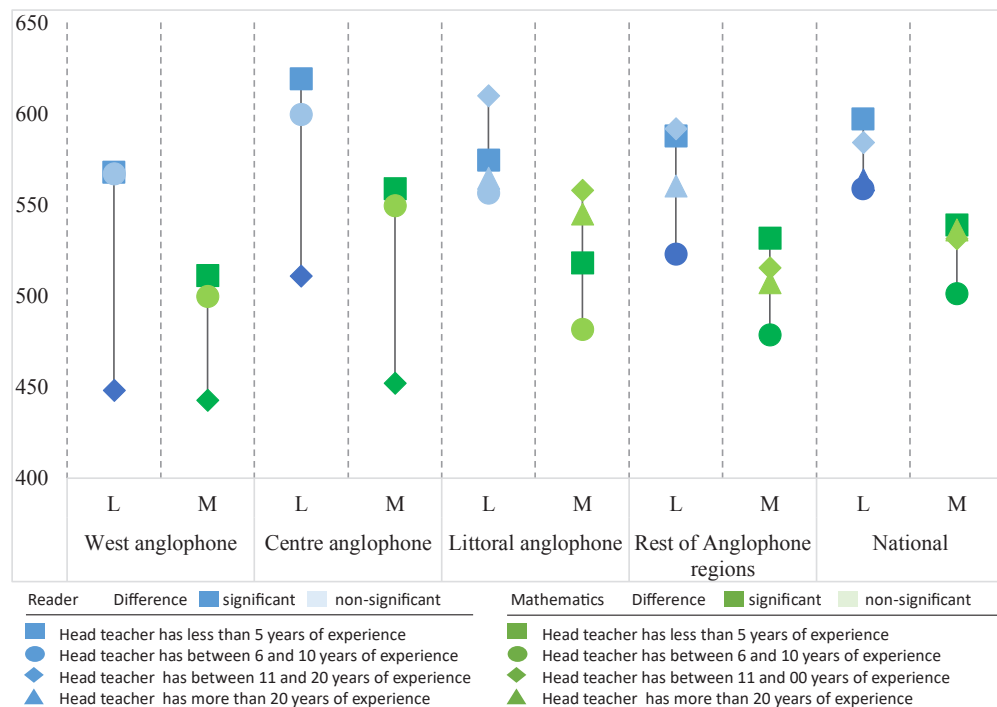
5.4.3. Level of education and training

5.4.3.1. Academic level of teachers

About two out of three pupils at the beginning and end of school are taught by a teacher with a university education.

At the beginning of schooling, one in five pupils have a teacher with primary or secondary education in the English-speaking sub-system. The percentage of pupils whose teacher has a university education is higher in the West (100%) and in the Rest of the Anglophone regions (100%). While in the Central stratum (100%), the pupils assessed are taught by a teacher with primary or secondary education.

Graph 156: Distribution of pupils according to the level of education of the teacher at the beginning of school
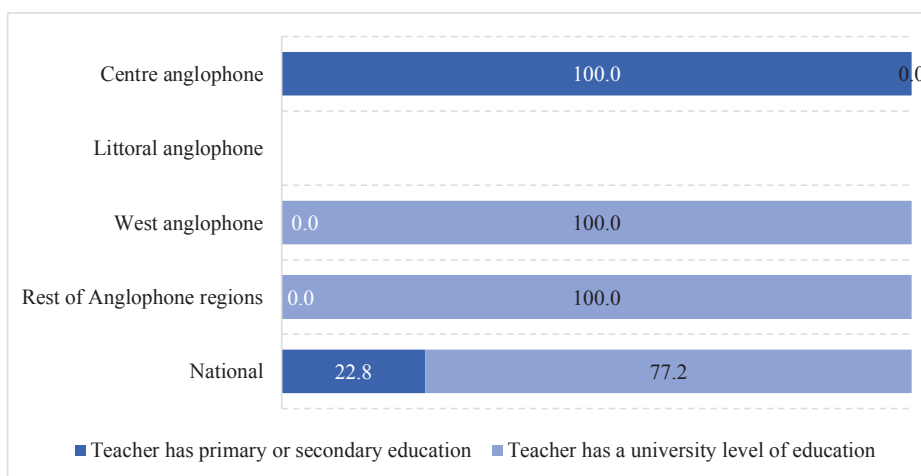
The performance gap at the beginning of schooling between pupils taught by a teacher with a primary or secondary level and those whose teacher has a university level is in favour of those with a primary or secondary level in both subjects.

Graph 157: Pupils' performance in reading and mathematics at the beginning of schooling according to the educational level of the teacher
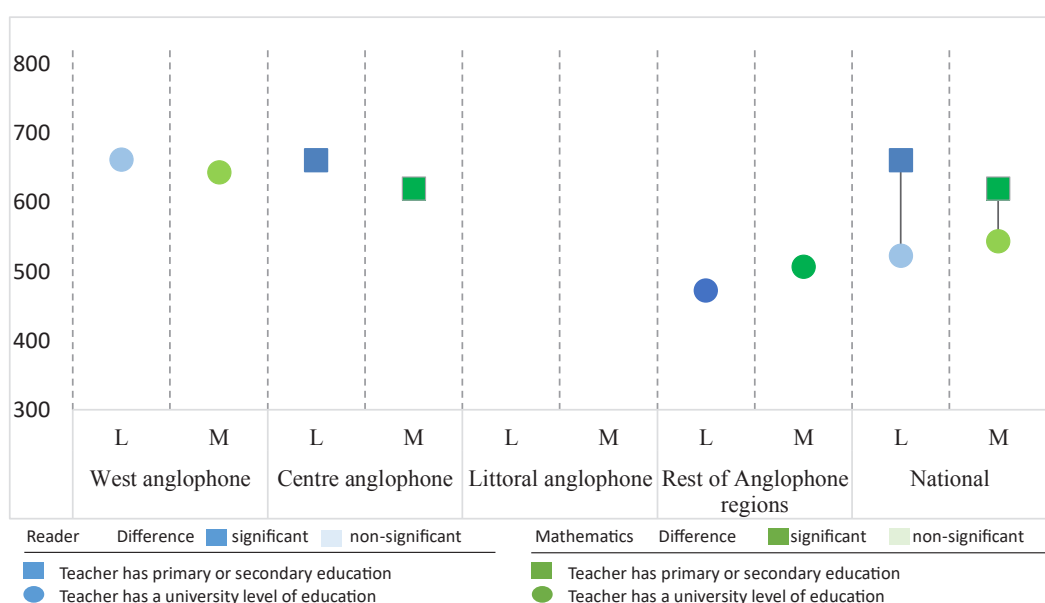
At the end of the school year, 8.5% of pupils have a teacher with primary or secondary education in the Anglophone subsystem. The percentage of pupils whose teacher has a university education is higher in the Rest of Anglophone stratum (100%).

Graph 158: Distribution of pupils by level of education of the teacher at the end of schooling
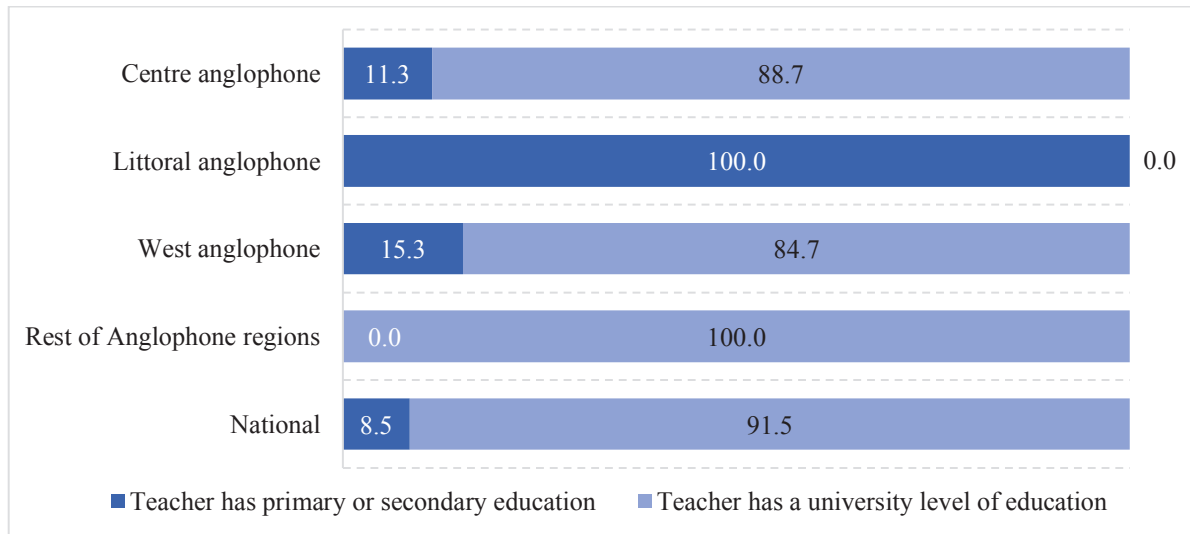
However, at the end of schooling and in both disciplines, on the other hand, the gap in performance between pupils taught by a teacher with a primary or secondary level and those whose teacher has a secondary level is in favour of those with a university level in both subjects. This situation is also observed in the Western and Central strata.

Graph 159: Pupils' performance in reading and mathematics at the end of schooling according to the educational level of the teacher at the end of schooling
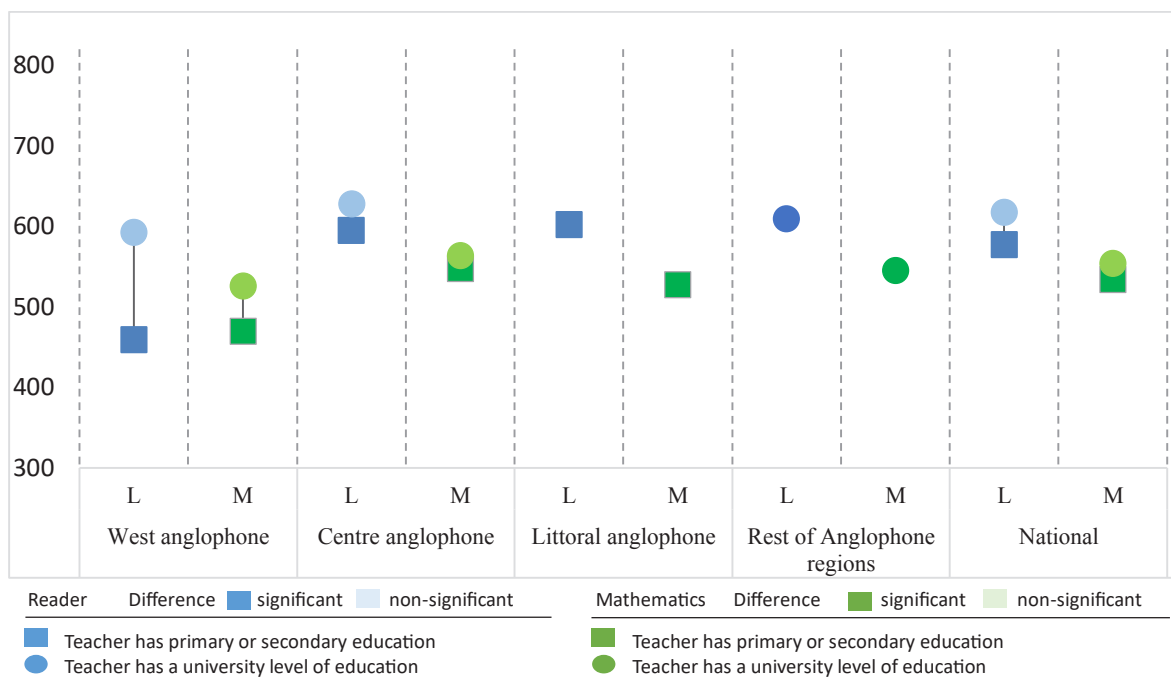
5.4.3.2. Academic level of head teachers

Only one out of three pupils at the beginning and end of their schooling attends a school whose head teacher has a primary or secondary education.

At the beginning of schooling in the Anglophone subsystem, 16% of pupils attend a school whose head teacher has a primary or secondary education. The percentage of pupils attending a school whose head teacher has a university education is higher in the Center (90.6%), the Littoral (90%) and the Rest of the Anglophone regions (90.9%).

Graph 160: Distribution of pupils by level of education of the head teacher
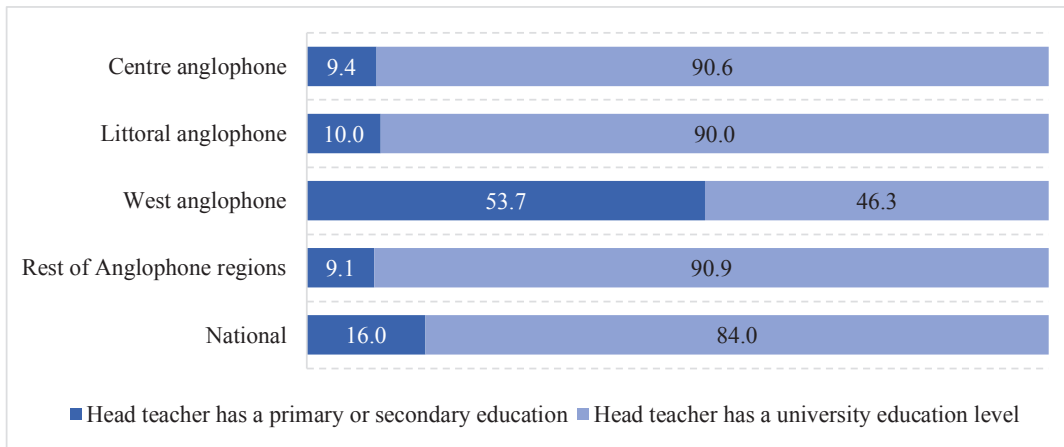
The performance gap at the beginning of schooling in both disciplines between pupils attending a school whose head teacher has a primary or secondary level and those whose head teacher has a university level is in favour of those whose head teacher has a university level. Moreover, this situation observed on the Anglophone national average also emerges in the Littoral and Center strata (Reading only). However, the gap is in favour of pupils attending a school whose head teacher has primary or secondary level in the Rest of Anglophone stratum.

Graph 161: Pupils' performance in reading and mathematics at the beginning of schooling, according to the educational level of the head teacher
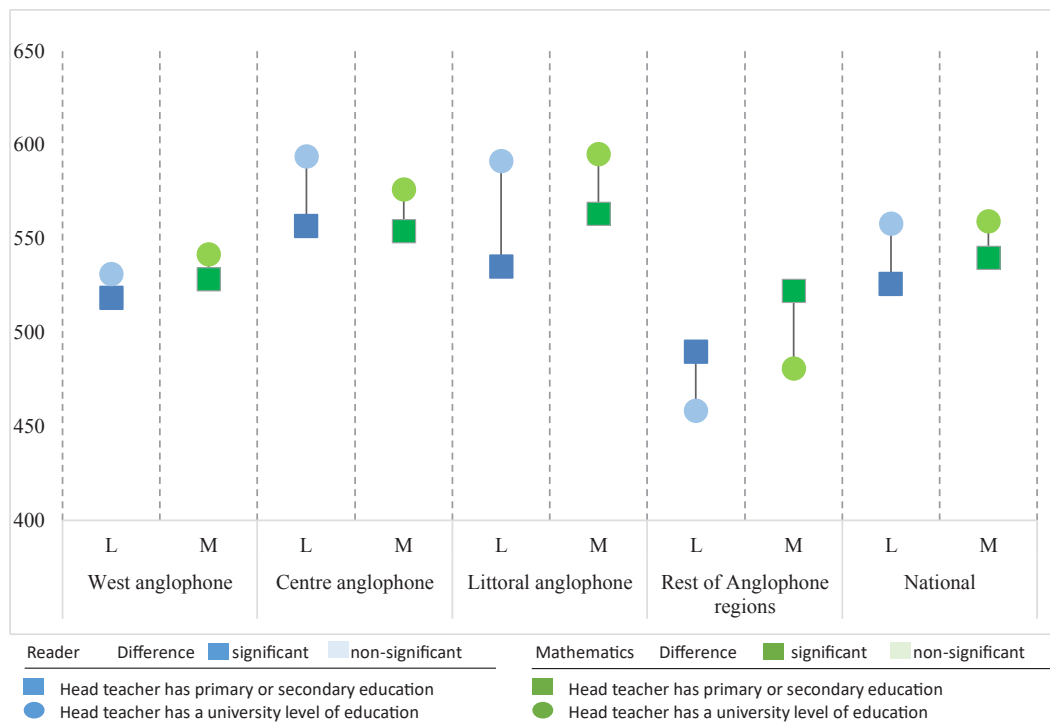
At the end of schooling in the Anglophone sub-system, one in five pupils attend a school whose head teacher has a primary or secondary education. The percentage of pupils attending a school whose head teacher has a university education is higher in the Rest of the Anglophone regions (83.2%) and the Center (82.6%).

Graph 162: Distribution of pupils by level of education of the head teacher
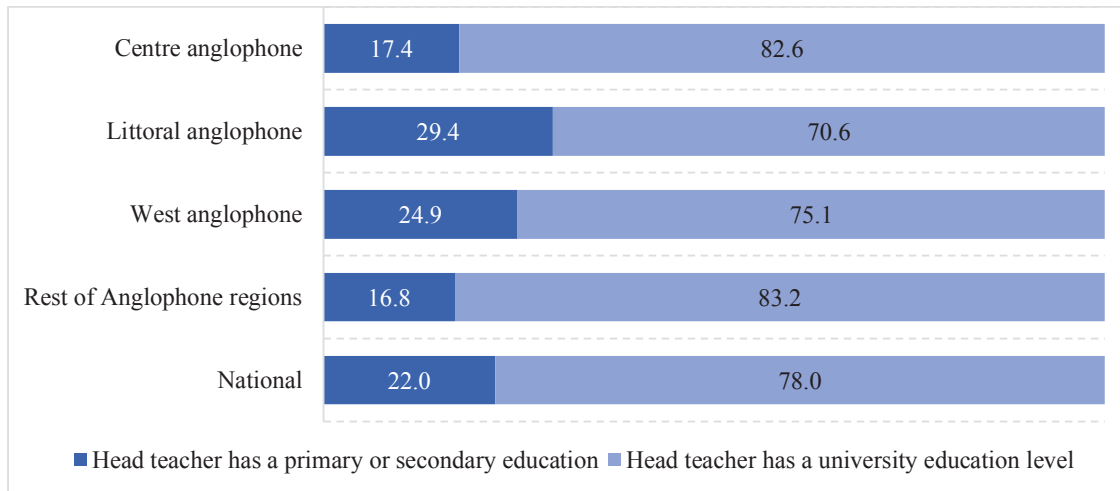
As regards the performance gap at the beginning of schooling between pupils attending a school whose head teacher has a primary or secondary level and those whose head teacher has a university level, it is in favour of pupils attending a school whose head teacher has a primary or secondary level. This situation is also observed in the Littoral stratum.

Graph 163: Pupils' performance in reading and mathematics at the end of schooling, according to the level of education of the head teacher
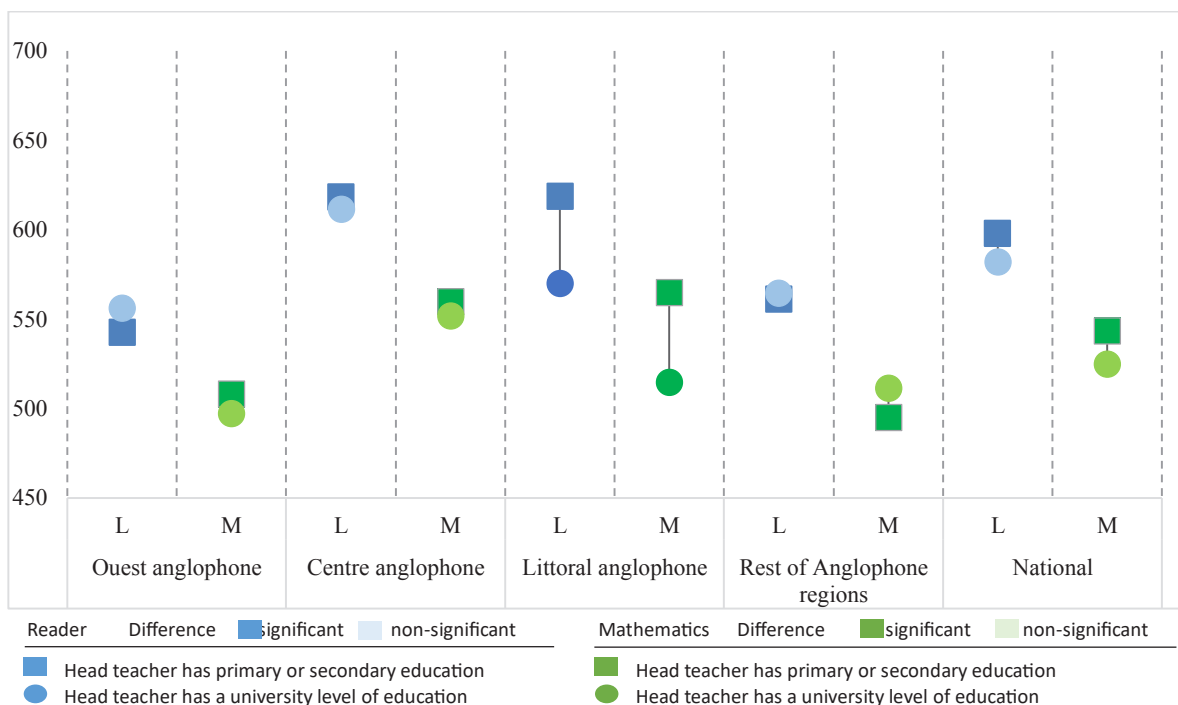
In conclusion, it is important to point out that Cameroon, like most governments and countries, has committed itself to the new vision of education for the 2030 horizon, which is "to ensure inclusive and equitable quality education and lifelong learning for all". Through the PASEC evaluation, Cameroon has positioned itself as a major actor in this new paradigm of education through the evaluation of pupils' learning achievements and in order to shed light on the main determinants that influence children's learning. This chapter analysed the performance of pupils by relating it to some of their characteristics (socio-economic, family, educational background, etc.) and characteristics of the school environment. The aim was to study the factors that explain pupils' scores and the elements associated with the inequity of education systems. Thus, a review of the multiple factors that can explain pupils' school performance leads to the identification of the most important ones.

The school environment is still an important factor in explaining the performance of pupils in the Anglophone sub-system. Thus, Cameroon would benefit from strengthening policies aimed at reinforcing infrastructure (class-rooms, canteens, latrines) and equipment in schools, as well as a better geographical distribution.

As in 2014, pre-schooling remains a key factor in improving pupil performance. Given the low access to pre-schooling in Cameroon, pre-schooling should be a priority for the country's next education and training sector strategy. This will make it possible to achieve objective 4.1 of the 2030 Agenda, which is to offer all children a year of compulsory pre-primary education.

The proportions of repeaters are still high in the Anglophone sub-system in Cameroon and raise questions about the internal efficiency of the Cameroonian education system. Moreover, repetition does not allow repeaters to catch up with non-repeaters, which raises the question of the follow-up of pupils in difficulty in schools. It is therefore important to set up a system for monitoring pupils in difficulty in schools.

A school feeding policy through the establishment of school canteens should also be a lever for the government in improving pupil performance. It would be important to define a policy oriented towards the involvement of the communities for a better appropriation.

The possession of books by pupils should be a major issue for the Cameroonian government. Indeed, the possession of books by pupils at home and at school has been shown to be an important determinant of improved pupil performance. The policy of free access to essential reading and mathematics textbooks by pupils should be reinforced.

The education system should take greater account of community involvement in the formulation of education policies with a view to improving pupil performance, particularly in the public sector, in order to ensure quality education at all levels of education.

5

CHAPITRE 6

COMPETENCES AND CHARACTERISTICS OF THE TEACHERS SURVEYED IN THE ANGLOPHONE SUBSYSTEM OF CAMEROON

This chapter discusses the analysis of the survey data from the questionnaire sent to teachers in the English-speaking subsystem during the PASEC2019 evaluation. It attempts to classify teachers according to their level of knowledge and skills and to analyse the influence of teacher characteristics.

First of all, it is important to recall that Hattie (2009); Lessard et al. (2006) have attested through their educational research to the fundamental role of the relationship between the teacher and the learners. According to Frediksen and Rhodes (2004), this relationship is able to influence on the one hand the learner's connections with his or her school and on the other hand the learner's academic performance and sense of well-being. Fortin et al (2006) pointed out that the greatest benefits of a good teacher-pupil relationship are found among pupils at risk of dropping out. Conversely, a negative teacher-pupil relationship could be a factor in dropouts (Lessard et al. 2006). Given the fundamental role that teachers play in improving pupil learning, they are one of the essential pillars of education systems. Their effectiveness is the most important factor in the pupil learning process (UNESCO, 2014b; Bold et al. 2017). Thus, it is essential to consider teachers as one of the most important resources in schools, such as the leadership of head teachers, funding (Isabelle, Gélinas-Proulx and Meunier (2015). This is why it is strongly recommended that education systems have sufficient quality teachers. Thus, in the framework of the Sustainable Development Goals (SDG4), increasing the number of qualified teachers in the education systems of developing countries has been identified as one of the means to be implemented to ensure inclusive quality education for all by 2030.

It should be noted that the questionnaire sent to teachers focused on their personal characteristics, their perceptions and the measurement of their knowledge. This last dimension was added to the first ones, which were already captured in the PASEC2014 survey, with a view to shedding light on teachers' training needs.

The table below gives details of the three dimensions selected in the teacher questionnaire.

Table 32 : The three dimensions of the PASEC2019 teacher survey

Knowledge	Characteristics	Perceptions
Discipline (Reading Comprehension, Mathematics)	Gender	Material and pedagogical conditions
Didactic (reading, Mathematics)	Seniority	Harassment in schools
	Academic level	School management, professional and community relations
	Professional training	Salary conditions
	In-service and further training	Promotion and training opportunities
	Area of Mathematics to which teachers devote the most teaching time	
	Level of classroom equipment	

The teachers surveyed were all from the schools included in the PASEC2019 evaluation and not only those from the classes whose pupils were evaluated. The dimension of teachers' knowledge and skills is of particular importance because of the consideration given to it in educational research (Shulman, 1986, 1987; Altet, 2008; Hill and Ball, 2004; Helms and Stokes, 2013). This dimension is captured in this evaluation through Shulman's (1986, 1987) model which clearly identifies subject knowledge and skills on the one hand, and didactic knowledge and skills on the other. The teachers selected for the evaluation were subjected to paper-and-pencil tests. The questionnaire is in MCQ (Multiple Choice Questionnaire) format and covers two learning subjects: Reading Comprehension (subject knowledge and skills, didactic knowledge and skills) and Mathematics (subject knowledge and skills, didactic knowledge and skills).

Reading Comprehension: In this discipline, the assessment of subject knowledge and skills focuses on three cognitive processes, namely

1. Extracting explicit information
2. Making simple inferences,
3. Interpreting and combining information.

It is a question of determining to what extent the teacher has mastered Reading Comprehension in the language of instruction, accesses the meaning of what he or she reads and has a knowledge of the structures of the language that enables him or her to teach it as a school subject and to use it as a teaching medium (PASEC, 2018).

Mathematics: The assessment of subject knowledge and skills in Mathematics focused on three cognitive processes:

1. Knowing concepts,
2. Applying procedures, and
3. Solving problems.

The aim is to determine the extent to which the teacher has mastered the mathematical knowledge to be taught and has the reasoning ability to solve primary school problem situations (PASEC, 2018).

The assessment of knowledge and skills in Reading Comprehension didactics focuses on two cognitive processes:

1. Identifying pedagogical objectives,
2. Identifying the sources of pupils' errors.

The aim is to determine the extent to which the teacher knows how to analyze a learning situation and highlight pupils' errors (PASEC, 2018).

Assessment in Mathematics didactics focuses on two cognitive processes:

1. Analyzing pupils' approaches,
2. Choosing the most appropriate situations for the learning objectives.

It is a question of determining to what extent the teacher is capable of analyzing pupils' approaches and choosing situations that are conducive to the learning of mathematical concepts (PASEC, 2018).

The evaluation of teachers' didactic knowledge and skills makes it possible to understand their influence on practices and to shed light on the way they develop in order to eventually design initial and in-service training schemes that can foster this development (Kermen and Izquierdo-Aymerich, 2017). The analysis of results on subject content is based on scores that have made it possible to develop competency scales that categorize teachers according to their level of mastery of the content taught in Reading Comprehension and Mathematics. These scales differ from those of the tests for pupils because the content of the teachers' tests is different from that of the pupils' tests. These scales are subdivided into steps called "levels", each of which is characterized by

- A description of the typical manifestations of knowledge and skills mastered by the teachers who have reached it (a global presentation and not an exhaustive list of items to be checked one by one);
- Being inclusive, in the sense that teachers at level n also master the knowledge and skills of level n-1.

Figure 5: Inclusiveness of teacher competency scales
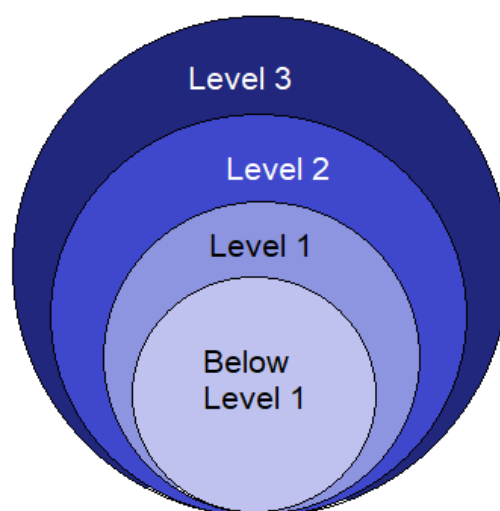
The analyses of didactic knowledge and skills are not based on a scale of skills, mainly because of the non-prescriptive nature of didactics (Johsua and Dupin, 2003). These analyses are based on findings relating to the percentages of success in test items and the scores of teachers in Cameroon. These findings are then put into perspective with data from didactic research. As with the analysis of subject knowledge and skills, the aim is to highlight the needs of initial and in-service teacher training.

In sum, this chapter could be summarised in three questions: (1) what do teachers know about Reading Comprehension and Mathematics? (2) What characterises these teachers? (3) How do they perceive their professional environment? Thus, this chapter first presents the results of analyses of the level of mastery of teachers' subject and didactic knowledge and skills in Reading Comprehension and Mathematics, and secondly, it presents the description of knowledge and skills according to the characteristics and perceptions of teachers.

6.1   TEACHERS' KNOWLEDGE AND SKILLS

6.1.1   Teachers' knowledge and skills in Reading Comprehension
6.1.1.1 Teachers' knowledge and skills in Reading Comprehension
At national level

The table below presents the PASEC2019 scale of teachers' Reading Comprehension skills. This scale provides information on the levels of teachers in Cameroon who participated in the Reading Comprehension test. It reports on the scores, the international and national distribution of teachers in the levels and the description of the skills corresponding to each of these different levels. Teachers at each level are able to perform the tasks at that level, less well at the higher levels and better at the lower levels.

The three levels presented in Table 33 correspond to the following three levels of Reading Comprehension:

- Extracting explicit information (level 1) involves the ability to locate and extract concrete information provided in the text or slightly paraphrased in a sentence, paragraph or text.

- Making simple inferences (level 2) involves the ability to deduce additional information from one or more elements in the text. The reader uses explicit (or implicit) referents and connectors to construct meaning through direct deduction and logical reasoning. These inferences are necessarily verifiable and can be used to

- Interpreting and combining information (level 3) refers to the ability to link several explicit and implicit clues located throughout the text to construct new ideas. The difficulty lies in the reader's ability to mobilise knowledge from outside the text and process it as a whole. These inferences are possibly verifiable and may vary between readers.

Table 33: PASEC2019 scale of teachers' Reading Comprehension skills

Levels	Score	International distribution of teachers in the levels of the scale	National distribution of teachers in the levels of the scale	Description of teachers' skills
Level 3	Above 497	52,0%	72,3%	At this level, teachers are able to step back and process all types of texts holistically. 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 discreet). They can consider the content of a text to formulate a relevant new idea in relation to the information read.
Level 2	Between 394 and 497	32,2%	22,3%	Teachers demonstrate the 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 from different parts of a text.
Level 1	Between 290 and 394	14,2%	5,1%	Teachers are able to locate explicit information in medium and long texts using clues from the text and questions. They mobilize this skill on narrative and informative texts. Teachers are able to locate some basic paraphrases in a text.
Below Level 1	Lower than 290	1,6%	0,4%	Teachers at this level do not sufficiently demonstrate the skills measured by this test in Reading Comprehension. They have difficulty with the knowledge and skills of level 1.

In general, the majority of teachers in Cameroon are represented at level 3 (score ≥ 497 points) of the reading literacy scale, i.e. 72.3%, with less than 2 out of 7 teachers recorded at lower levels. Cameroon records almost 2 teachers out of 9 at level 2 (394 points ≤ score < 497 points), one teacher out of 20 at level 1 and barely one teacher out of 250 is below level 1 (score < 290 points), of which do not demonstrate the knowledge and skills assessed in this PASEC2019 test. These statistics show that the teachers surveyed in Cameroon have reached a satisfactory level of mastery of knowledge and skills in Reading Comprehension. However, almost 5.5% of teachers in Cameroon (those below level 1 or at level 1) require special attention and upgrading through in-service training.

These observations demonstrate the urgency of implementing specific in-service training for teachers at each level of the Reading Comprehension skills scale.

6

Graph 164 : Distribution of teachers in the different levels of the Reading Comprehension skills scale by stratum
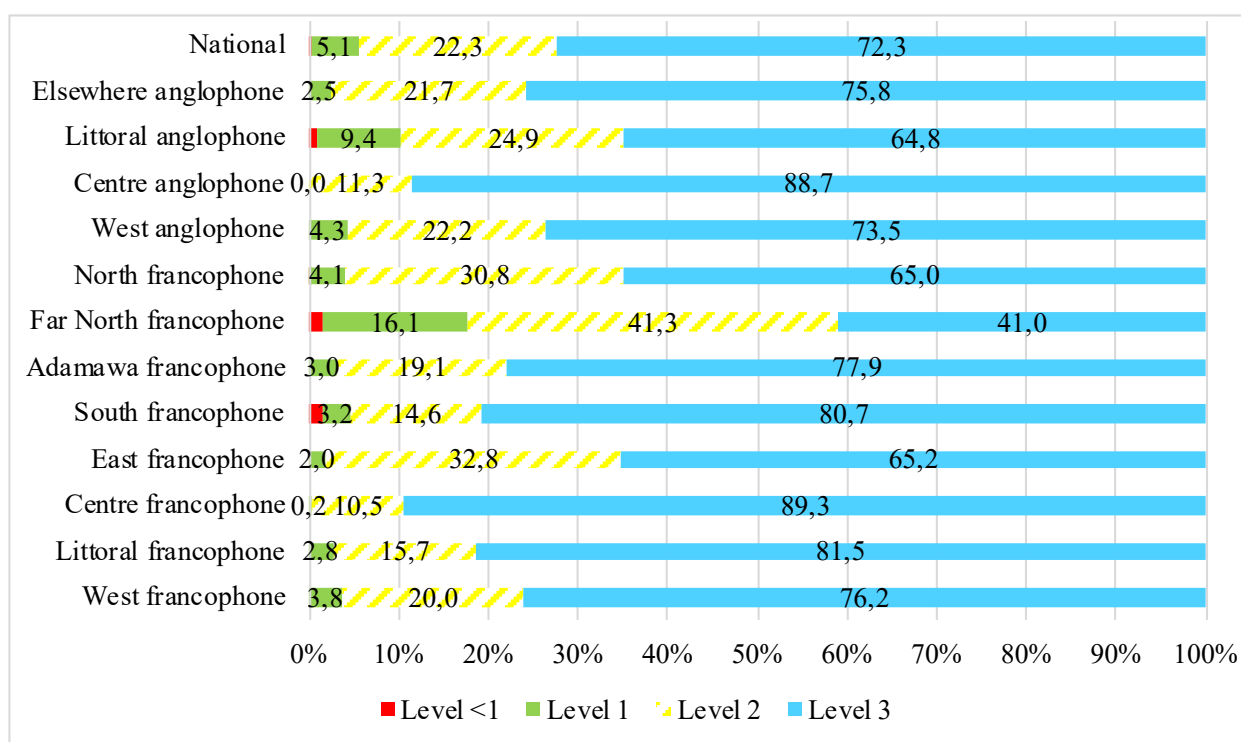
Of the different strata identified in the country, 2/3 have at least 73% of their teachers in level 3 of the reading literacy scale. These are the following strata in particular: Francophone Center (89.3%), Anglophone Center (88.7%), Francophone Littoral (81.51%), Francophone South (80.7%), Francophone Adamawa (77.9%), Francophone West (76.2%), Anglophone Rest (75.8%) and Anglophone West (73.5%). This is proof of a good command of Reading Comprehension by teachers in these strata, who nevertheless need to be strengthened by specific training.

The lowest percentage of teachers at level 3 of the skills scale is recorded in the French-speaking Far North stratum of Cameroon with 41%. This result suggests the need for very special attention to be paid to these teachers. The improvement of the mastery of Reading Comprehension by means of training actions focused on the cognitive processes involved in the PASEC2019 subject test for teachers is necessary for teachers in this stratum affected by the Boko Haram security crisis since 2015.

The other strata of the country, namely the Anglophone Littoral, the Francophone North and the Francophone East have 65% of their teachers at level 3 of the Reading Comprehension scale.

Distribution of teachers in the different reading literacy scales, by stratum

Table 34 : Teachers' average reading literacy scores by strata

Stratum	Mean	Standard error on the mean	Standard deviation	Standard error on the standard deviation
West francophone	547,2	10,5	73,1	6,0
Littoral francophone	557,2	8,3	75,1	7,0
Center francophone	589,3	10,2	75,3	5,6
East francophone	534,7	17,3	78,0	13,7
South francophone	560,4	15,0	87,1	13,8
Adamawa francophone	544,5	13,5	67,4	12,6
Far North francophone	476,3	12,5	83,0	6,2
North francophone	529,4	7,6	75,9	6,9
West anglophone	540,3	9,0	73,8	7,0
Center anglophone	573,4	8,0	62,5	4,7
Littoral anglophone	519,6	14,8	87,1	8,2
Elsewhere anglophone	549,3	8,4	74,2	6,9
National	**542,7**	**4,0**	**84,5**	**3,1**

The national average score is 542.7 points, which is above the international average score of 500 points.

According to the different strata identified in Cameroon, the French-speaking Far North obtained the lowest average score (476.3 points) and remains the only stratum to record a score below 500 points. In addition to the latter, the Anglophone Littoral (519.6 points), the Francophone North (529.4 points), the Francophone East (534.7 points) and the Anglophone West (540.3 points) recorded average scores below the national average.

The Francophone Center stratum with an average score of 589.3 points leads the distribution. It is followed by the Anglophone Center (573.4 points), the Francophone South (560.4 points), the Francophone Littoral (557.2 points), the Anglophone Remainder (549.3 points), the Francophone West (547.2 points) and the Francophone Adamawa (544.5 points), each of which recorded an average score above the national average. However, these average scores per stratum hide large disparities within strata as shown by the standard deviations. This dispersion of results is particularly important in the English-speaking Littoral and the French-speaking South, each with more than 87 standard deviations. The disparity is least significant in the Anglophone Center and Francophone Adamawa strata, which have standard deviations of less than 70 points (see Table 34).

These observations corroborate the findings of Graph 164, in particular the distinction between strata in the country: on the one hand, those in which (two-thirds) of the teachers surveyed (at least 73%) have a satisfactory level of mastery of knowledge and skills in Reading Comprehension, and on the other hand, strata in which teachers would benefit from substantially improving their knowledge and skills.

The priority needs of teachers in Reading Comprehension therefore differ: on the one hand, it would be essential to focus on reinforcing and consolidating what has been learned, and on the other, more work should be done on mastering the fundamentals. It is important to point out that these overall results conceal sometimes significant disparities within the strata. These disparities should lead to a differentiated approach to training to be considered in each stratum defined in Cameroon.

6

6.1.1.2 Knowledge and skills of teachers in the Anglophone sub-system In Reading Comprehension

The table below presents the PASEC2019 scale of teachers' Reading Comprehension skills for the Anglophone subsystem. This scale provides information on the levels of teachers in the Anglophone subsystem in Cameroon who participated in the Reading Comprehension test. It reports on the scores and national distributions of teachers of the Anglophone subsystem in the different levels (for a description of the skills corresponding to each of these different levels, see Table 35). Teachers at each level are able to perform the tasks at that level less well, and better at the tasks at the higher levels.

Table 35 :PASEC2019 scale of teachers' Reading Comprehension skills in the English subsystem

Levels	Score	National distribution of teachers in the scale levels	National distribution of English-speaking teachers in the scale levels
Level 3	Above 497	72,3%	74,8%
Level 2	Between 394 and 497	22,3%	19,9%
Level 1	Between 290 and 394	5,1%	4,9%
Below level 1	Lower than 290	0,4%	0,4%

Overall, the majority of teachers in the Anglophone subsystem of Cameroon are represented at level 3 (score ≥ 497 points) of the proficiency scale defined in Reading Comprehension, i.e. 74.8%, with less than 1 in 4 teachers recorded at lower levels. The Cameroonian Anglophone subsystem records almost 1 in 5 teachers at level 2 (394 points ≤ score < 497 points), barely 1 in 20 teachers at level 1 and 1 in 250 teachers below level 1 (score < 290 points), none of whom demonstrate the knowledge and skills assessed in this PASEC2019 test. These statistics show that the Anglophone subsystem teachers surveyed have achieved a satisfactory level of mastery of knowledge and skills in Reading Comprehension. However, there are still 5.3% of Cameroonian Anglophone teachers (those below level 1 or at level 1) who require special attention and upgrading through in-service training.

These observations demonstrate the urgency of implementing specific in-service training for teachers in the Anglophone sub-system at each level of the Reading Comprehension skills scale.

Graph 165 : Distribution of Anglophone teachers in the different levels of the Reading Comprehension skills scale by stratum
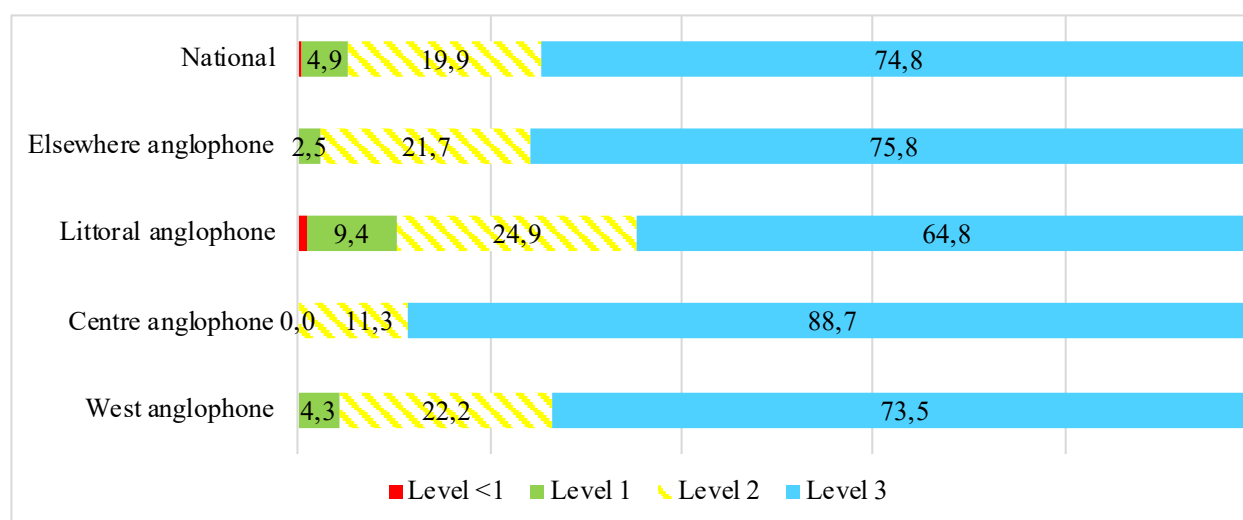
Among the different English-speaking strata identified in the country, 4/5 register at least 73% of their teachers in level 3 of the Reading Comprehension skills scale. This is evidence of a good mastery of Reading Comprehension by English-speaking teachers in these strata, who nevertheless need to be strengthened by specific training.

The lowest percentage of English-speaking teachers at level 3 of the competency scale is recorded in the English-speaking Littoral stratum with 64.8%, which is the only stratum with teachers below level 1 with 0.9%. This result suggests an urgent need for special attention to be paid to the English-speaking teachers in this stratum. The improvement of the mastery of Reading Comprehension by means of training actions focused on the cognitive processes involved in the PASEC2019 subject test for teachers is necessary among Anglophone teachers in this stratum affected by the Anglophone security crisis in the North-West and South-West since 2017. Distribution of Anglophone teachers in the different scales of Reading Comprehension skills, by stratum

Table 36 : Anglophone teachers' mean scores in Reading Comprehension by strata

Stratum	Mean	Standard error on the mean	Standard Deviation	Standard error on the standard deviation
West anglophone	540,3	9,0	73,8	7,0
Center anglophone	573,4	8,0	62,5	4,7
Littoral anglophone	519,6	14,8	87,1	8,2
Elsewhere anglophone	549,3	8,4	74,2	6,9
National	**542,9**	**7,7**	**80,0**	**6,2**

The national average Anglophone score is 542.9 points which is 2 points above the national average score. According to the different Anglophone strata identified in Cameroon, Littoral Anglophone obtained the lowest average score (519.6 points) and remains the only stratum to record a score below 520 points. Following this, the Anglophone West (540.3 points) recorded an average score below the national average.

The Central Anglophone stratum with an average score of 573.4 points leads the distribution. It is followed by the Rest of Anglophone (549.3 points), which recorded an average score above the national level. However, these average scores per stratum conceal large disparities within these English-speaking strata as shown by the standard deviations. This dispersion of results is particularly important in the English-speaking Littoral with 87.1 standard deviations. The disparity is least significant in the Anglophone Center strata, with a standard deviation of less than 65 points.

These observations corroborate the findings of Figure 165, in particular the distinction between the country's Anglophone strata: on the one hand, those in which the majority of teachers surveyed (at least 73%) have a satisfactory level of mastery of knowledge and skills in Reading Comprehension, and on the other hand the strata in which teachers would benefit from substantially improving their knowledge and skills.

The priority needs of teachers in Reading Comprehension therefore differ: on the one hand, it would be essential to focus on reinforcing and consolidating what has been learned, and on the other, more work should be done on mastering the fundamentals. It is important to point out that these overall results conceal sometimes significant disparities within these English-speaking strata. These disparities should lead to a differentiated approach to training to be considered in each stratum defined in Cameroon.

6

6.1.2   Teachers' knowledge of Mathematics

6.1.2.1 Teachers' knowledge of Mathematics at national level

Table 36 presents the PASEC2019 scale of teachers' skills in Mathematics. This scale reports on the levels of Mathematics teachers demonstrated in the PASEC2019 test in this subject. It provides information on the international and national distribution of teachers according to levels and the description of competences corresponding to each of these levels. As pointed out in the introduction to this chapter, the Mathematics test submitted to teachers during the PASEC2019 evaluation aims to measure the mastery of knowledge and skills related to three cognitive processes: knowing concepts, applying procedures and solving problems. It should be noted, however, that three essential domains of primary Mathematics were considered in this assessment, namely: numbers and operations, magnitude and measurement, and geometry and space.

Table 37 : PASEC2019 scale of teacher competencies in Mathematics

Levels	Score	International distribution of teachers in the levels of the scale	National distribution of teachers in the levels of the scale	Description of teachers' skills
Level 3	Above 547	32,3%	37,0%	Teachers at this level demonstrate the ability to solve complex problems, involving several steps in the solution and requiring reasoning based on a thorough analysis of the situation, which may involve manipulating unknowns (e.g. in unequal shares problems). To solve most tasks at e.g. thinking that area and perimeter vary in the same direction). The expertise characteristic of this level also reflects a deep understanding of concepts (e.g. understanding this level, cognitive vigilance is required to avoid common errors and inhibit misconceptions (the relativity of the whole in relation to the concept of a fraction).
Level 2	Between 456 and 547	32,6%	36,9%	Teachers at this level can solve many direct proportionality problems, as well as complex problems involving several steps and requiring a sequentially organized approach. Many tasks at this level involve unit conversions, which may or may not be integrated into problem situations. Some tasks require factual knowledge about a variety of mathematical objects (e.g. formulas for calculating the area of a solid, a property of triangles, or the name of a particular triangle).
Level 1	Between 365 and 456	26,6%	22,9%	Teachers at this level demonstrate factual knowledge and a mastery of basic procedures, which they apply in direct application tasks. Their skills are mainly in the area of numbers (e.g. knowledge of decimal writing, comparing fractions, the notion of percentage, etc.) and operations (ability to solve operations involving whole numbers, decimal numbers and fractions). They also demonstrate some knowledge of solids and figures (e.g. identifying figures or solids, locating a diagonal or an axis of symmetry, etc.) and of magnitude and measurement (e.g. calculating the perimeter of a triangle). Few problem-solving tasks are at this level.
below Level 1	Lower than 365	8,5%	3,2%	Teachers 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.

Overall, table 37 shows that teachers in Cameroon are increasingly better represented in the higher levels of the PASEC2019 scale of mathematical skills compared to the international distribution. Thus, about 74% of the teachers who participated in the assessment are recorded at level 3 (score ≥ 547 points) and level 2 (456 points ≤ score < 547 points), i.e. 37% per level respectively. At the bottom of the scale, 22.9% of teachers are located at level 1 (365 points ≤ score < 456 points), while 3.2% (score < 365 points) did not demonstrate sufficient knowledge and skills in the Mathematics test.

These results show that the level of knowledge and skills of Cameroonian teachers in Mathematics is far lower than that assessed in Reading Comprehension, hence the need for a much more accentuated capacity building action in Mathematics. One of the possible reasons for this tendency is the predominance of trainers with literary profiles in teacher training colleges responsible for the initial training of primary school teachers (Hounkpodoté, Diallo and Tankeu, 2017). The in-service training activities implemented by the General Inspectorate of Education of the Ministry of Basic Education do not seem to be enough to enable a large number of teachers to acquire a sufficient level of knowledge and skills in Mathematics. This is an avenue to be explored in order to orientate initial or in-service teacher training actions in Cameroon.

Distribution of teachers in the different scales of competence in Mathematics, by stratum

Graph 166 : Distribution of teachers in the different scales of competence in Mathematics, by stratum
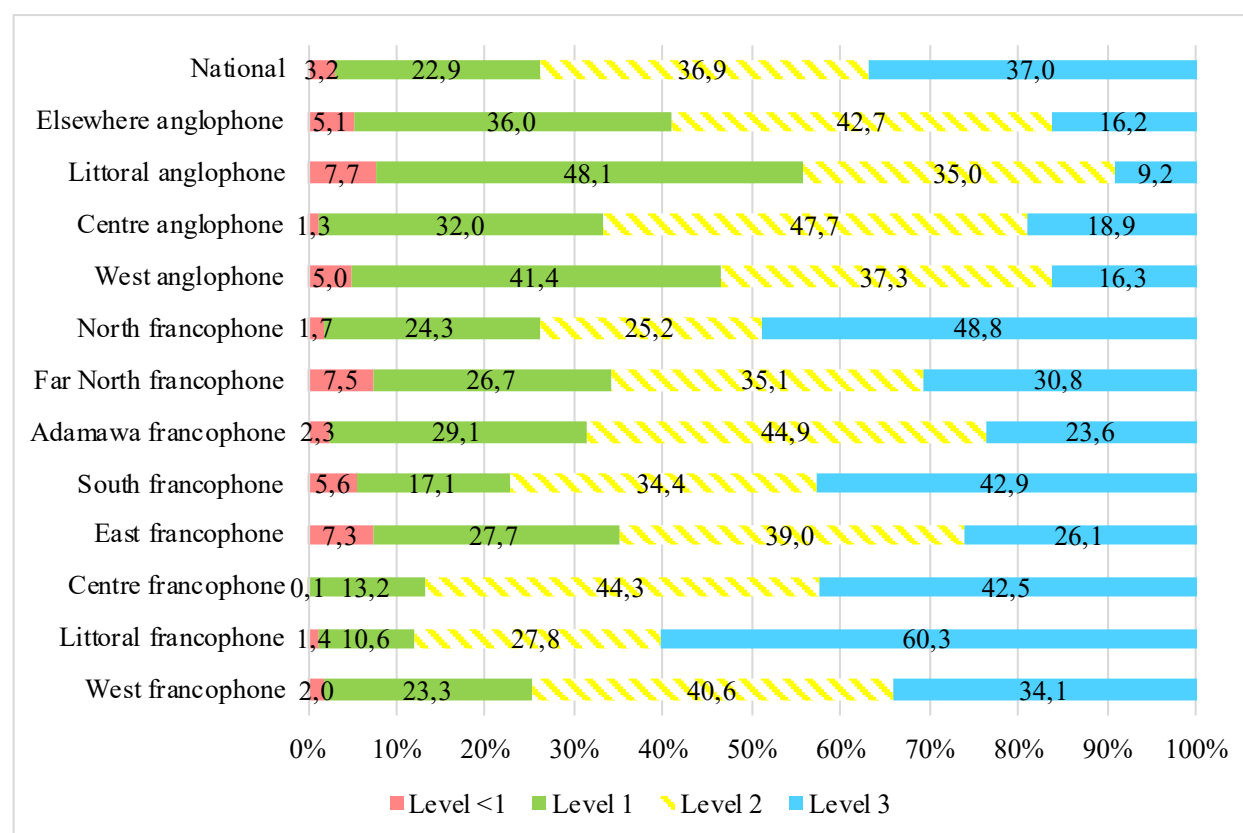
Overall, only four of the 12 strata have percentages of teachers registered at level 3 above the national average of 37%. These include the French-speaking Littoral (60.3%), which is the only one able to exceed the 50% threshold of teachers at level 3, the French-speaking North (48.8%), the French-speaking South (42.9%) and the French-speaking Center (42.5%). Figure 166 also shows that four strata had less than 20% of teachers at level 3 on the Mathematics proficiency scale. These were Littoral Anglophone (9.2%), the only one with less than 10% of teachers at level 3, Rest of Anglophone (16.2%), West Anglophone (16.3%) and Center Anglophone (18.9%).

All strata had significant numbers of teachers at Level 2 on the Mathematics proficiency scale. While the national average percentage of teachers in this level is 36.9%, this proportion varies from 25.2% in the Francophone North to 47.7% in the Anglophone Center.

However, the strata with more than three quarters of teachers in the two higher levels (level 2 and level 3) are the Littoral francophone (88.1%), the Center francophone (86.8%) and the South francophone (77.3%).

In level 1 of the scale, the highest proportions of teachers are found in the Anglophone Littoral (48.1%), the Anglophone West (41.4%), the Anglophone Remainder (36.0%) and the Anglophone Center (32.0%). The Anglophone Littoral, the Francophone Far North, the Francophone East, the Francophone South, the Anglophone Remainder and the Anglophone West are the different strata that have significant percentages of teachers at the bottom of the scale (below level 1).

Table 38 : Average scores of teachers in Mathematics by strata

Stratum	Mean	Standard error on the mean	Standard deviation	Standard error on the standard deviation
West francophone	513,3	10,4	76,6	4,6
Littoral francophone	554,8	11,0	81,4	6,7
Center francophone	545,1	8,8	82,4	5,5
East francophone	496,4	23,5	96,6	12,0
South francophone	518,8	12,7	89,0	12,4
Adamawa francophone	497,5	14,4	72,6	7,3
Far North francophone	496,7	18,0	95,9	8,1
North francophone	538,3	9,0	92,7	6,1
West anglophone	472,3	11,1	71,3	6,0
Center anglophone	488,1	7,5	62,3	4,2
Littoral anglophone	450,7	9,1	68,4	4,9
Elsewhere anglophone	476,3	9,3	73,8	7,3
National	517,5	4,5	88,3	2,9

The national average score is 517.5 points, slightly above the acceptable score (the average) of 500 points. However, only five strata were able to record average scores above the average (500 points). These are the French-speaking Littoral (554.8), the French-speaking Center (545.1), the French-speaking North (538.3), the French-speaking South (518.8), all of which scored above the national average, and the French-speaking West (513.3), which scored slightly below the national average. All other strata in Cameroon recorded average scores below the average. However, French-speaking Adamawa (497.5), French-speaking Far North (496.7) and French-speaking East (496.4) had average scores close to 500 points. At the bottom of the ranking, we find the English-speaking Littoral (450.7) followed by the English-speaking West (472.3), which are the only strata with average scores below 475 points.

These average scores conceal enormous disparities between teachers in the same stratum. Scores are most dispersed in the Francophone East stratum with a standard deviation of 96.6 points, followed by the Francophone Far North with a standard deviation of 95.9 points. The smallest disparities are observed in the Anglophone strata, notably in the Anglophone Center (62.3 standard deviation points) and the Anglophone Littoral (68.4 standard deviation points).

These disparities could be the result of initial and continuing training arrangements that may be very different from one stratum to another and even within the same stratum (Houkpodoté et al. 2017).

6.1.2.2 Knowledge of teachers in the Anglophone subsystem In Mathematics

Table 38 presents the PASEC2019 scale of competences of teachers of the Anglophone subsystem in Mathematics. This scale reflects the levels demonstrated by these teachers in the PASEC2019 test in this subject. This table provides information on the national distribution of all teachers and those of the Anglophone subsystem according to levels. As pointed out in the introduction to this chapter, the Mathematics test submitted to teachers during the PASEC2019 assessment is intended to measure mastery of knowledge and skills relating to three cognitive processes: knowing concepts, applying procedures and solving problems. It should be noted, however, that three essential areas of primary Mathematics were considered in this assessment, namely: numbers and operations, magnitude and measurement, and geometry and space.

Table 39 : PASEC2019 scale of Mathematics competencies of teachers in the English-speaking subsystem

Levels	Score	National distribution of teachers in the scale levels	National distribution of English-speaking teachers in the scale levels
Level 3	Above 547	37,0%	14,1%
Level 2	Between 456 and 547	36,9%	40,3%
Level 1	Between 365 and 456	22,9%	40,6%
Below level 1	Belo 365	3,2%	5,0%

Overall, table 39 shows that teachers from the Anglophone subsystem in Cameroon are more represented in the first two levels of the PASEC2019 scale of mathematical competencies, in contrast to the national distribution of all teachers who are increasingly better represented in the higher levels. Thus, more than 80% of the teachers in the Anglophone subsystem who participated in the evaluation are recorded at level 1 (40.6%) and level 2 (40.3%). At the upper end of the PASEC2019 competency scale, only 14.1% of these teachers were recorded at level 1, and below level 1, at least 5% did not demonstrate sufficient knowledge and skills in the Mathematics test.

These results clearly show that the level of knowledge and skills of Cameroonian teachers of the Anglophone subsystem in Mathematics needs to be consolidated through strong capacity building actions. As noted above, the in-service training actions implemented by the General Inspectorate of Education of the Ministry of Basic Education do not seem sufficient to enable a large number of teachers of the Anglophone sub-system to acquire a sufficient level of knowledge and skills in Mathematics.

Distribution of teachers of the Anglophone subsystem in the different scales of competence in Mathematics, by stratum

6

Graph 167 : Distribution of the teachers of the Anglophone subsystem in the different scales of competence in Mathematics, by stratum
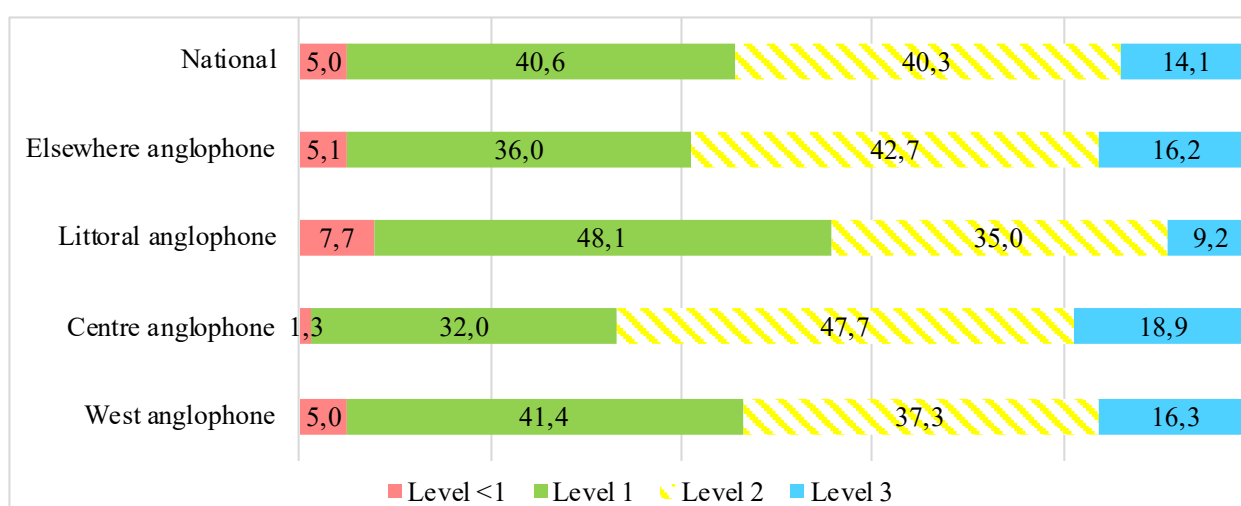
The observations in this graph corroborate the fact that even in the strata, the majority of teachers in the Anglophone subsystem are recorded at levels 1 and 2 of the PASEC2019 knowledge and skills scale. It is also observed that of the four strata identified for the Anglophone subsystem, only Littoral Anglophone (9.2%) has a percentage of teachers below the national average percentage at level 3. Figure 167 also shows that all four strata of the Anglophone subsystem recorded less than 20% of teachers at level 3 and more than 30% at level 1 and 2 respectively.

Similarly, only one stratum recorded more than 66% of teachers in the top two levels (level 1 and level 2), namely the Anglophone Center (66.7%),

In level 1 of the scale, the highest proportions of teachers are found in the Anglophone Littoral (48.1%) and the Anglophone West (41.4%). These two strata are the only ones with more than 45% of teachers at level 1 and below.

Table 40 : Average scores of teachers in the Anglophone subsystem in Mathematics by strata

Stratum	Mean	Standard error on the mean	Standard deviation	Standard error on the standard deviation
West anglophone	472,3	11,1	71,3	6,0
Center anglophone	488,1	7,5	62,3	4,2
Littoral anglophone	450,7	9,1	68,4	4,9
Elsewhere anglophone	476,3	9,3	73,8	7,3
National	**468,5**	**5,2**	**69,5**	**3,1**

The national average score recorded in Mathematics in the Anglophone subsystem was 468.5 points, well below the average of 500 points. Moreover, no stratum was able to record an average score above 500 points. However, the English-speaking Center (488.1 points) is at the top of the ranking and the English-speaking Littoral (450.7 points) is at the bottom.

These average scores conceal huge disparities between teachers in the same stratum. Scores are more dispersed in the Remainder stratum with a standard deviation of 73.8 points, followed by the Anglophone West with a standard deviation of 71.3 points. Disparities are less significant in the Anglophone Center stratum (62.3 standard deviation points) and the Anglophone Littoral stratum (68.4 standard deviation points).

These disparities could be the result of initial and continuing training arrangements that may differ from one stratum to another or even within the same stratum (Houkpodoté et al. 2017).

6.1.3 Teachers' knowledge and skills in Reading Comprehension Didactics

6.1.3.1 Teachers' knowledge and skills in Reading Comprehension Didactics at national level

Teachers need to be sufficiently equipped to teach Reading Comprehension strategies. For this, it is important that teachers have clear ideas about the processes involved in Reading Comprehension and the different levels mentioned above. For this reason, they were given a test on some elements of didactics of Reading Comprehension in order to assess the extent to which the different levels of Reading Comprehension are known and understood by teachers and the extent to which they can identify the source of a pupil's comprehension error. The results of the reading literacy test consist of an analysis of the scores obtained by the different strata in the country.

Table 41 : Average scores of teachers in Reading Comprehension didactics by strata

Stratum	Mean	Standard error on the mean	Standard deviation	Standard error on the standard deviation
West francophone	547,7	12,3	87,0	7,6
Littoral francophone	566,4	7,3	88,1	5,3
Center francophone	563,6	13,4	94,7	6,4
East francophone	544,6	19,7	86,2	11,6
South francophone	584,4	16,0	93,9	10,8
Adamawa francophone	525,3	19,0	88,4	13,9
Far North francophone	500,5	13,2	90,4	9,0
North francophone	529,0	12,8	92,8	8,2
West anglophone	490,8	12,9	77,3	7,2
Center anglophone	533,8	11,3	80,9	8,5
Littoral anglophone	503,5	10,4	82,6	6,6
Elsewhere anglophone	543,2	8,8	81,1	5,3
National	**539,4**	**4,4**	**92,9**	**2,9**

Table 40 gives the distribution of the average scores per stratum in Reading Comprehension didactics of the teachers evaluated. The average scores of the teachers in Reading Comprehension didactics ranged from 490.8 points recorded by the Anglophone West, which was the only stratum among the 12 to be below the average (500 points), to 584.4 points obtained by the Francophone South. Half of the strata (Francophone South, Francophone Littoral, Francophone Center, Francophone West, Francophone East and Anglophone Remainder) obtained average scores above the national average score (539.4 points).

The analysis of standard deviations highlights the persistence of large disparities between teachers both within the country (92.9 standard deviation units) and within strata. These dispersions of scores are much more pronounced in the Francophone Center (94.7 standard deviation units), the Francophone South (93.9 standard deviation units), the Francophone North (92.8 standard deviation units) and the Francophone Far North (90.4 standard deviation units). These disparities within the country illustrate once again the need to adapt training actions to each specific public.

In sum, the comparison of results in Reading Comprehension and in the didactics of Reading Comprehension highlights significant differences. On the one hand, the teachers demonstrated level 2 or 3 knowledge and skills in Reading Comprehension. On the other hand, their knowledge and skills in the didactics of Reading Comprehension are much less solid. In other words, while the majority of teachers are able to implement Reading Comprehension processes satisfactorily when they read a text themselves, many of them also have difficulties when it comes to teaching them to pupils. All these observations argue in favour of initial and in-service training which, in addition to

6

mastering the content to be taught, would devote a great deal of time to the problems associated with teaching and learning this content.

6.1.3.2 Knowledge and skills of teachers in the English-speaking Subsystem in the didactics of Reading Comprehension

At national level

Teachers in the Anglophone subsystem need to be sufficiently equipped to teach Reading Comprehension strategies. For this, it is important that they have clear ideas about the processes involved in Reading Comprehension and the different levels mentioned above. For this reason, they were given a test on some elements of Reading Comprehension didactics in order to assess the extent to which the different levels of Reading Comprehension are known and understood by the teachers of this subsystem and the extent to which they can identify the source of a pupil's comprehension error. The results of the reading literacy test are presented as an analysis of the scores obtained by the different English-speaking strata in the country.

Table 42 : Average scores of teachers in the Anglophone subsystem in Reading Comprehension didactics according to strata

Stratum	Mean	Standard error on the mean	Standard deviation	Standard error on the standard deviation
West anglophone	490,8	12,9	77,3	7,2
Center anglophone	533,8	11,3	80,9	8,5
Littoral anglophone	503,5	10,4	82,6	6,6
Elsewhere anglophone	543,2	8,8	81,1	5,3
National	**516,5**	**6,5**	**83,2**	**4,5**

The table above gives the distribution of the average scores per stratum in Reading Comprehension didactics of the teachers assessed in the Anglophone subsystem. The average scores of these teachers in Reading Comprehension ranged from 490.8 points recorded by the Anglophone West, which was the only one of the 04 Anglophone strata defined to record an average score below the average (500 points), to 543.2 points obtained by the Anglophone Rest. Half of the strata (Anglophone Littoral and Anglophone West) had average scores below the national average score (516.5 points).

The analysis of standard deviations highlights the persistence of large disparities between teachers in the Anglophone sub-system both nationwide (83.2 standard deviation units) and within strata. These score dispersions are much more pronounced in the Anglophone Littoral (82.6 standard deviation units) and slightly attenuated in the Anglophone West (77.3 standard deviation points), even though they remained very high throughout the country. This difference in disparities between the English-speaking strata suggests once again the need to adapt training actions to each specific audience.

A comparison of the results in Reading Comprehension and Reading Comprehension didactics in the Anglophone subsystem reveals remarkable differences. Indeed, on the one hand, teachers in the Anglophone subsystem show level 2 or 3 knowledge and skills in Reading Comprehension, while on the other hand their knowledge and skills in didactics of Reading Comprehension are much less solid. In other words, while the majority of teachers in the Anglophone subsystem are able to implement Reading Comprehension processes satisfactorily when they read a text themselves, many of them also have difficulties when it comes to teaching them to pupils. All these observations argue in favour of initial and in-service training which, in addition to mastering the content to be taught, would devote a significant amount of time to the problems associated with teaching and learning this content.

6.1.4   Teachers' knowledge of Mathematics didactics, by stratum
6.1.4.1   Teachers' knowledge of Mathematics didactics, by stratum
             At national level

The analysis of the results of the Mathematics didactics test is based on the average scores of the strata. These scores are presented in Table 43, which also shows the various standard deviations. These analyses lead to the definition of strata categories according to their scores.

Table 43 : Average scores of teachers in Mathematics didactics according to strata

Stratum	Mean	Standard error on the mean	Standard deviation	Standard error on the standard deviation
West francophone	515,9	10,7	72,8	4,6
Littoral francophone	533,2	11,0	84,0	6,9
Center francophone	556,6	12,6	82,5	6,6
East francophone	521,7	20,4	96,1	12,5
South francophone	523,1	15,2	91,3	10,7
Adamawa francophone	509,7	13,1	81,3	14,3
Far North francophone	494,6	15,8	88,5	7,7
North francophone	507,7	10,9	85,3	8,1
West anglophone	477,4	12,1	70,1	7,4
Center anglophone	503,3	9,5	69,3	4,4
Littoral anglophone	486,5	9,5	71,9	6,1
Elsewhere anglophone	508,0	11,3	67,8	7,2
National	**518,8**	**4,7**	**84,8**	**3,1**

Teachers' scores in Mathematics didactics ranged from 477.4 points in the Anglophone West to 556.6 points in the Francophone Center.

Three strata out of the twelve obtained average scores below the average (500 points), namely the Anglophone West (477.4 points), the Anglophone Littoral (486.5 points) and the Francophone Far North (494.6). Although the French-speaking Far North stratum has an average score very close to the average, it also has the greatest dispersion among the strata, even higher than that recorded at the national level.

Four strata, namely the French-speaking Center, the French-speaking Littoral, the French-speaking South and the French-speaking East, obtained average scores higher than the national average of 518.8 points.

The dispersion of scores is much greater in the Francophone strata than in the Anglophone strata.

For the nine strata with scores above 500 points, the smallest and largest dispersion is found in the Anglophone Rest (67.8 standard deviation units) and the Francophone East (96.1 standard deviation units) respectively.

In summary, the results of the Mathematics didactics test revealed difficulties for the teachers surveyed in analyzing pupils' approaches and in choosing situations that are sufficiently rich to promote learning. The analyses shed light on the existence of a distortion between the mastery of subject knowledge and the mastery of didactic knowledge and skills. These analyses are in line with the work of Shulman (1986) who showed that having solid subject knowledge is not enough to teach. Shulman speaks of the "missing link" when referring to the lack of consideration given to didactic knowledge in teacher training programs. Many more recent studies (cf. Depaepe et al. 2013) have shown:

- (1) links between teachers' mastery of didactic knowledge and skills and pupils' performance;
- (2) the need to master a certain level of subject knowledge and skills in order to develop/master didactic knowledge and skills;

6

- (3) the fact that a high level of mastery of subject knowledge and skills is not synonymous with teacher competence. To put it differently, while a teacher should logically have a correct level of subject knowledge, what seems to make the difference afterwards is essentially the mastery and use of didactic knowledge in the classroom. On the other hand, a (too) high level of expertise in a content area can lead, if not accompanied by appropriate didactic knowledge, to a deleterious effect described as expert blind spot in the sense that the "content virtuoso" fails to understand what causes difficulties for pupils and to find suitable ways of explaining to them content that he or she considers to be very simple, even simplistic.

In view of the analyses of the results of the PASEC2019 tests in Cameroon on teachers' subject and didactic knowledge and skills and the international research mentioned above, the strengthening of these two fields would benefit from being harmoniously combined in initial and in-service training. For example, Depaepe et al (2018) focused their training program on the development of didactic knowledge and skills and found that these learning activities also impacted (and even more so) on the mastery of subject knowledge and skills. This may be an interesting avenue to explore for the reform of teacher education programs.

6.1.4.2   Knowledge of teachers in the English-speaking subsystem In Mathematics didactics, by stratum at national level

Table 44 : Average scores of the teachers of the Anglophone subsystem in Mathematics didactics according to strata

Stratum	Mean	Standard error on the mean	standard deviation	Standard error on the standard deviation
West anglophone	477,4	12,1	70,1	7,4
Center anglophone	503,3	9,5	69,3	4,4
Littoral anglophone	486,5	9,5	71,9	6,1
Elsewhere anglophone	508,0	11,3	67,8	7,2
National	493,4	5,6	70,9	3,5

The scores of teachers in the Anglophone subsystem in Mathematics didactics ranged from 477.4 points in the Anglophone West to 508.0 points in the Anglophone Rest.

At the national level, teachers in the Anglophone subsystem scored an average of 493.4 points below the average (500 points). This poor performance by teachers in the Anglophone subsystem simply reflects the serious teaching and learning difficulties in the subsystem. In the same vein, half of the Anglophone strata scored below the national average, namely the Anglophone West (477.4 points) and the Anglophone Littoral (486.5 points).

The other two strata, namely the Anglophone Remainder and the Anglophone Center, obtained average scores above the average (500 points).

The disparities in scores among teachers in the Anglophone subsystem are much greater in the low-performing strata than in the above-average strata.

The smallest dispersion of scores was in the Rest of Anglophone stratum (67.8 standard deviation units) and the largest was in Littoral Anglophone (71.9 standard deviation units).

The results of the mathematics didactics test revealed difficulties for the teachers surveyed in the Francophone subsystem in analysing pupils' approaches and in choosing situations that are sufficiently rich to promote learning. The analyses highlighted the existence of a distortion between the mastery of subject knowledge and the mastery of didactic knowledge and skills. These analyses are in line with the work of Shulman (1986).

In view of the analyses of the results of the PASEC2019 tests in Cameroon on the subject and didactic knowledge and skills of teachers in the Anglophone subsystem and the international research mentioned above, harmoniously combining these two fields in initial and in-service training would go a long way in strengthening performance in both and breaching the 'missing link' gap.

6.2 CHARACTERISTICS AND KNOWLEDGE OF SURVEYED TEACHERS, BY STRATUM

In general, sub-Saharan Africa is facing a significant shortage of teachers at all levels of the education system. Cameroon, a Central African country, is no exception.

In addition to the teacher shortage situation, learning outcomes in Cameroon are still dependent on the quality of teachers in the education system. And the need to understand the factors that explain this quality leads to two questions that serve as a guideline for this section of Chapter 6 of this analysis document:

1) what are the characteristics of the teachers surveyed?

2) What are the links between these characteristics and the knowledge they demonstrated in the teacher survey tests?

To answer these questions, the PASEC2019 teacher survey collected data on their individual and professional characteristics, their assessments of their working conditions, etc. These data relate to seven (6) teachers who were surveyed in the PASEC2019 evaluation.

These data concern seven (6) characteristics of the teachers which structure the sub-sections of section 4.2: (1) their gender, (2) their seniority in the profession, (3) their academic level, (4) the initial training in the teaching profession from which they benefited (or not), (5) their in-service and complementary training and (6) the field of Mathematics that they favour in their teaching.

6.2.1 Gender and knowledge of the teachers surveyed
6.2.1.1 Gender and knowledge of the teachers surveyed
At national level

According to data from the Ministry of Basic Education, the percentage of female teachers in primary schools rose from 45.5% to 51.1% between 2009 and 2019 in Cameroon. Ten years later, the percentage of female teachers in primary schools in Cameroon has changed very little, with only a 6-point increase. In some strata of schools surveyed during the evaluation, women teachers still represent a very low proportion of the primary school teaching force, such as in the French-speaking Far North (13.4%) and the French-speaking North, which records a share of less than 20%. These two strata are followed by the French-speaking East (38.9%), which has less than 40% female teachers. The other strata of the country have a proportion of women teachers above 50%, the parity threshold. The national proportion of this category is 48.9%, slightly below the parity threshold. On the other hand, we observe that women teachers are in the majority, with proportions above 60% in the following strata: the Anglophone Center (62.8%), the Francophone Littoral (67.7%), the Anglophone Littoral (70.7%) and the Anglophone West (72.5%) (see graph below).

6

Graph 168 : Distribution of the proportion of teachers who participated in the survey by gender and by stratum.

Stratum	Men	Women
Adamawa francophone	49.1	50.9
Centre anglophone	37.2	62.8
Centre francophone	40.1	59.9
East francophone	61.1	38.9
Far North francophone	86.6	13.4
Littoral anglophone	29.3	70.7
Littoral francophone	32.3	67.7
North francophone	81.6	18.4
West anglophone	27.5	72.5
West francophone	40.9	59.1
Elsewhere anglophone	40.9	59.1
South francophone	45.9	54.1
National	51.1	48.9
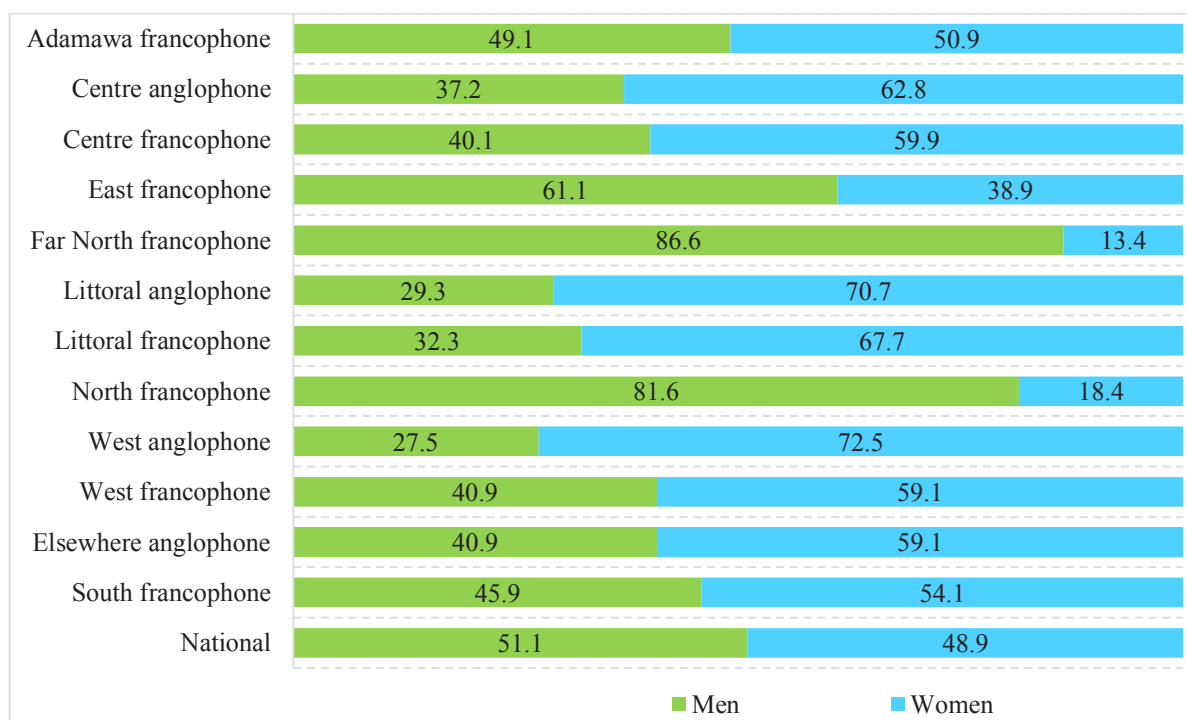
The graph below shows the differences in reading and Mathematics scores by gender of teachers.

Male and female teachers had similar scores in Reading Comprehension in all strata of the country. However, across the country, in Reading Comprehension, female teachers scored significantly higher than male teachers with a difference of 22.7 points.

In Mathematics, female and male teachers had similar scores in four strata of the country (Francophone Adamawa, Francophone Far North, Francophone North and Francophone South). In all other strata, male teachers scored significantly higher than female teachers. The difference in scores ranged from 32.5 points in the Anglophone Rest to 59.7 points in the Francophone East (see graph below). In Cameroon in general, in Mathematics, men scored significantly higher than women with a gap of 25.6 points.

These findings show, on the one hand, that there is great variability in Reading Comprehension, and on the other hand, in Mathematics, there are larger score gaps in favour of men in the half of the strata defined in the country (6 out of 12). This result could be explained by the under-representation of girls in the scientific series of general secondary education in Cameroon. Indeed, as Hounkpodoté et al. already pointed out in 2017, it is at the end of secondary school that the majority of primary school teachers are recruited.

Graph 169 : Differences between scores in reading and mathematics by gender of teacher and by stratum
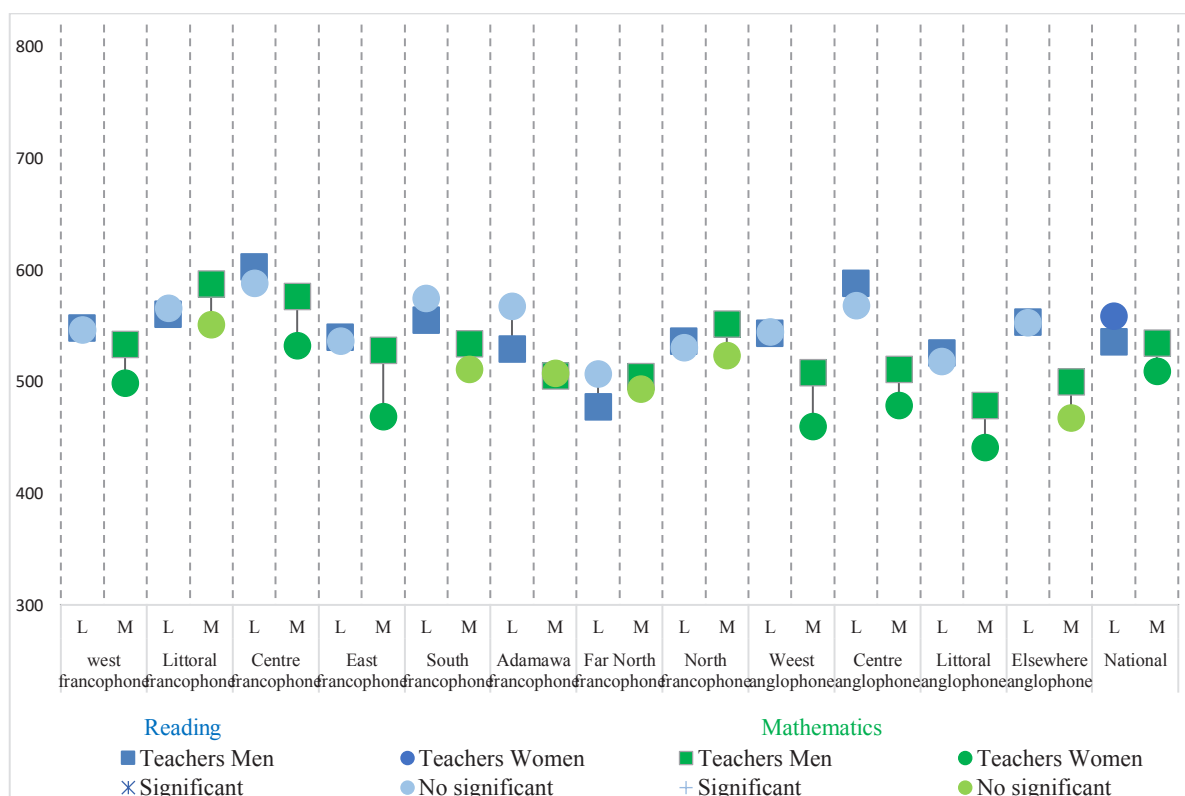
6.2.1.2 Gender and knowledge of the teachers Of the English-speaking subsystem surveyed

In all the strata of the schools surveyed in the English-speaking sub-system, female teachers still represent a very high proportion of the teaching staff in primary education with proportions greater than 50%, the parity threshold. The national proportion of the English-speaking subsystem of female teachers is 67.0%, still above the parity threshold. (see graph below).

Graph 170 : Distribution of the proportion of teachers in the Anglophone subsystem who participated in the survey by gender and by stratum

6
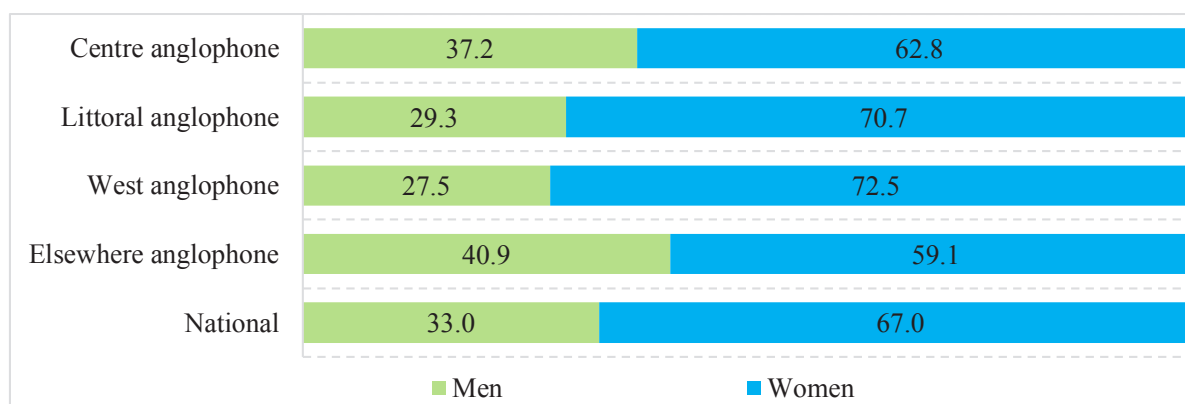
The graph below shows the differences between the reading and Mathematics scores by gender of teachers in the Anglophone subsystem.

Male and female teachers had similar scores in Reading Comprehension in all the different strata of this subsystem in the country. In Mathematics, male and female teachers had significantly different scores in all strata of the Anglophone subsystem in favour of males.It is the low representation of girls in the scientific and technical streams in secondary school that could explain these results as pointed out by Hounkpodoté et al. in 2017.

Graph 171 : Differences between Reading Comprehension and Mathematics scores by teacher gender and by stratum in the Anglophone subsystem
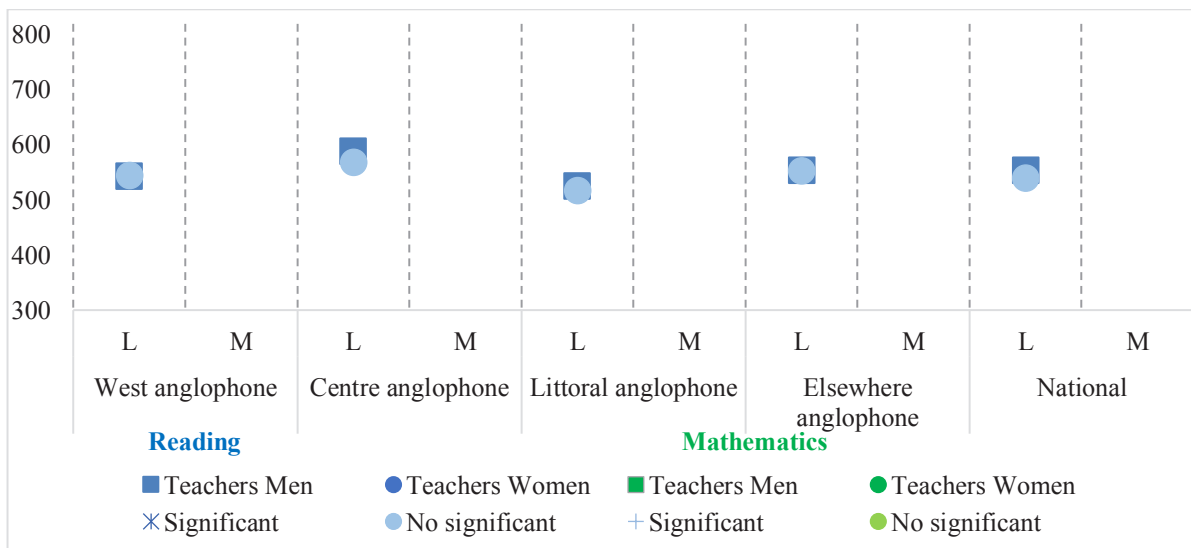
6.2.2   Seniority of the teachers surveyed
6.2.2.1   Seniority of the teachers surveyed at the national level

In Cameroon, as in sub-Saharan Africa in general, the context is marked by the recruitment of young teachers who do not benefit from sufficient support to compensate for their lack of experience (pedagogical advice, inspections, etc.). However, the fact that the length of teachers' experience has a positive effect on pupils' achievements has not been sufficiently demonstrated, as the contradictory debate on the subject shows. According to UNESCO (UNESCO-BREDA, 2009), and the study reports of the Learning Achievement Unit (UAS-Cameroon, 2016 and 2019), teachers' experience would have positive effects on their practices and thus on learning achievement, but some studies also claim that teachers' seniority is not always related to their effectiveness, as measured by their ability to ensure that pupils achieve the expected learning outcomes (Bruns et al., 2011). According to the OECD, years of teaching practice are not a good predictor of pupil achievement. In the first three or four years of school, experience has a positive impact on pupil outcomes. But beyond that, the years of teaching have little effect (OECD, 2009).

Without claiming to arbitrate this issue, PASEC2019 provides information on the level of teachers' subject knowledge through the prism of their experience in the profession. For this purpose, the number of years of experience of teachers was divided into four categories.

The graph below shows that at the national level, the percentage of teachers with less than or equal to 5 years' experience is 37.2% and that at the strata level, it varies between 30.6% (Littoral Francophone) and 54.0% (Littoral Anglophone). For the 6-10 year olds, at national level, they represent a percentage of 35.9%. Depending on the strata, this varies between 28.9% (Francophone West) and 43.8% (Anglophone West). The percentage of teachers with more than 20 years of service at the national level is 4.4%. Depending on the strata, this percentage varies between 0.0% (Francophone East) and 12.3% (Francophone Adamawa).

These statistics show a low proportion of teachers with more than 20 years of seniority. Indeed, the national average percentage of this category is more than eight times lower than those of the first two categories of young people. This remark refers to the question of the retention of teachers in the profession and the social value of the teaching profession (Farges, 2017). Indeed, teachers may be more inclined to remain in the profession if they and society place a high value on it (Farges, 2017). It is obvious to observe a decline in this social value, which is illustrated by the loss of much of the prestige of the teaching profession acquired after independence in French-speaking sub-Saharan Africa. This leads to the need to strengthen the reflection aimed at determining the conditions for attracting the best profiles and retaining them in the profession as long as possible (Cooper and Alvarado, 2006).

The graph below shows the percentage of teachers surveyed in these four categories.

Graph 172 : Distribution (%) of teachers by seniority

	Less than 5 years	Between 6 and 10 years	Between 11 and 20 years	More than 20 years
Adamawa francophone	34,3	34,0	19,3	12,3
Centre anglophone	50,5	36,0	13,1	0,4
Centre francophone	36,5	32,8	25,5	5,2
East francophone	39,3	37,6	23,2	0,0
Far North francophone	36,7	40,8	21,8	0,7
Littoral anglophone	54,0	37,3	6,7	2,0
Littoral francophone	30,6	39,0	23,8	6,6
North francophone	34,3	38,1	27,2	0,4
West anglophone	38,3	43,8	11,4	6,4
West francophone	36,6	28,9	26,3	8,2
Elsewhere anglophone	32,9	36,2	28,9	2,0
South francophone	38,0	30,4	24,5	7,1
National	37,2	35,9	22,5	4,4

The graph below shows the scores of the teachers surveyed in Reading Comprehension and Mathematics according to their seniority in teaching. In Reading Comprehension, in three strata (French-speaking East, French-speaking North and English-speaking West), teachers with more than 20 years' seniority have better scores than younger teachers, even though, at the national level, the scores of the two groups are similar. In five strata defined for Cameroon (French-speaking Center, French-speaking North, English-speaking Littoral, French-speaking Far North and French-speaking East), teachers with between 11 and 20 years' seniority scored higher than younger teachers. This difference is remarkably significant at the national level. Teachers with between 6 and 10 years' seniority scored higher than younger teachers in four strata (Francophone Far North, Francophone Littoral, Francophone West and Francophone Center). In Mathematics, in half of the country's strata (French-speaking North, French-speaking East, English-speaking West, French-speaking West, English-speaking Rest and French-speaking Littoral), teachers with more than 20 years' seniority score better than young people with 5 years' seniority or less. For the category of teachers with between 11 and 20 years of service, only in four strata (Sud francophone, Center anglophone, Rest anglophone and Littoral francophone) did these teachers obtain similar scores to their younger colleagues. Teachers with between 6 and 10 years' seniority scored better than younger teachers in half of the strata (Littoral francophone.

6

Center francophone, Ouest francophone, Ouest anglophone, Extrême-Nord francophone and Nord francophone). Whether in Reading Comprehension or Mathematics, we observe what could be called a "seniority premium" in the sense that teachers with greater seniority (more than 5 years) show a greater level of mastery of disciplinary knowledge and skills than novices (at most 5 years of seniority). This is a trend that has already been documented in several research studies that highlight the existence of 'teaching expertise' nurtured by practice and by sharing experiences with peers over the years of practice (Tochon, 2004, 1993; Garmston, 1998; Hibbert, et al., 2011). This research shows the importance of enhancing this 'teacher expertise' by combining it with other forms of recognised expertise (educational advisors and inspectors, university trainers, etc.) in the support of novice and pre-service teachers (Hibbert et al., 2011; Tochon, 2004).

Graph 173 : Teachers› scores in Reading Comprehension and Mathematics by seniority
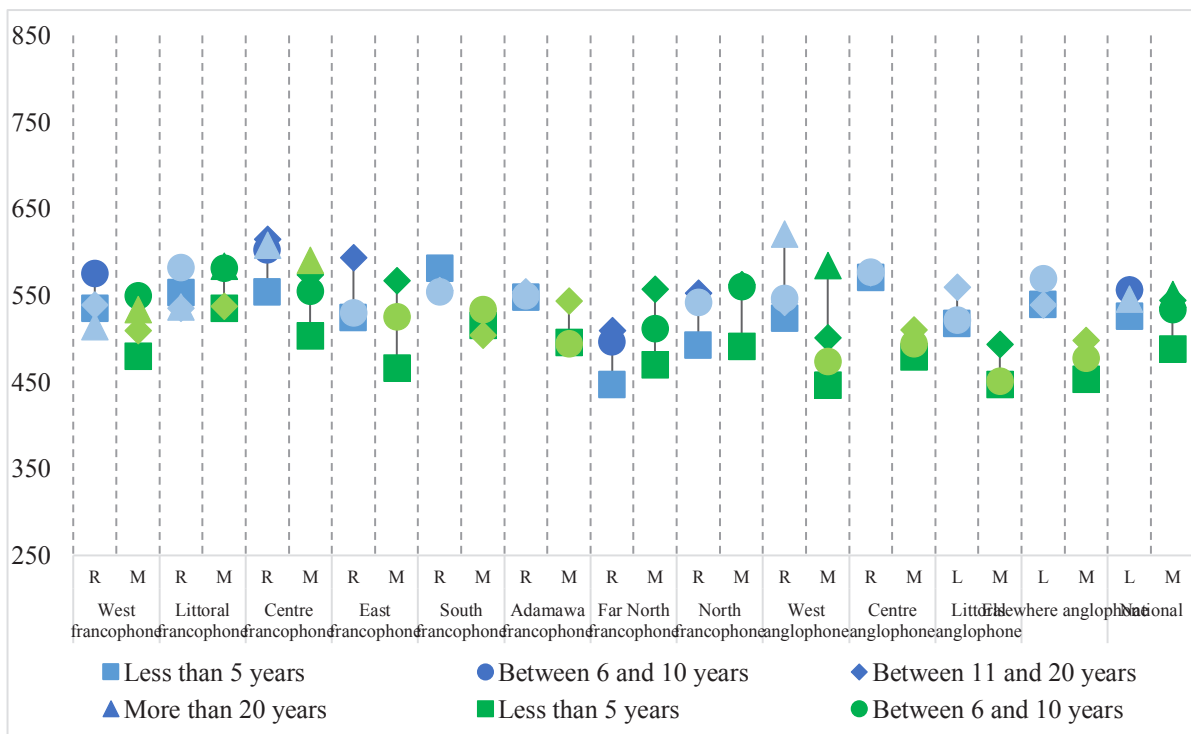
6.2.2.2 Seniority of Anglophone subsystem teachers surveyed

The graph below shows that at the national level of the Anglophone subsystem, the percentage of teachers with less than or equal to 5 years' seniority is 48.1% and that at the strata level, it varies between 32.9% (Anglophone Rest) and 54.0% (Anglophone Littoral). For the 6-10 year olds, at national level, they represent a percentage of 37.6%. Depending on the strata, this varies between 36.0% (Anglophone Center) and 43.8% (Anglophone West). The percentage of teachers in the Anglophone sub-system who have more than 20 years' seniority at the national level is 2.1%. Depending on the strata, this percentage varies between 0.4% (Anglophone Center) and 6.4% (Anglophone West).

These statistics show a low proportion of teachers with more than 20 years' seniority. Indeed, the national average percentage of this category is more than eighteen times lower than those of the first two categories of young teachers in the Anglophone sub-system. This remark refers to the issue of teacher retention and the social value of the teaching profession (Farges, 2017).

The graph below provides information on the percentage of English-speaking teachers surveyed.

Graph 174 : Distribution (in %) of Anglophone subsystem teachers by seniority
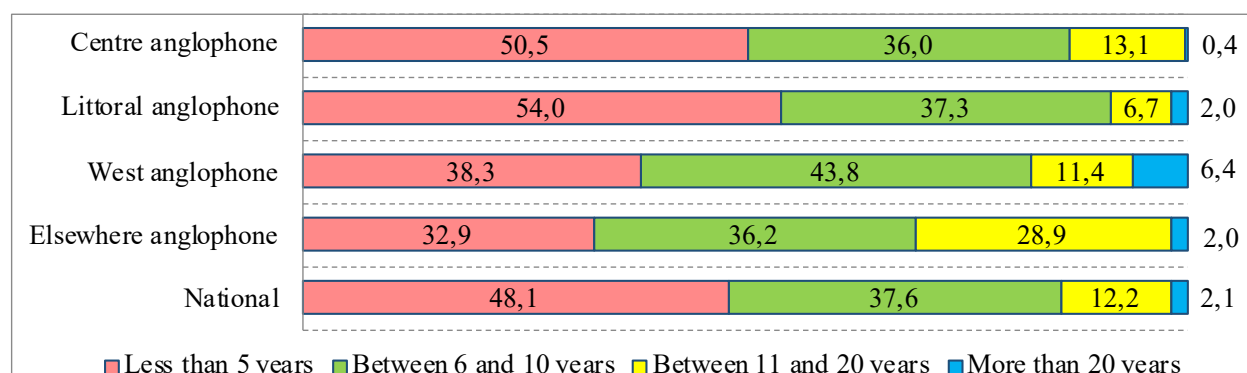
The graph below provides information on the scores of the Anglophone subsystem teachers surveyed in Reading Comprehension and Mathematics according to their seniority in teaching. In Reading Comprehension, in no stratum did teachers show a difference in scores compared to younger teachers.

In Mathematics, only in the Anglophone West did teachers with between 6 and 10 years' seniority score better than younger teachers. Elsewhere, teachers in the Anglophone subsystem had similar scores to their younger colleagues (less than 5 years).

Graph 175 : Scores of teachers in the English-speaking subsystem in Reading Comprehension and Mathematics according to seniority
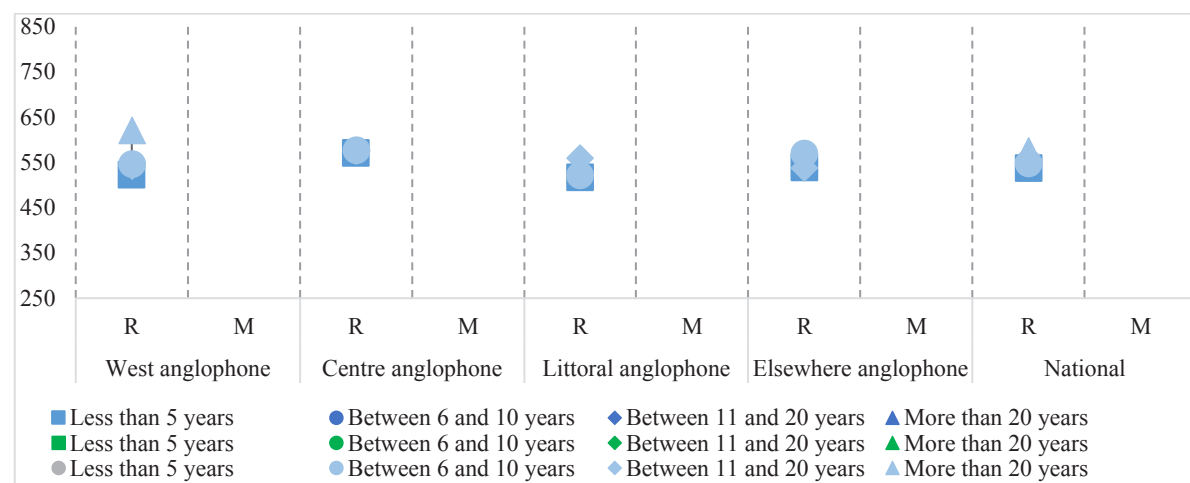
6.2.3 Academic level of the teachers surveyed

The sub-Saharan context is generally characterised by the low level of teacher training. Future primary school teachers generally begin their initial training in the countries with a low level of schooling: more than half of them have an upper secondary level (Akkari and Lauwerier, 2015), without necessarily having a diploma (World Bank, 2005; Bonnet, 2007). Civil servant teachers are generally recruited with a better initial educational level than contractual or community teachers (CONFEMEN, 2007).

This situation is the result of policy choices in recent decades, such as structural adjustment programs which in many countries have led to the early retirement of qualified teachers (Lauwerier, 2013), the closure and/or restructuring of teacher training colleges (Samaké, 2007).

However, the numerous studies on the influence of teacher education on the quality of learning remain reserved or opposed in their conclusions. The work of Wilson, Floden, and Ferrini-Mundy (2002) asserts that beyond a certain

point, additional university degrees do not really improve teaching effectiveness. In the same vein, Rivkin et al (2005) conclude their study by explaining that there is no evidence to suggest that having a Master's degree improves teaching skills. Woessmann (2001), on the other hand, analysing TIMSS data on the achievement of 13-year-olds in 39 countries, found a positive relationship between teacher education and pupil performance in Mathematics and science. The contradictory results on the link between teacher education and teacher effectiveness invite us to look at the scores of teachers, in terms of knowledge of the disciplinary contents taught, according to their level of education. In the present survey, data on their academic level were collected through the contextual questionnaire sent to teachers. The academic levels were divided into three categories to facilitate the analyses: primary education, secondary education and university education.

6.2.3.1 Academic level of teachers surveyed at national level

The graph below summarises the information collected by the contextual questionnaire by showing the distribution of teachers according to the three categories of academic level. At the national level in Cameroon, almost all teachers (99.4%) have an academic level above primary school. In addition, teachers with secondary education are in the majority in eight strata out of twelve (French-speaking East, French-speaking Littoral, French-speaking Center, French-speaking South, French-speaking Adamawa, French-speaking West, French-speaking Far North and French-speaking North), as the graph shows. The Francophone North has the highest percentage of secondary school graduates (91.0%). In the other four strata (Anglophone West, Anglophone Littoral, Anglophone Remainder and Anglophone Center), more than 60% of the teachers have a university academic level.

Graph 176 : Distribution of teachers according to their academic level
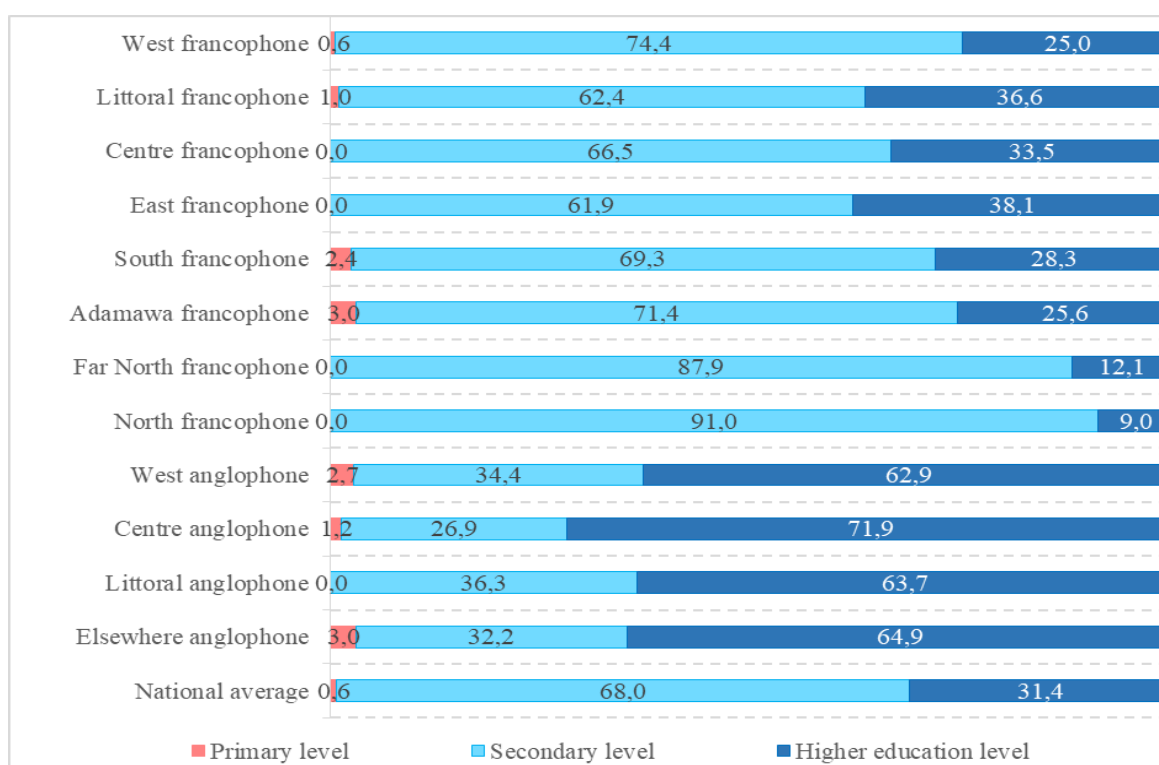
In half of the strata defined for Cameroon (Francophone Center, Francophone North, Francophone South, Anglophone Remainder, Francophone West and Francophone Littoral), teachers with a university academic level perform significantly better than those with a secondary level in Reading Comprehension. The highest score difference was 70.3 points in the Center francophone. Although the score differences in Adamawa Francophone and Littoral Anglophone are not significant, these two strata record the lowest differences but in favour of teachers with secondary academic level.

Graph 177 : Difference in Reading Comprehension scores between teachers with secondary education and those with university education
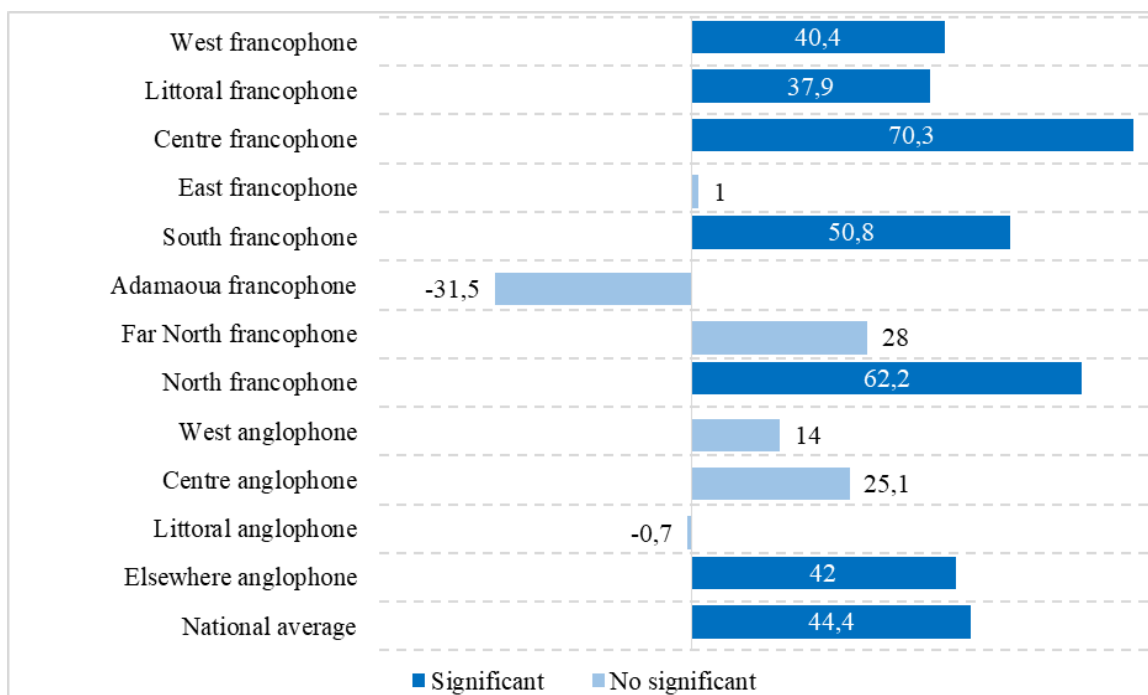
In Mathematics, the same trend was observed, where university-level teachers performed significantly better than their secondary-level colleagues in six strata (Littoral anglophone, Littoral francophone, West francophone, South francophone, North francophone and Center francophone). However, although the difference in scores between the two categories of teachers is not significant in the Francophone East and Francophone Adamawa, these two strata show the smallest differences in performance, but in favour of teachers with secondary education. These observations explore a promising avenue and suggest that reflections should be carried out in order to study in depth the links between the academic level of teachers and their level of mastery of disciplinary and didactic knowledge. These reflections could contribute to the debate raised in the introduction to this sub-section on the added value of university academic training on the level of mastery of teachers' knowledge and skills.

6

Graph 178 : Difference in Reading Comprehension scores between teachers with secondary education and those with university education
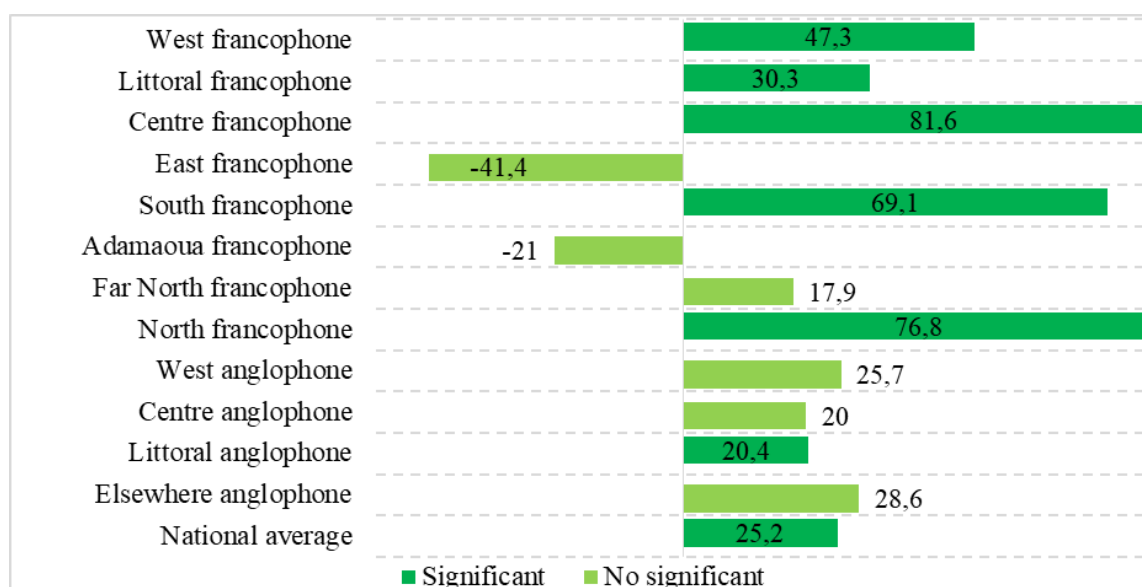
6.2.3.2   Academic level of the English-speaking Subsystem teachers surveyed

The graph below summarises the information gathered by the contextual questionnaire by showing the distribution of teachers in the English-speaking subsystem according to the three categories of academic level. At the national level in the Anglophone subsystem, almost all teachers (98.9%) have an academic level above primary school. Moreover, unlike the Francophone subsystem, Anglophone teachers with university level education are in the majority in all strata as shown in the graph below. The Anglophone Center with 71.9% has the highest proportion of university graduates. In the Anglophone Littoral strata, all teachers have at least secondary level education.

Graph 179 : Distribution of teachers in the Anglophone subsystem according to their academic level
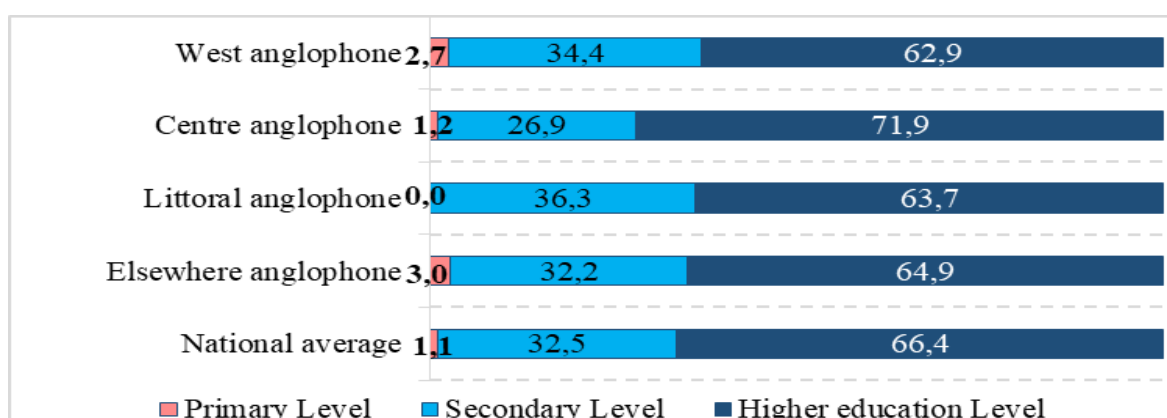
At the national level, in the Anglophone subsystem, teachers with a university academic level perform significantly better than their counterparts with only a secondary level. In the Rest of the Anglophone stratum, teachers with a university academic level perform better than those with a secondary school level in Reading Comprehension.

Although the difference in points in the Littoral anglophone is not significant, this stratum records the difference in favour of teachers with secondary school level.

Graph 180 : Difference in Reading Comprehension scores between secondary and university teachers in the Anglophone subsystem
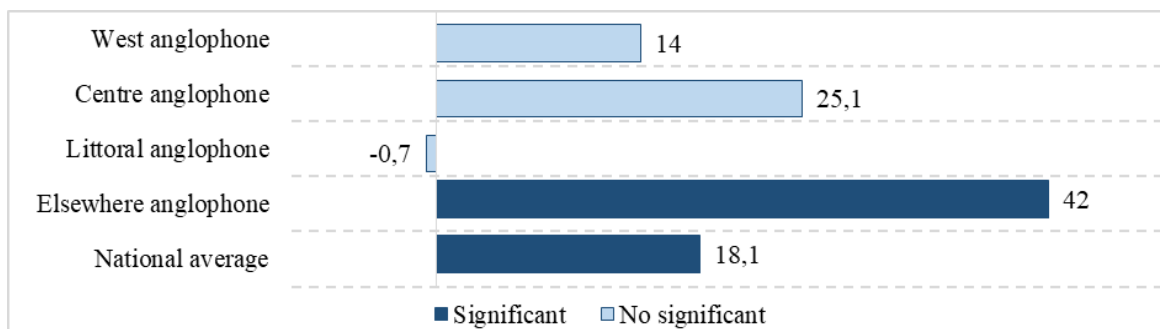
In Mathematics, the same trend was observed, where university-level teachers performed significantly better than their secondary-level colleagues in the Anglophone subsystem and at the national level. With the exception of the Anglophone Littoral, teachers with a university level of education perform similarly to those with a secondary level of education.

Graph 181 : Difference in Reading Comprehension scores between secondary and university level teachers in the English-speaking subsystem

6.2.4 Initial professional training of the teachers surveyed

The Education 2030 framework for action has led to a greater focus on improving the quality of education through the MDG4, which requires a sufficient number of qualified and motivated teachers (Dembélé and Sirois, 2018). However, the search for improved access within the framework of EFA (Education For All) had led sub-Saharan African countries to respond to the teacher shortage they were facing with several measures, including reducing the duration of their initial professional training (World Bank, 2010; UNESCO, 2009). In order to obtain updated information on this duration, related items were included in the questionnaire sent to teachers for the PASEC2019 evaluation, as was already the case for PASEC2014. Thus, the following graph shows the distribution of Cameroonian teachers according to the duration of their initial professional training.

6.2.4.1Initial professional training of teachers surveyed at national level

At the national level, an average of 10.9% of teachers without initial professional training was recorded, but this varied greatly between the different strata of the country. The percentage of teachers with no initial professional training is particularly high in the English-speaking center (34.0%). It is 22.2% in the Anglophone Littoral and 16.8% in the Anglophone Rest. The lowest percentages are observed in the Francophone North (4.8%) and the Francophone Center (6.0%).

Teachers with less than six months' initial training account for an average of 4.5% nationally. This category of teachers is strongly observed in the Francophone North with 18.6%. This stratum is followed by Francophone Adamawa (6%).

The proportion of teachers claiming to have benefited from one year of training represents an average of 30.8% at the national level. This category of teachers is well represented in the Anglophone West (57.8%), the Anglophone Littoral (55%), the Anglophone Rest (47.4%) and the Anglophone Center (42.3%). In the other strata of the country, this proportion varies between 11.2% in the French-speaking Far North and 37.3% in the French-speaking East.

The category of teachers with at least two years of initial professional training is the most represented at the national level with an average percentage of 53.8%. This proportion exceeds 50% in seven strata of Cameroon: French-speaking Far North (79.6%), French-speaking North (58.8%), French-speaking South (56.8%), French-speaking Adamawa (55.8%), French-speaking West (54.4%), French-speaking Center (53.9%) and French-speaking Littoral (51.2%).

These remarks open the door to future thematic studies on the possible links between the duration of initial training and the level of knowledge of teachers in order to get an idea of the quality of training arrangements. In the case of the seven strata where the percentage of teachers acknowledging that they had received at least two years of initial training exceeded 50%, a trend can be observed towards relatively satisfactory levels of disciplinary and didactic knowledge. In the Littoral francophone region, for example, where 51.2% of teachers said they had received at least two years of training, the scores for Reading Comprehension and Mathematics didactics were 545.6 and 522.8 respectively.

Graph 182 : Distribution of teachers by length of professional training
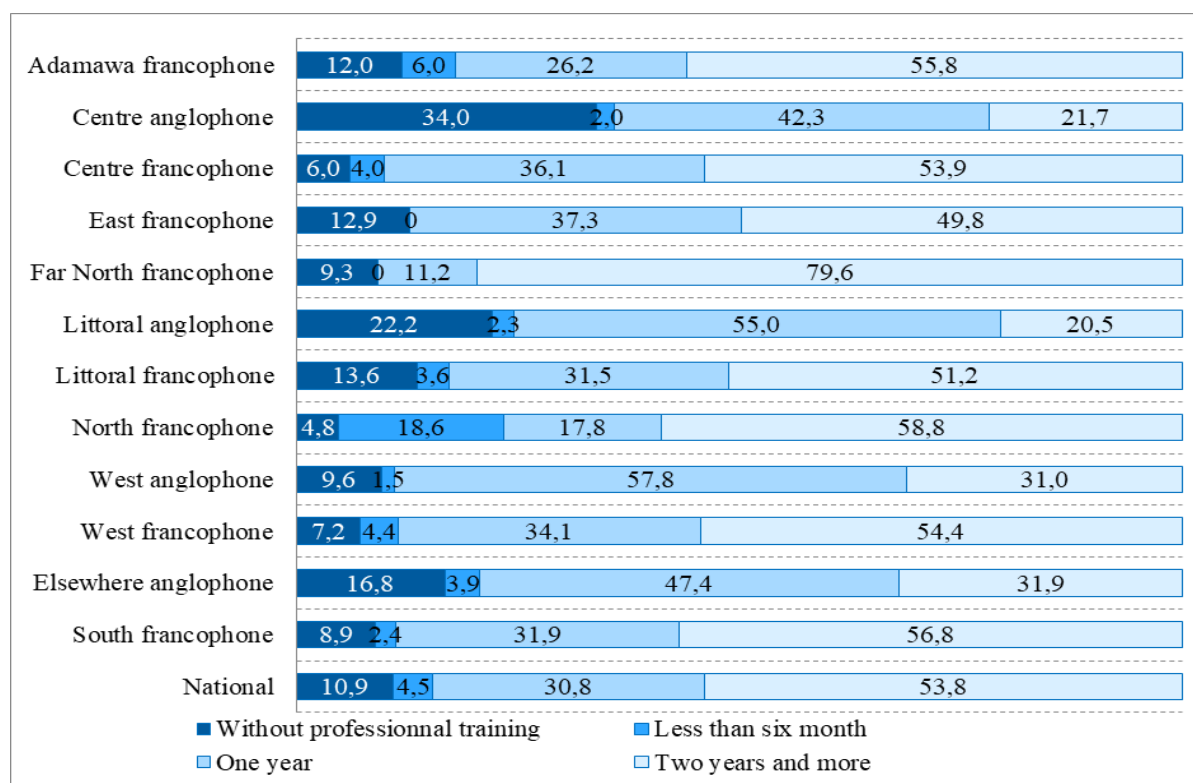
6.2.4.2 Initial professional training of surveyed teachers Of the English-speaking subsystem

At the national level, an average of 23.5% of teachers in the English-speaking subsystem had no initial professional training, but this varied greatly between strata. Indeed, the percentage of teachers with no initial professional training in this subsystem is high in the Anglophone Center (34%). The lowest percentage is observed in the Anglophone West (9.6%).

Teachers in the Anglophone subsystem with less than six months' initial training represent an average of 2.3% nationally. This category of teachers is strongly observed in the Anglophone Rest with 3.9%.

The proportion of teachers in the Anglophone sub-system who claim to have had one year of training represents an average of 50.4% at the national level. This category of teachers is well represented in all strata of the subsystem. In the strata of the Anglophone West (57.8%) and the Anglophone Littoral (55%), this exceeds half of their teachers. In the other two strata of the country, this proportion is 47.4% in the Anglophone Rest and 42.3% in the Anglophone Center.

The category of teachers in the Anglophone sub-system who have had at least two years of initial professional training is 23.7% at the national level. This proportion varies between 20.5% in the Anglophone Littoral and 31.9% in the Anglophone Remainder.

Graph 183: Distribution of teachers in the English-speaking subsystem according to the duration of their professional training
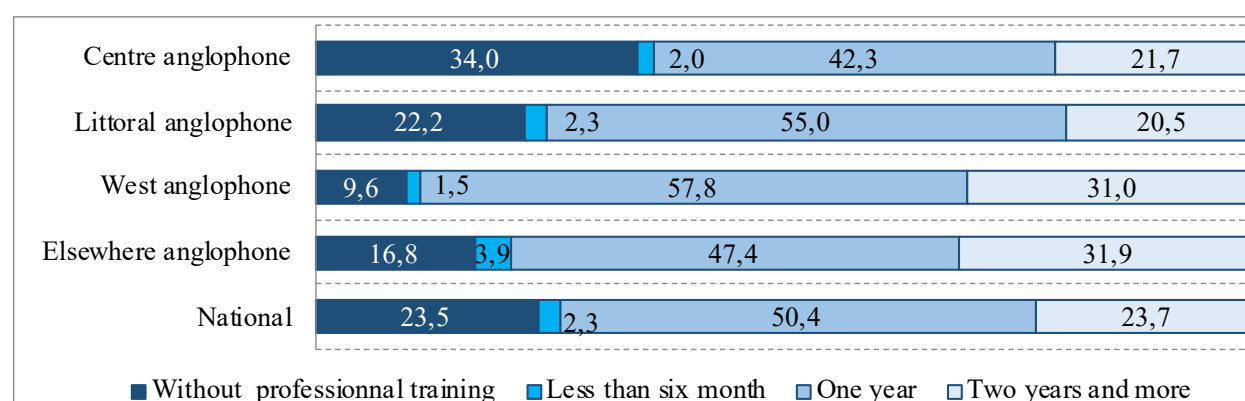
6.2.5 In-service and complementary training of teachers

During their careers, teachers acquire or update their skills through continuing education activities: long-term training, peer training or mentoring, seminars, personal reading, training workshops and debates (Savoie-Zajc et al., 1999; Youdi, 2006). These teaching skills are technical and didactic (Altet, 1994) and enable career performance (Baribeau, 2009; Bidjang, 2005) in order to better initiate the teaching-learning activity (Ekanga Lokoka, 2013; Masselter, 2004) and improve pupils' academic performance (Etumangele, 2006; Mulele, 2017; Vita, 2014).

In-service training is of particular importance in the Cameroonian context because it constitutes a real opportunity to compensate in part for the shortcomings of initial training, or even its non-existence (Lauwerier and Akkari, 2015).

The contextual data of the PASEC2019 survey and the results of teachers in the tests of knowledge and skills of the contents taught make it possible to analyse the scores of teachers according to whether or not they have benefited from complementary training over the last two years (pedagogical training course, training seminar, pedagogical animation cell).

6

6.2.5.1. In-service and complementary training of in-service teachers
At national level

The graph below shows the distribution of teachers according to whether or not they have benefited from additional in-service training.

Graph 184 : Distribution of teachers according to whether or not they have received in-service training

Stratum	Received	Did not receive
West francophone	88.0	12.0
Littoral francophone	84.1	15.9
Centre francophone	92.8	7.2
East francophone	65.3	34.7
South francophone	95.0	5.0
Adamawa francophone	89.1	10.9
Far North francophone	97.0	3.0
North francophone	92.4	7.6
West anglophone	86.4	13.6
Centre anglophone	86.2	13.8
Littoral anglophone	84.5	15.5
Elsewhere anglophone	89.7	10.3
National average	89.6	10.4

■ Teacher recieved in-service training ☐ Teacher did not recieve in-service training

The graph above shows that in all strata of Cameroon, a high proportion of teachers have received additional in-service training. The highest proportions are in the Francophone North (92.4%), the Francophone Center (92.8%), the Francophone South (95%) and the Francophone Far North (97%).

The Francophone East, with 65.3%, has the lowest proportion of teachers who have received additional in-service training.

Graph 185 : Difference in reading literacy scores between teachers who received in-service training and those who did not
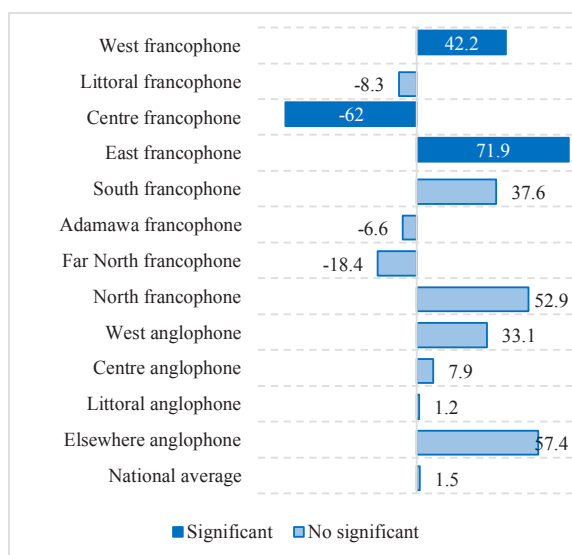
Graph 186 : Difference between the Mathematics scores of teachers who received in-service training and those who did not
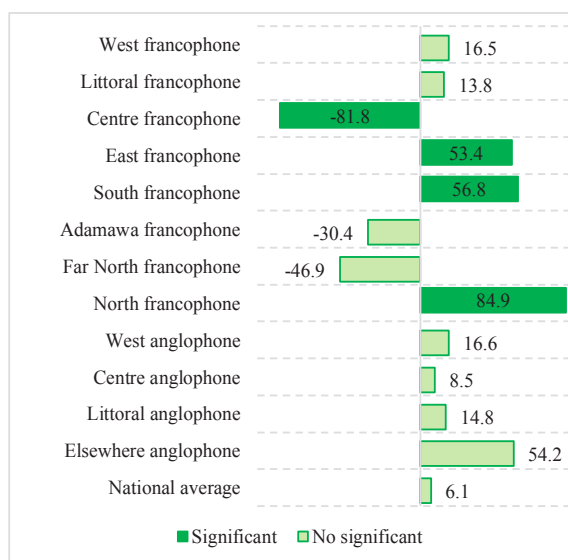
At the national level, the two graphs above show that there are no statistically significant differences between teachers who have benefited from additional training and those who have not. However, an analysis according to strata allows us to note some differences for certain strata.

In Reading Comprehension, it was observed that in the Francophone East and Francophone West, teachers who had received additional training obtained better scores than teachers who had not received this training, with a difference of 71.9 points and 42.2 points respectively. On the other hand, in the Center francophone stratum, teachers who had not received training scored better than their counterparts who had received additional training, with a difference of 62.0 points. In the other strata, the average scores did not differ significantly between the two categories of teachers

In Mathematics, we note that in the three following strata, the Francophone North, the Francophone South and the Francophone East, teachers who had received additional training obtained better scores than teachers who had not received such training, with respective differences of 84.9 points, 56.8 points and 53.4 points. As in Reading Comprehension, the Center francophone stratum showed the same behaviour in Mathematics, where teachers who had not received training obtained better scores than their counterparts who had received additional training, this time with a difference of 81.8 points. In the other strata, there was no significant difference between the average scores of the two categories of teachers.

These findings should not lead to the conclusion that in-service training is ineffective for teachers' professional development. Rather, they lead us to question the quality of the in-service training from which the teachers acknowledge having benefited. Indeed, the effectiveness of in-service training could be linked to compliance with certain conditions. One of these conditions is, according to Salman (2014), that in-service training activities meet the priority training needs of the teachers concerned. Masselter (2004) stresses the fact that in-service training should complement and readjust initial training, in particular through greater consideration of the reality of the classroom. To this end, Altet (1994) insists on the fact that in-service training should provoke and encourage change in teachers in order to make learning successful.

6

6.2.5.2.   In-service and complementary training of teachers In the English-speaking subsystem

The graph below shows the distribution of teachers in the English-speaking subsystem according to whether or not they had received further in-service training.

This graph shows that in all strata of the Anglophone subsystem in Cameroon, a high proportion of teachers have benefited from in-service training. The highest proportion is in the Anglophone Rest with 89.7%.

The lowest proportion of teachers in the Anglophone sub-system who have benefited from in-service training is in the Anglophone Littoral with 84.5%.

Graph 187: Distribution of teachers in the English-speaking subsystem according to whether or not they have received in-service training
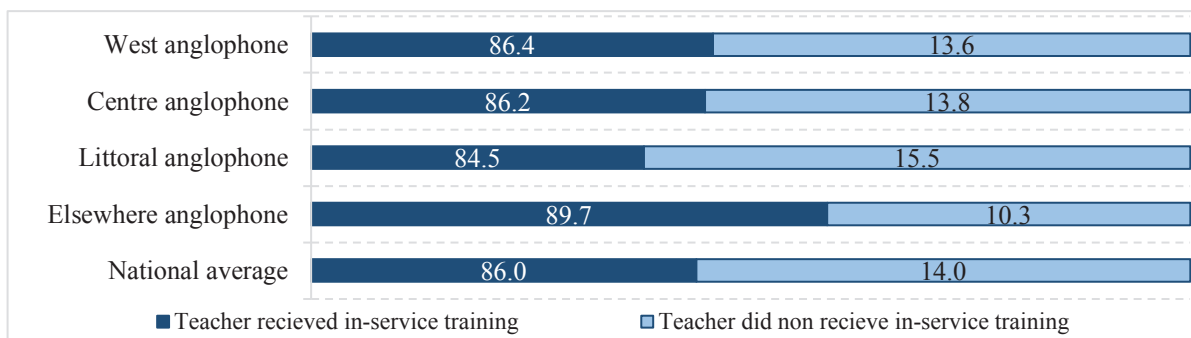
In the Anglophone subsystem, at the national level, the two graphs below show that there are no statistically significant differences between teachers who have benefited from additional training and teachers who have not benefited from this training in Reading Comprehension and Mathematics. An analysis by strata also shows that the scores of teachers who had received in-service training were similar to those of teachers who had not in all strata.

Graph 188: Difference in Reading Comprehension scores between teachers in the English-speaking subsystem who received in-service training and those who did not

Graph 189: Difference between the Mathematics scores of teachers in the English-speaking subsystem who received in-service training and those who did not
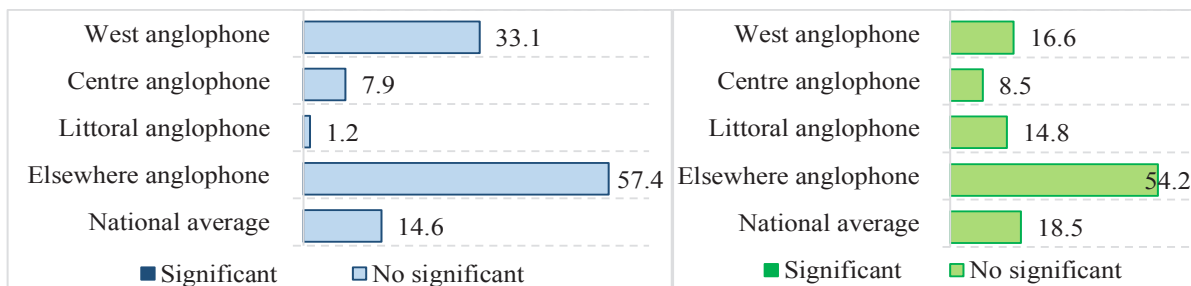
These findings lead one to question the quality of the in-service training from which the teachers of the English-speaking sub-system acknowledge having benefited.

6.2.6   Area of Mathematics to which the surveyed Teachers devote the most time in class

In order to find out which areas of mathematics teachers find most difficult and which are least covered in their lessons, the PASEC2019 survey included the following question in the questionnaire submitted to teachers: "In mathematics, which area do you spend the most time learning?"

6.2.6.1.   Area of Mathematics to which the surveyed teachers allocate The most time in class at national level

The graph below presents the responses to the question of the area of Mathematics to which teachers allocate most time according to strata.

The analysis of these responses shows that the vast majority of teachers surveyed give more time to numbering and operations (86.2% at the national level). Conversely, the teachers surveyed admitted to giving very little time to geometry (9.7% national average) and even less to measurement (4.1% national average).

This finding could refer to institutional time, i.e. the time set aside for each of these areas by the official curricula. However, Chopin (2006) indicates that this institutional time is largely manipulated by teachers according to their comfort level in teaching certain subjects or areas of the said subjects. This leads us to interpret this observation rather from a didactic angle and to link it to the satisfactory level of mastery of disciplinary knowledge and skills of these teachers in the field of numeracy and operations (see section 6.1 of this report).

It is therefore not unreasonable to interpret the lesser amount of time devoted to teaching geometry as a manifestation of a lesser mastery of knowledge and skills in this area of Mathematics by the teachers surveyed. Indeed, research shows that while primary school teachers generally have difficulties in teaching Mathematics, geometry is the area in which these difficulties are greatest (Boublil-Ekimova, 2010). Therefore, pre-service and in-service training should give an important place to Mathematics and especially geometry in order to better prepare for their teaching and learning. Such actions should focus on a joint development of disciplinary and didactic knowledge and skills as shown by the observations in section 6.1 and many research results cited in the previous section.

Graph 190: Distribution of Mathematics areas to which teachers allocate the most learning time
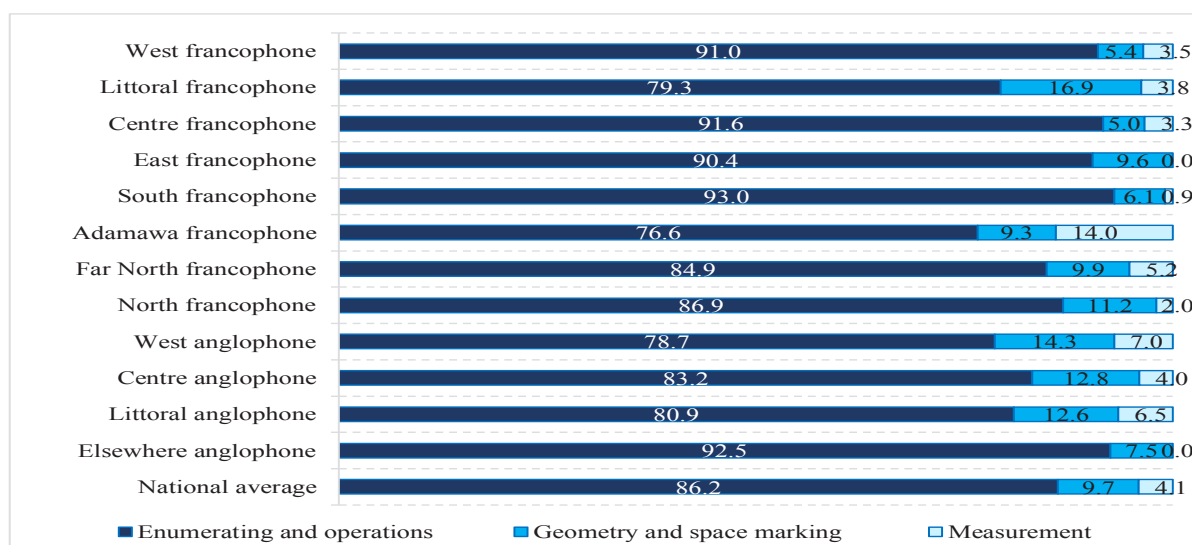
62.6.2.   Area of Mathematics to which the surveyed teachers
Of the Anglophone subsystem allocate the most time in class

The graph below shows the responses to the question of which area of Mathematics teachers in the Anglophone subsystem spend the most time on according to strata.

The analysis of the graph below shows that the vast majority of the Anglophone subsystem teachers surveyed give more time to numbering and operations with 83.0% of the national average. In contrast, the teachers surveyed admit to giving very little time to geometry and spatial location (12.1% national average) and even less to measurement (4.8% national average).

This observation could refer to institutional time, i.e. the time reserved for each of these areas by the official curricula. However, Chopin (2006) indicates that this institutional time is largely manipulated by teachers according to their ease in teaching certain subjects or areas of the said subjects.

Graph 191: Distribution of the Mathematics domains to which teachers in the Anglophone subsystem allocate the most learning time

	Enumerating and operations	Geometry and space marking	Measurement
West anglophone	78.7	14.3	7.0
Centre anglophone	83.2	12.8	4.0
Littoral anglophone	80.9	12.6	6.5
Elsewhere anglophone	92.5	7.5	0.0
National average	83.0	12.1	4.8
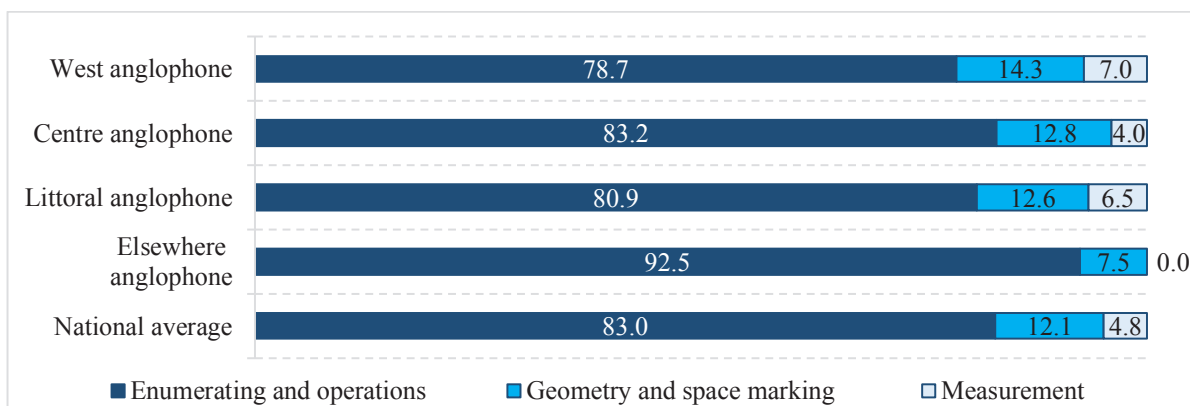
6.2.7 Level of equipment of classes

The level of equipment of the classes is analysed through a synthetic index whose description is presented in the following box.

Box 6.1: Description of the classroom equipment index

The level of classroom equipment necessary for learning is determined through a series of questions concerning the availability of textbooks for pupils, documents and teaching materials for teachers and classroom furniture. The following items are explored for this purpose: number of Mathematics and reading textbooks available per pupil; availability of textbooks, teaching guides and reading and Mathematics programs for the teacher; availability of teaching materials (blackboard, chalk, dictionary, globe, map of Africa, map of the country, measuring equipment such as squares, compasses and rulers, and clocks); and availability of classroom furniture (desk and chair for the teacher, cupboard and shelves for storing books, and a sufficient number of bench tables), and electricity. The responses obtained are summarised on a scale of mean 50 and standard deviation 10. Thus, the higher the index, the better the equipment in the classrooms. The index is not in itself an indicator for specifically measuring the degree of equipment in classes in relation to a predefined standard. Rather, it aims to produce a ranking along a single dimension from the variables measuring the equipment of classes.

6.2.7.1 Classroom equipment index at national level

The graph below shows the average level of the class equipment index by stratum. The national average level of classroom equipment at the end of the school year is 47.2. According to strata, the highest levels in Cameroon are found in the Anglophone Littoral (56.7), Francophone Littoral (54.1) and Francophone Center (50.3). The lowest levels of the index are found in the Anglophone Rest (44.2), Francophone Far North (42.6) and Francophone Adamawa (41.6). The detailed analysis of the elements used to construct this index shows that there are schools in the strata that do not have certain elements in their classrooms, such as a desk and chair for the teacher, teaching guides, rulers for the blackboard, shelves for books, etc. In some cases, there is no teacher's desk or chair in the classroom. In some cases, there is not even a blackboard (wall or mobile).

On the same graph, the indicator of dispersion (the standard deviation) of the average of the index within each stratum shows that the degree of homogeneity in the distribution of equipment between schools is not satisfactory depending on the stratum. Relatively higher disparities are observed in the Francophone Center and the Francophone Far North. It can be seen that the Anglophone Littoral combines the highest level of classroom equipment and a better allocation between schools compared to the other strata.

Graph 192: Average level of the class equipment index and standard deviation - School Leavers
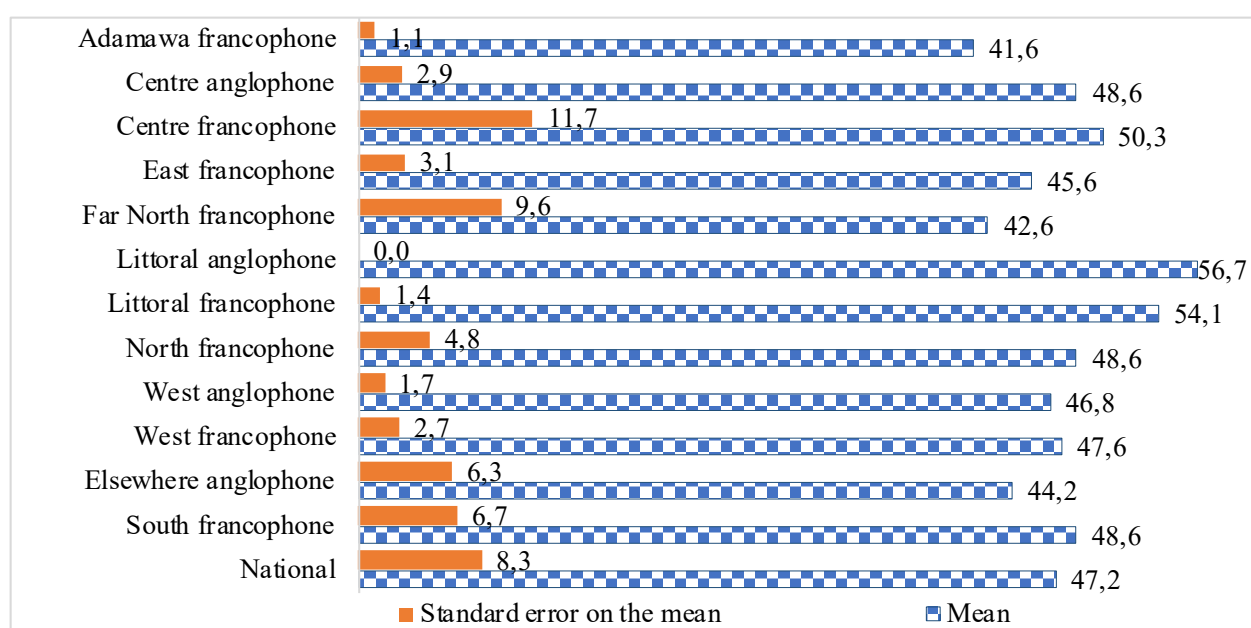
6.2.7.2 Level of equipment of classes in the Anglophone subsystem

The graph below shows the average level of the equipment index of classes in the English-speaking subsystem by stratum. The national average level of equipment of classes at the end of schooling is 46.9. According to the strata of this sub-system, the highest levels in Cameroon are found in the Anglophone Littoral (56.7) and the Anglophone Center (48.6). The lowest levels of the class equipment index are found in the Anglophone Rest (44.2) and the Anglophone West (46.8). The detailed analysis of the elements used to construct this index shows that there are schools in the Anglophone subsystem that do not have certain elements in their classrooms, such as a desk and chair for the teacher, teaching guides, rulers for the blackboard, shelves for books, etc. In some cases, there is no equipment in the classroom, and the teacher is not able to use it. In some cases, there is not even a blackboard (wall or mobile).

On the same graph, the indicator of dispersion (the standard deviation) of the average of the index within each stratum shows that the degree of homogeneity in the distribution of equipment between schools in the English-speaking subsystem is not satisfactory depending on the stratum. The relatively higher disparity is observed in the Anglophone Rest (6.3). It can be seen that the Littoral anglophone region combines the highest level of the

classroom equipment index with a better allocation between schools (zero standard deviation) compared to the other strata of the sub-system.

Graph 193: Average level of the equipment index of the English-speaking subsystem class and standard deviation - End of schooling
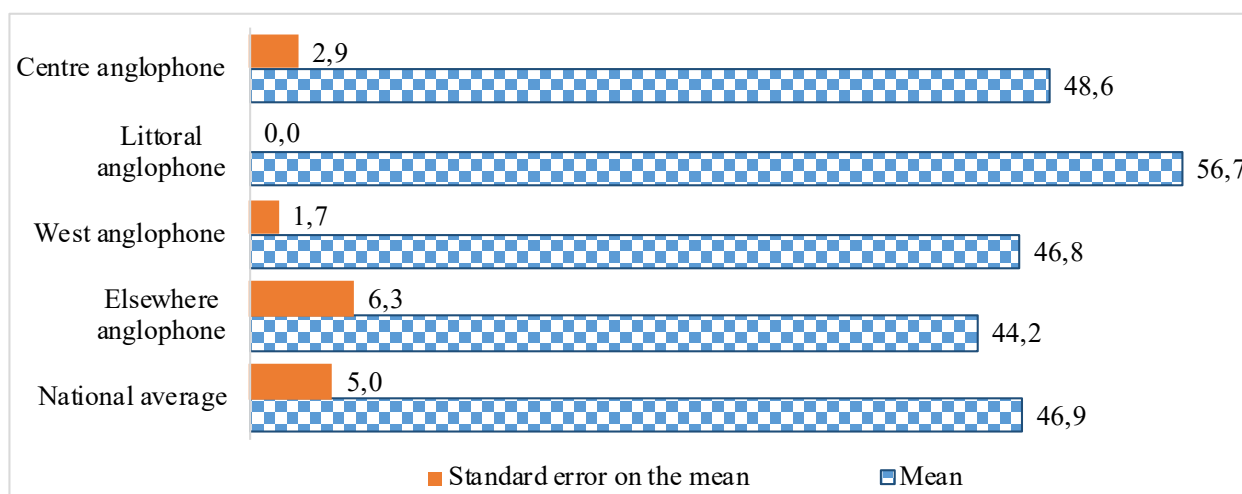
6.3 TEACHERS' PERCEPTION OF THEIR MATERIAL AND SOCIAL WORKING CONDITIONS

6.3.1. Teachers' perception of their material And pedagogical conditions

The implementation of teaching-learning requires, among other things, the availability of certain material and pedagogical conditions: an adequate physical environment, a teaching program, sufficient and good quality teaching materials. Outdated school buildings, crowded classrooms, staff rooms and lack of toilets (IICBA, 2017), availability of teaching and learning materials (Fullan & Hargreaves, 1997) are all factors cited in country studies as affecting teacher morale. According to the UNESCO Policy Guide for the Professional Development of Teachers, policies for the employment and welfare of teachers have a direct and indirect impact on teacher morale and motivation. This in turn affects the attractiveness of the teaching profession, its retention capacity and staff commitment (IICBA, 2018). In the PASEC2019 survey, the teacher questionnaire measures their level of satisfaction with their material and pedagogical conditions of practice. Teachers' perception of their general working conditions is analysed through a specific index.

Box 6.2: Description of the working conditions perception index

 The teacher questionnaire collected information on their general working conditions. The responses to these questions are reported on a national scale of mean 50 and standard deviation 10 in order to construct a single index. High values of the index correspond to favourable perceptions, while low values are associated with unfavourable perceptions. The index is not in itself an indicator that specifically measures the degree to which teachers are perceived to be performing to an international or national standard. Its main purpose is to produce a ranking on a single dimension from the variables measuring different perceptions. The index is constructed from an item response model using teachers' statements on their perceptions of their general working conditions (curriculum, quality of buildings, availability of school supplies, quality of school management, relationship with colleagues, opportunities for promotion, training, etc.).

6.3.1.1 Teachers' perception of their material and pedagogical conditions At the national level

The graph below gives the value of this index at the national level and for each stratum in Cameroon. The national average in Cameroon is 49.5. The highest values of the index are observed in the Anglophone Center (54.9), in Francophone Adamawa (53.4), in the Francophone North (51.0) and in the Francophone Far North (50. 8). However, the margins of variation between the strata are low (from 39.1 in the French-speaking South to 54.6 in the English-speaking Center).

Graph 194: Average level of the index of perception of the material and pedagogical condition of work - End of schooling
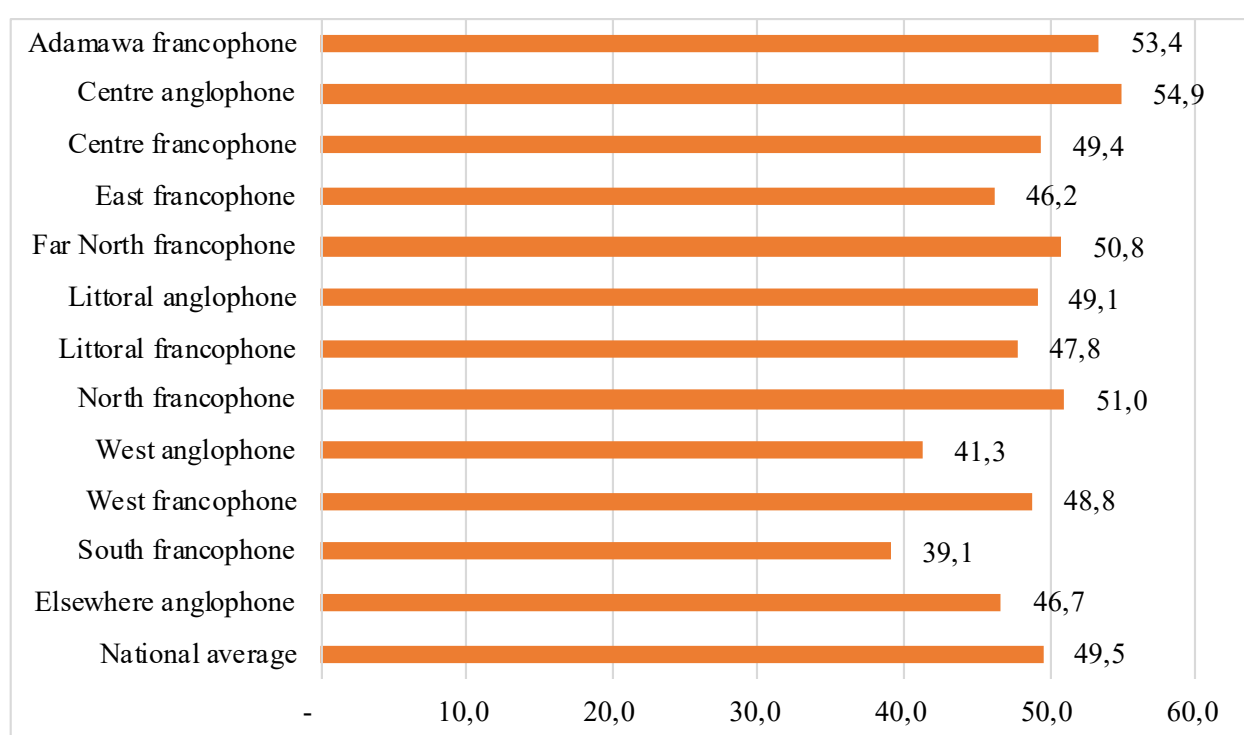
The graph below shows the proportion of teachers with a good and very good perception of the quality of the curriculum, the quality of buildings and the availability of school supplies.

At the national level, teachers have an overall satisfactory perception of school programs. More than 50.2% of teachers consider that school programs are at least of good quality in Cameroon. This proportion is particularly high in the Anglophone Rest (59%), the Anglophone Center (58.7%), the Francophone East (55.8%) and the Anglophone Littoral (55.5%). For the other strata, it varies from 40.7% in the Francophone West to 54% in the Francophone South.

The quality of buildings is judged to be at least 50% good by teachers in four strata (Francophone South (60.6%), Francophone Adamawa (55.8%), Francophone Center (54.5%) and Francophone North (52.4%)). This proportion is particularly low in the Francophone West (38.1%), the Anglophone Center (33.3%), the Anglophone Littoral (33.1%), the Anglophone Rest (32.1%), the Anglophone West (29.2%) and the Francophone Far North (26.3%).

In Cameroon, the availability of school supplies is less well perceived throughout the country, with only 28.5% of teachers having at least a good perception. The availability of school supplies is well perceived by more than 40% of teachers in only one stratum (Center francophone (44.5%)). In the other strata, it is less well perceived, especially in the Francophone East (11%), the Francophone North (17.8%) and the Francophone Far North (19.2%). In the other strata, this proportion varies from 20.8% in the Francophone West to 39.6% in the Anglophone Center.

Graph 195 : Proportion of teachers with at least a good perception of the quality of the curriculum, buildings and availability of school supplies
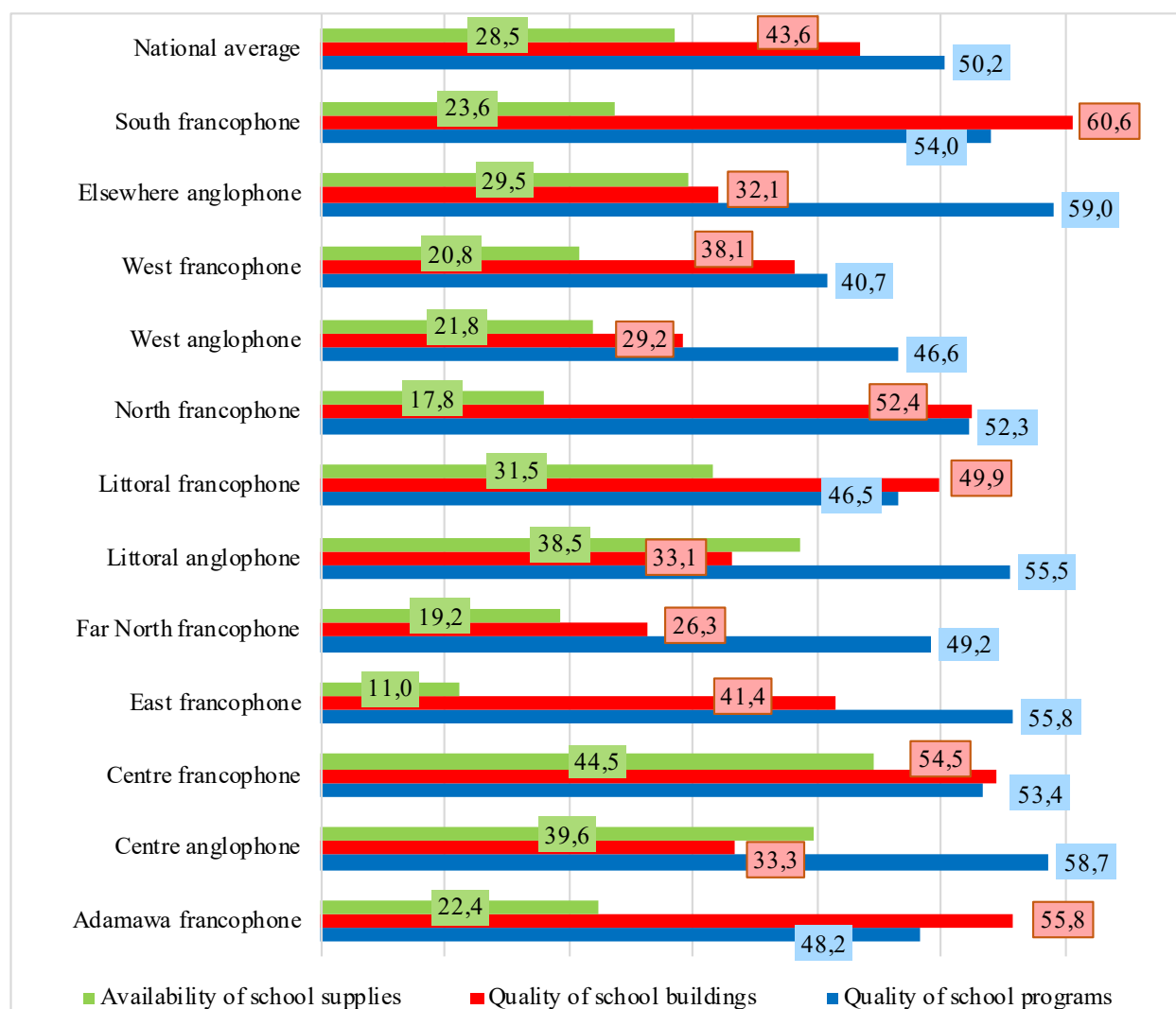
6.3.1.2 Perception of teachers in the Anglophone subsystem of their material and pedagogical conditions

The graph below shows the value of this perception index in the Anglophone subsystem and for each of its strata. The national average in the subsystem is 50.7. The highest value of this index is found in the Anglophone Center (54.9). However, the margins of variation between the other strata are small (from 41.3 in the Anglophone West to 49.1 in the Anglophone Littoral)

Graph 196: Average level of the index of perception of the material and pedagogical condition of work in the Anglophone sub-system - End of schooling

The graph below shows the proportion of teachers in the Anglophone subsystem who have a good or very good perception of the quality of the curriculum, the quality of buildings and the availability of school supplies.

At the national level, 55.8% of teachers in the Anglophone subsystem have a satisfactory perception of school programs. This proportion is high in half of the strata (Rest Anglophone (59.0%) and Center Anglophone (58.7%)). Only the Western Anglophone stratum has a proportion of 46.6% below parity.

The quality of buildings is judged unsatisfactory by more than 65% of teachers in the Anglophone subsystem in all four strata. The proportion of teachers who rate the quality of buildings as satisfactory is low in the Anglophone subsystem. At the national level, this proportion of satisfied teachers is 32.5%, and in the strata it varies from 29.2% in the Anglophone West to 33.3% in the Anglophone Center.

In the Anglophone sub-system of Cameroon, the availability of school supplies is less well perceived throughout the national territory with only 35.5% of teachers having a good or very good perception. The availability of school supplies is worse in the strata and the proportions of teachers who consider this availability to be good or very good vary between 21.8% in the Anglophone West and 39.6% in the Anglophone Center.

Graph 197 : Proportion of teachers in the Anglophone subsystem with at least a good perception of the quality of the curriculum, buildings and availability of school supplies
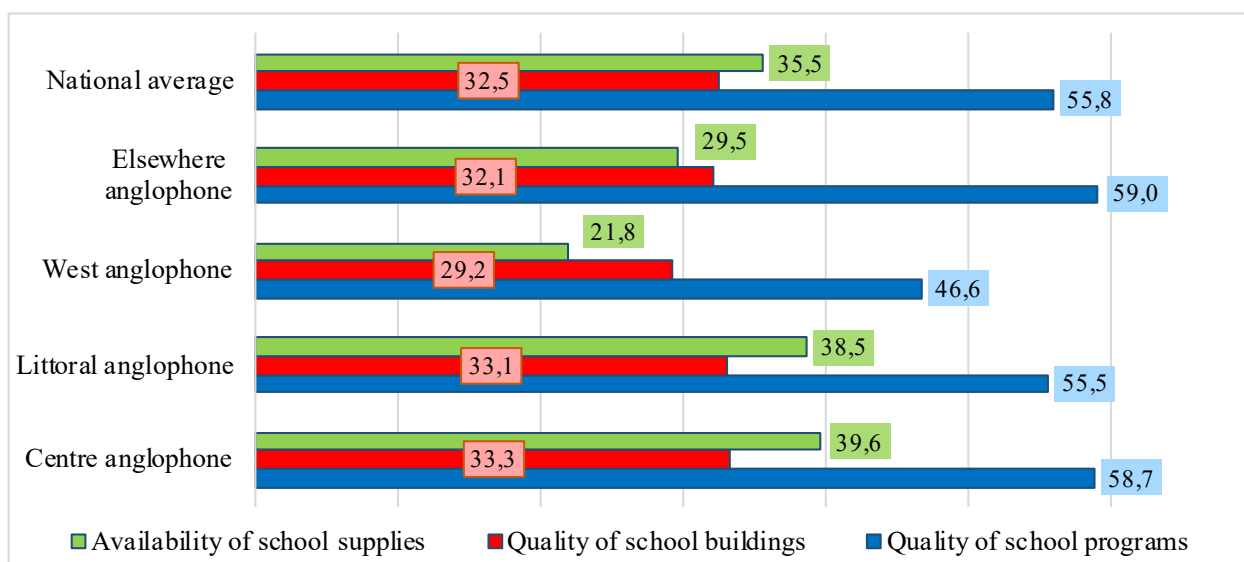
6.3.2.   Perception of harassment in schools

Bullying has been identified as an extremely important stressor and self-deprecating factor for victims (Debarbieux, 2001). Although research on peer-to-peer bullying has focused particularly on pupils in schools, it is recognised that it is prevalent among adults (Debarbieux, 2001). Shriberg's (2007, 2008) research in Liberia found that sexual abuse and exploitation of pupils and teachers was common in schools and that little was done to ensure compliance with professional codes of conduct or to encourage male teachers to behave more professionally. According to recent studies in West Africa (Diallo, 2018; Coulibaly, 2013), teachers report being 'bothered by sexual matters' in schools. These moral or sexual victimisations of the teacher can be caused by peers, pupils, parents of pupils or by the hierarchy.

6.3.2.1 Perception of harassment in schools at national level

The PASEC2019 survey makes it possible to assess the prevalence of moral and sexual harassment of teachers in schools in the different strata of Cameroon. In all strata, teachers mention the issue of moral and sexual harassment. The proportions of teachers who report the existence of sexual harassment are much lower than those of moral harassment. At national level, the proportions of moral and sexual harassment are 25.4% and 2.7% respectively. The highest proportions are in the French-speaking East (33.3% and 10.6%) and the French-speaking North (31.2% and 7.8%).

Graph 198 : Proportion of teachers who say that moral or sexual harassment exists in the school

Stratum	Sexual harassment	Moral harassment
Adamawa francophone	4,6	12,0
Centre anglophone	3,0	21,4
Centre francophone	0,0	22,1
Est francophone	10,6	33,3
Far North francophone	2,8	29,0
Littoral anglophone	0,9	12,5
Littoral francophone	2,5	29,9
North francophone	7,8	31,2
West anglophone	1,8	20,3
West francophone	1,0	28,6
Elsewhere anglophone	4,6	23,1
South francophone	3,0	27,2
National average	2,7	25,4
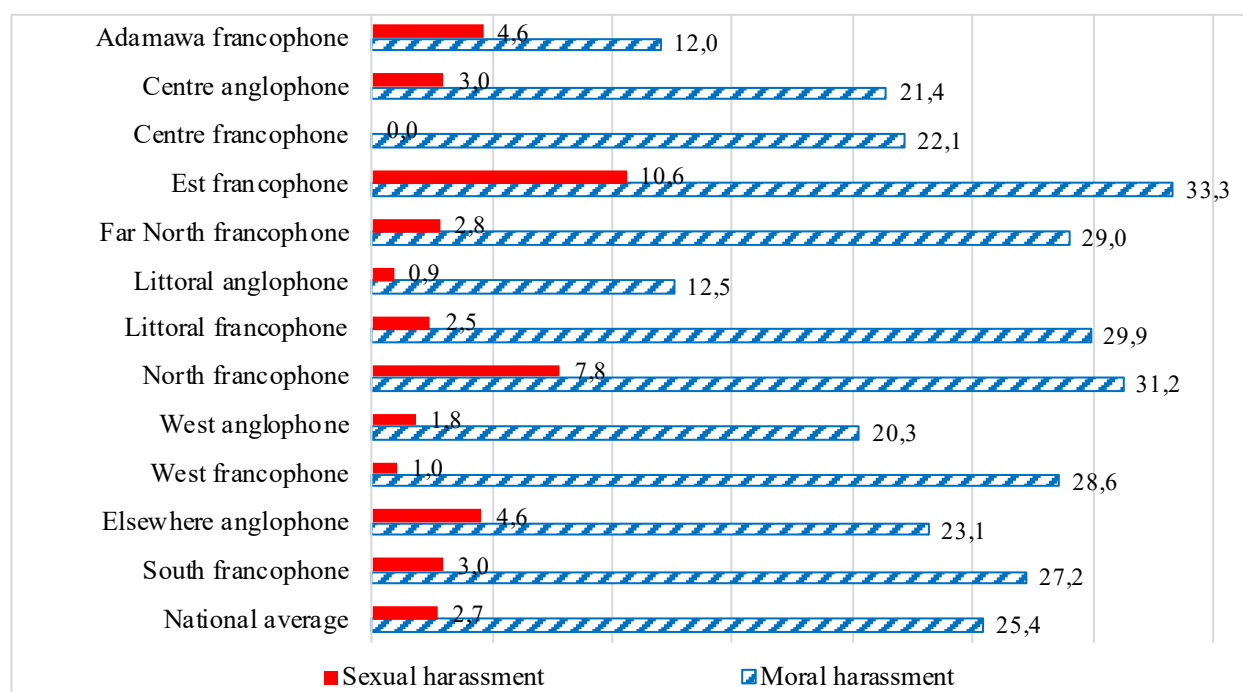
6.3.2.2 Perception of harassment in schools in the Anglophone subsystem

The PASEC2019 survey makes it possible to assess the prevalence of moral and sexual harassment among teachers in the Anglophone subsystem in the various strata. In all strata of the sub-system, teachers report being victims of moral or sexual harassment. The proportions of teachers who declare the existence of (being victims of) sexual harassment are much lower than those of moral harassment. At the national level, the proportions of teachers who are victims of moral or sexual harassment are 17.7% and 2.1% respectively. These proportions in the strata vary between (23.1% and 4.6%) in the Anglophone Rest and (12.5% and 0.9%) in the Anglophone Littoral.

Graph 199 : Proportion of teachers in the English-speaking subsystem who state that moral or sexual harassment exists in the school
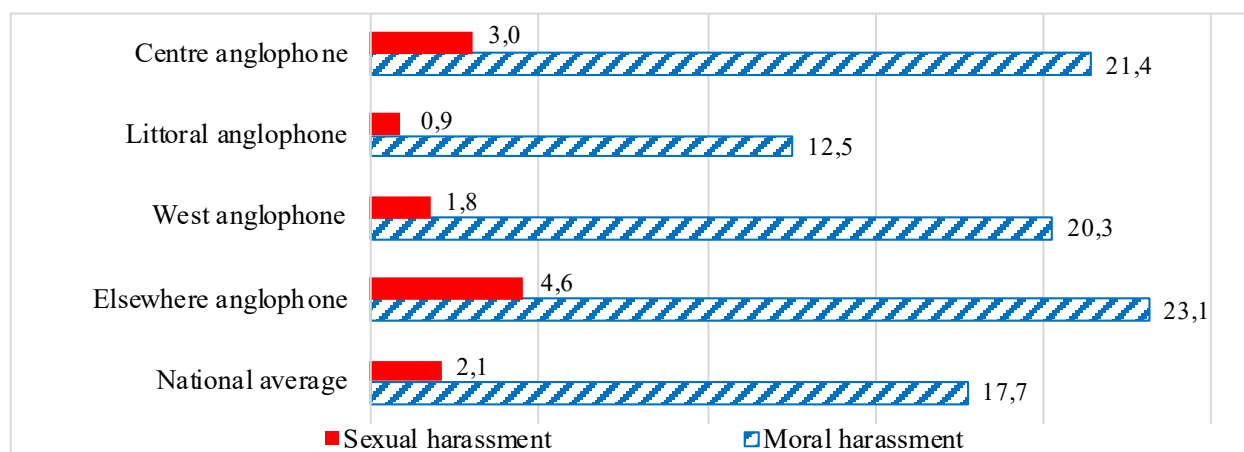
6.3.3. Perception of school management and the quality of professional and community relations

According to the work of Michaelowa (2002), de Pontefract, Bonnet and Vivekanandan (2013), teacher job satisfaction is a complex issue that goes beyond salary issues. A supportive environment, societal respect or the ability of teachers to be heard at the national level are also essential to them. Indeed, many studies have shown the decisive role of teachers' integration into the community and their recognition, especially by parents, as a motivating factor (Bennell and Akyeampong, 2007; Maroy, 2008; Nishimura et al., 2009).

According to Suchaut (2003), the greater the degree of integration of the teacher into the community, the better the results for the pupils. Other studies show that friendships between staff (Hedges, 2002) or warm teacher-pupil relationships (Kouraogo and Ouedraogo, 2009) can also positively influence teacher retention in schools in remote areas. In the sub-Saharan context, with regard to school management, it is generally found that the establishment of school management committees (SMCs) has brought schools closer to communities to the extent that it has positively influenced teacher motivation - firstly by raising the status of education in the eyes of the community and, secondly, by involving parents in the maintenance of school facilities and teachers' housing (IICBA, 2017).

6.3.3.1. Perceptions of school management and the quality of professional and community relations at the national level.

In the PASEC2019 survey, overall in Cameroon, teachers assess the management of their school negatively. On average, 54.1% of teachers at the national level say that the management of their school is not good. This negative perception is observed in all strata defined in Cameroon, except in the Anglophone Littoral, the Francophone Center, the Francophone South and the Francophone North.

6

Graph 200 : Proportion of teachers by level of perception of school management

	Bad	Average	Good	Very good
National average	14,3	39,9	39,3	6,5
South francophone	12,2	37,5	43,2	7,1
Elsewhere anglophone	20,5	41,4	28,9	9,2
West francophone	22,6	41,7	33,2	2,4
West anglophone	18,2	39,1	37,9	4,8
North francophone	11,5	38,4	43,7	6,5
Littoral francophone	16,7	41,8	34,0	7,5
Littoral anglophone	9,0	39,5	44,6	6,8
Far-North francophone	14,2	39,6	37,4	8,7
East francophone	9,9	47,2	37,1	5,9
Centre francophone	11,8	37,4	43,8	7,0
Centre anglophone	9,3	41,9	44,6	4,2
Adamawa francophone	13,0	38,4	42,2	6,4

In all strata of the country, a large majority of teachers consider that relations among colleagues are positive. The highest proportions of satisfaction are observed in Francophone Adamawa, Anglophone Center, Francophone Far North and Francophone North. The graph below shows the proportion of teachers according to their level of appreciation of relations with their colleagues.

Graph 201: Proportion of teachers according to their perception of the quality of relations with their colleagues

	Bad	Average	Good	Very good
Adamawa francophone	2.	3.6	63.1	31.2
Centre anglophone	0.4	8.0	57.4	34.2
Centre francophone	0.0	12.8	59.7	27.5
East francophone	0.0	12.7	69.7	17.6
Far North francophone	2.8	6.3	48.9	42.1
Littoral anglophone	0.0	12.7	55.2	32.1
Littoral francophone	0.4	18.2	58.2	23.1
North francophone	0.0	9.7	61.2	29.1
West anglophone	1.5	9.4	44.8	44.3
West francophone	0.0	15.4	48.9	35.7
South francophone	2.5	8.9	67.6	21.1
Elsewhere anglophone	3.3	15.0	44.6	37.1
National average	0.8	11.7	56.3	31.2
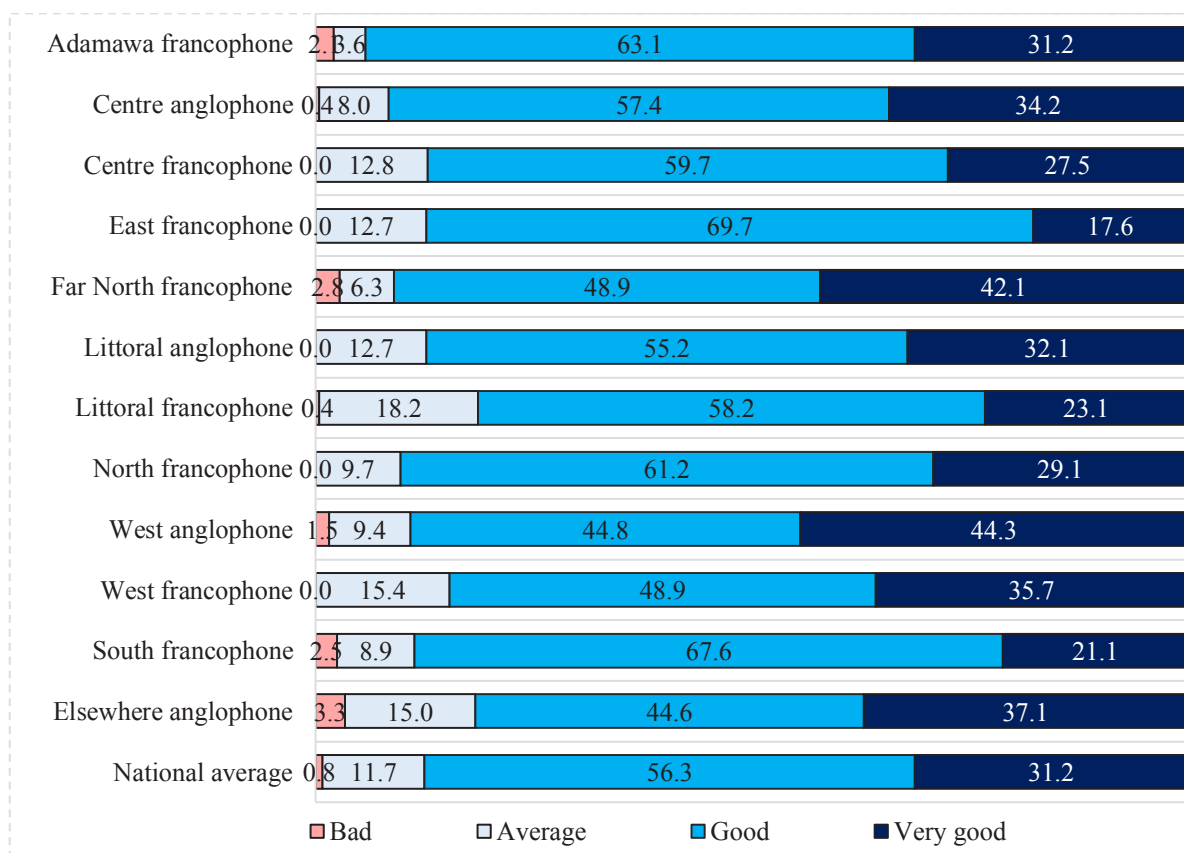
The relationship with the community is also judged positive by a large majority of Cameroonian teachers. The lowest proportions of positive perception are observed in the Francophone Littoral (69.7%), Francophone Adamawa (69.6%), Francophone Center (66.2%), Francophone South (65.6%) and Francophone East (53.7%). In the other strata, the proportions vary between 71.2% in the French-speaking Far North and 89.8% in the English-speaking West. The graph below shows the proportion of teachers according to their level of perception of the relationship with the community.

6

Graph 202 : Proportion of teachers according to their level of perception of the relationship with the community

	Bad	Average	Good	Very good
Adamawa francophone	1.3	29.1	47.1	22.6
Centre anglophone	2.9	7.6	51.5	37.9
Centre francophone	2.7	31.1	52.6	13.6
East francophone	14.2	32.0	42.8	11.0
Far North francophone	4.1	24.6	50.3	21.0
Littoral anglophone	1.8	17.3	57.2	23.7
Littoral francophone	1.9	28.4	58.1	11.6
North francophone	7.1	20.6	55.7	16.6
West anglophone	3.0	7.1	60.3	29.5
West francophone	0.7	27.9	52.3	19.2
Elsewhere anglophone	3.4	7.7	62.1	26.8
South francophone	4.8	29.6	46.3	19.3
National average	3.4	25.1	53.0	18.5

6.3.3.2. Perception of school management and the quality of professional and community relations in the Anglophone subsystem

In the PASEC2019 survey in Cameroon, teachers in the Anglophone subsystem rated the management of their school negatively. On average, 52.3% of teachers at the national level say that the management of their school is of poor or average quality. This negative perception is observed in almost all strata defined in the Anglophone subsystem, with the exception of the Anglophone Littoral where 51.4% of teachers say that the management of their school is good or very good.

Graph 203 : Proportion of teachers in the English-speaking subsystem according to their perception of school management

	National	Elsewhere anglophone	Littoral anglophone	Centre anglophone
	5.6		2.4	1.9 7.1
	17.0	17.6	12.4	22.5
	26.0	36.1	26.3	31.2
	22.7	25.3	24.9	37.3
	28.7	9.0 11.9	34.1	
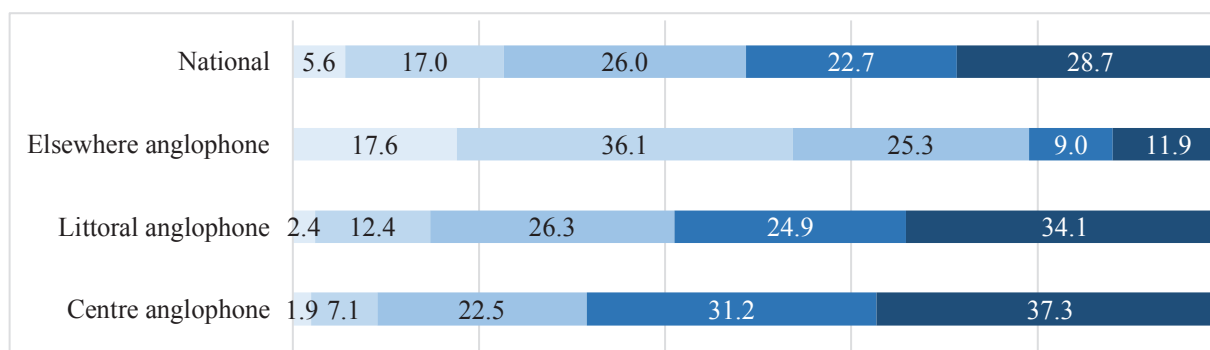
In all strata of the country's Anglophone subsystem, a large majority of teachers consider relations among colleagues to be positive. The highest proportions of satisfaction are observed in the Anglophone Center (91.6%) and the

Anglophone West (89.1%). The graph below provides information on the proportion of teachers according to their level of appreciation of relations with their colleagues.

Graph 204 : Proportion of teachers in the English-speaking subsystem according to their perception of the quality of relations with their colleagues
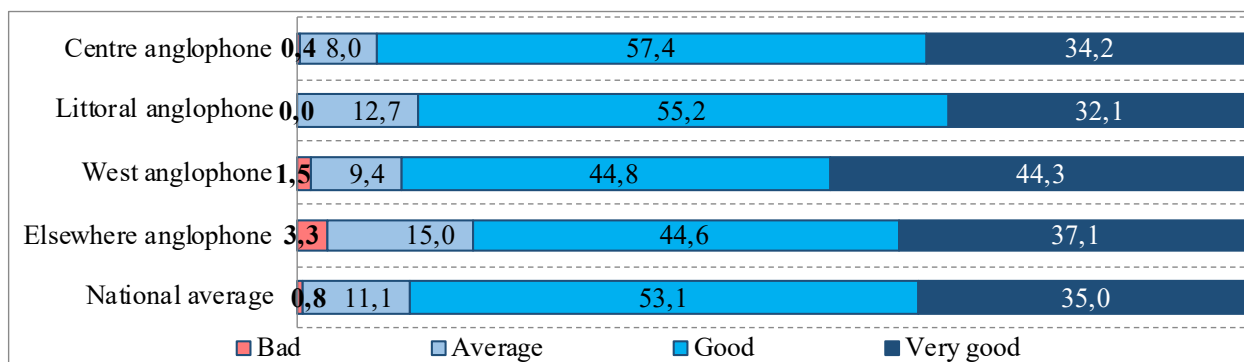
The relationship with the community is also judged positive by a large majority of teachers in the Anglophone subsystem. The lowest proportion of positive perceptions is observed in the Littoral anglophone (80.9%). In the other strata, the proportions vary from 88.8% in the Anglophone Rest to 89.8% in the Anglophone West. The graph below provides information on the proportion of teachers in the Anglophone sub-system according to their level of perception of the relationship with the community.

Graph 205 : Proportion of teachers in the English-speaking subsystem according to their level of perception of the relationship with the community

6.3.4.   Teachers' perception of salary conditions

Salary is a key determinant of the attractiveness of the teaching profession (OECD, 2005; Bennell & Akeampong, 2007; Maroy 2008) and is also one of the main factors affecting teacher motivation and performance (African Union, 2016). In some sub-Saharan countries, teachers' salaries are at or below the poverty line and teachers are unable to earn a decent living (African Union, 2016). According to Bennell & Akyeampong (2007), teachers are generally poorly paid, not remunerated commensurate with their levels of qualification. The combination of low and irregular salaries with economic necessity means that teachers are often absent to supplement their income through secondary professional activities, or moonlighting as teachers in other schools (IICBA, 2017; Rasera, 2005).

6.3.4.1. Teachers' perception of salary conditions at national level.

The PASEC2019 survey analyses teachers' perceptions of the level of their salaries on the one hand and the regularity of salary payments on the other.

The vast majority of Cameroonian teachers have a negative perception of their salary level. More than 87% of teachers in Cameroon have this negative perception. However, in the Rest of Anglophone Regions (6.2%) and Francophone Adamaoua (5.5%), more than 5% of teachers consider their salary level to be very good, while in the Anglophone Center, Francophone East and Francophone South, this proportion is zero, i.e. no teacher considers his or her salary level to be very good.

The following graph shows how Cameroonian teachers rate their salary level.

Graph 206 : Proportion of teachers by perception of their salary level

Region	Bad	Average	Good	Very good
National average	41,2	46,2	10,0	2,6
Sud francophone	40,5	54,9	4,6	0,0
Elsewhere anglophone	31,0	41,5	21,3	6,2
West francophone	46,2	47,2	5,2	1,3
West anglophone	57,5	35,1	3,9	3,5
North francophone	43,2	40,3	11,7	4,9
Littoral francophone	43,7	45,9	8,0	2,4
Littoral anglophone	30,8	54,9	12,0	2,4
Far North francophone	49,0	34,0	12,4	4,6
East francophone	17,9	75,4	6,7	0,0
Centre francophone	40,6	49,3	9,0	1,1
Centre anglophone	31,7	53,9	14,4	0,0
Adamawa francophone	29,5	47,1	18,0	5,5

On the other hand, regularity in the payment of salaries is well appreciated by more than 53% in all strata of Cameroon. The lowest proportions are observed in the French-speaking East (59.8%) and the French-speaking Far North (53.9%).

The following graph shows the distribution of Cameroonian teachers according to the level of appreciation of the regularity of the payment of their salary.

Graph 207 : Proportion of teachers according to their perception of the regularity of their salary payments

	Bad	Average	Good	Very good
Adamawa francophone	6,2	10,0	43,2	40,6
Centre anglophone	9,2	9,7	35,6	45,4
Centre francophone	10,9	15,5	33,9	39,7
Est francophone	4,5	35,7	35,3	24,5
Far North francophone	25,9	20,1	36,6	17,3
Littoral anglophone	4,8	27,3	38,0	29,8
Littoral francophone	10,4	13,1	47,2	29,3
North francophone	22,1	17,4	40,0	20,5
West anglophone	17,3	19,5	39,3	23,8
West francophone	9,6	23,1	43,1	24,2
Sud francophone	13,7	9,7	58,5	18,2
Elsewhere anglophone	12,8	17,8	38,4	31,0
National average	13,6	17,8	40,0	28,5

6.3.4.2. Perception of teachers in the Anglophone Subsystem of salary conditions

The PASEC2019 survey analyses the perception of teachers in the Anglophone subsystem regarding the level and regularity of their salary payments. The vast majority of Cameroonian teachers in this sub-system have a negative perception of their salary level. We note that 84.8% of Anglophone teachers at the national level have this negative perception. Only 7.5% of teachers in the Anglophone West are satisfied with their salary level.

The following graph shows the assessment of teachers in the Anglophone subsystem on their salary level.

Graph 208 : Proportion of teachers in the English-speaking subsystem according to their perception of their salary level

	Bad	Average	Good	Very good
Centre anglophone	31,7	53,9	14,4	0,0
Littoral anglophone	30,8	54,9	12,0	2,4
West anglophone	57,5	35,1	3,9	3,5
Elsewhere anglophone	31,0	41,5	21,3	6,2
National average	34,6	50,2	12,9	2,3
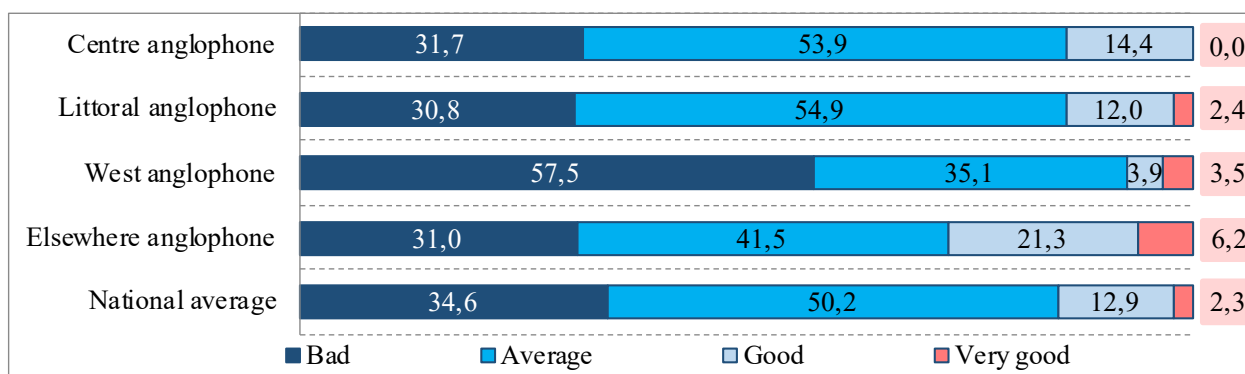
In contrast to the perception of salary level, the regularity of salary payments is positively assessed by an average of more than 71% in the Anglophone subsystem. The lowest proportion is observed in the Anglophone West (63.1%). In the other strata of the same sub-system, the proportions vary between 67.9% in the Anglophone Littoral and 81.0% in the Anglophone Center.

The following graph shows the distribution of Cameroonian teachers in the Anglophone subsystem according to the level of appreciation of the regularity of their salary payments.

Graph 209 : Proportion of teachers in the English-speaking subsystem according to their perception of the regularity of their salary payments
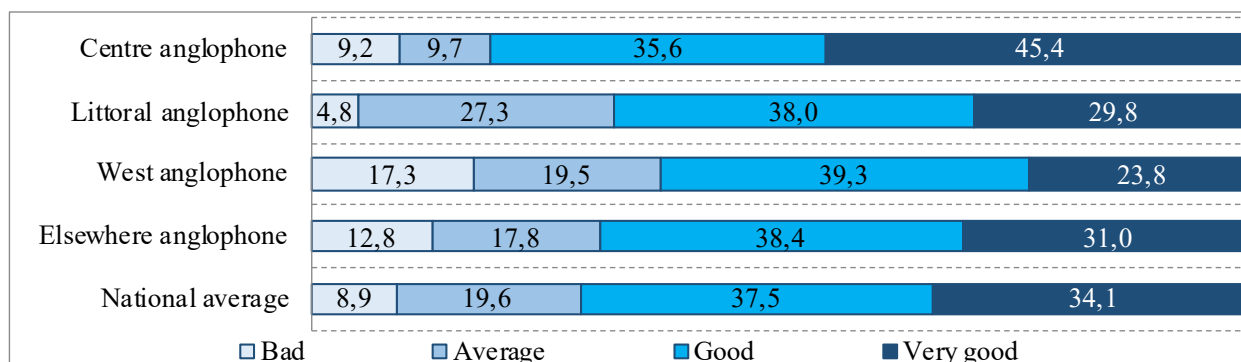
6.3.5. Teachers' perception of promotion and training opportunities

According to the UNESCO Teacher Policy Guide, the establishment of career plans that allow for continuous professional development and progression throughout a teacher's career is essential to attract, motivate and retain teachers (UNESCO, 2005). Such career planning should include financial and non-financial rewards and incentives to motivate teachers, allowing for equal opportunities in career development. Professional advancement of teachers, including in-service training and development, affects the skills and knowledge that teachers bring to the classroom, but also the social status of the profession, motivation and the decision to become a teacher as a first choice (African Union, 2016).

According to the African Union, the 'professionalisation' of teachers is weakly embedded on the continent; and the resources to develop high-quality training and support frameworks are lacking in ministry budget allocations. Indeed, in sub-Saharan Africa career progression opportunities are limited and not linked to professionalisation. The career path or trajectory is not unique and linear for teachers (African Union, 2016). Access to head teacher positions which is one of the few promotion opportunities for them is generally not based on performance and merit, but rather on years of service and other non-professional factors (IICBA, 2017).

6.3.5.1. Teachers' perception of promotion and training Opportunities at national level

In the PASEC2019 survey, the existence of training opportunities is very poorly rated by Cameroonian teachers in almost all strata. Indeed, on average 57.8% of Cameroonian teachers consider the existence of this opportunity to be average or poor. The highest proportions of this perception are observed in the Francophone Littoral (77.3%), Francophone East (68.1%), Anglophone West (62.9%), Francophone South (60.6%) and Francophone Center (60.1%).

On the other hand, in the French-speaking Far North stratum, 59.7% of teachers consider the existence of training opportunities to be good or very good.

The graph below shows the distribution of teachers according to their perception of training opportunities

Graph 210 : Proportion of teachers according to their perception of training opportunities

	Bad	Average	Good	Very good
Adamawa francophone	16,1	41,3	29,5	13,1
Centre anglophone	18,3	38,1	33,3	10,3
Centre francophone	17,3	42,8	34,2	5,7
Est francophone	19,1	48,9	26,9	5,0
Far North francophone	6,4	33,9	50,3	9,4
Littoral anglophone	13,1	39,4	37,5	10,0
Littoral francophone	32,7	44,6	19,7	3,0
North francophone	13,9	38,2	41,5	6,3
West anglophone	26,3	36,6	26,0	11,1
West francophone	14,5	45,1	33,7	6,7
South francophone	15,0	45,5	31,4	8,1
Elsewhere anglophone	15,9	40,9	31,6	11,6
National average	16,8	41,1	34,9	7,3
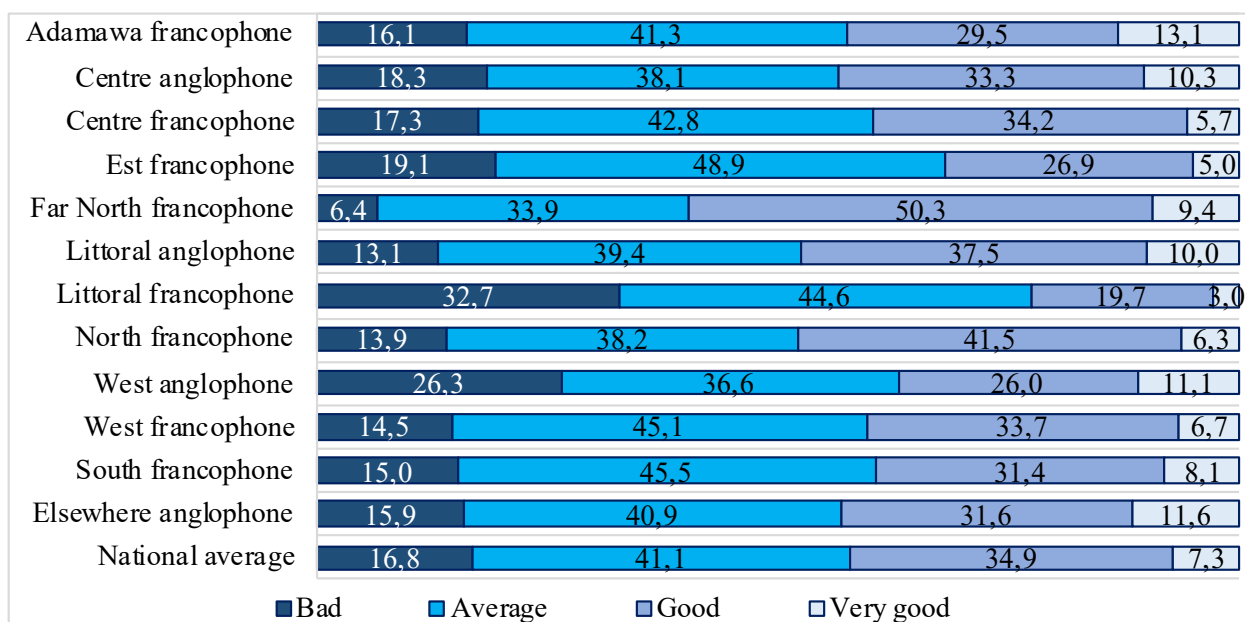
Opportunities for promotion (professional advancement) are also very poorly rated by the majority of Cameroonian teachers in all strata of the country. The proportions are particularly high in the French-speaking Littoral (86.6%), the French-speaking Center (85.1%) and the French-speaking West (83.8%). In the other strata, the proportions vary between 64.9% in Francophone Adamawa and 78.7% in Francophone South.

The graph below shows the distribution of teachers according to their perception of the quality of professional advancement

Graph 211: Proportion of teachers according to their perception of the quality of professional development

	Bad	Average	Good	Very good
Adamawa francophone	43,8	21,0	25,4	9,8
Centre anglophone	45,1	24,4	25,9	4,6
Centre francophone	44,9	40,2	11,7	3,2
Est francophone	46,2	30,4	23,5	0,0
Far North francophone	50,8	26,0	17,6	5,6
Littoral anglophone	31,8	37,0	25,9	5,4
Littoral francophone	57,2	29,4	10,3	3,0
North francophone	51,0	27,2	19,7	2,1
West anglophone	45,9	29,5	18,3	6,3
West francophone	55,9	27,9	16,2	0,0
South francophone	61,6	17,1	21,3	0,0
Elsewhere anglophone	45,8	28,8	17,5	7,9
National average	49,3	30,0	17,2	3,5

6

6.3.5.2. English-speaking teachers' perception Of promotion and training opportunities

In the PASEC2019 survey, the existence of training opportunities was rated very poorly by Cameroonian teachers in the Anglophone subsystem in all strata. Indeed, on average 55.6% of teachers in this subsystem consider the existence of this opportunity to be unsatisfactory. The highest proportion of this unsatisfactory perception is observed in the Anglophone West (62.9%) and the lowest is recorded in the Anglophone Littoral stratum (52.5%).

The graph below shows the distribution of teachers in the Anglophone sub-system according to their perception of training opportunities

Graph 212 : Proportion of teachers in the Anglophone subsystem according to their perception of training opportunities
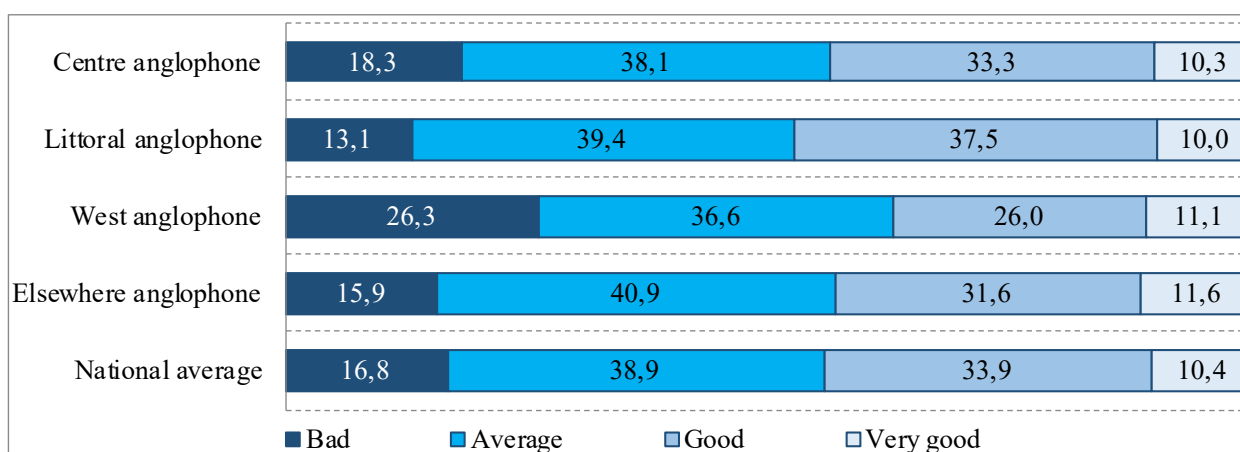
Opportunities for promotion (professional advancement) are also rated very poorly by the majority of Cameroonian teachers in the Anglophone subsystem and in all strata. At the national level, only 29.4% of teachers consider that opportunities for professional advancement are satisfactory. This perception is highest in the Anglophone Littoral (31.3%) (75.4%) and lowest in the Anglophone West (24.6%).

The graph below shows the distribution of teachers in the Anglophone sub-system according to their perception of the quality of professional advancement.

Graph 213 : Proportion of teachers in the English-speaking subsystem according to their perception of the quality of professional development
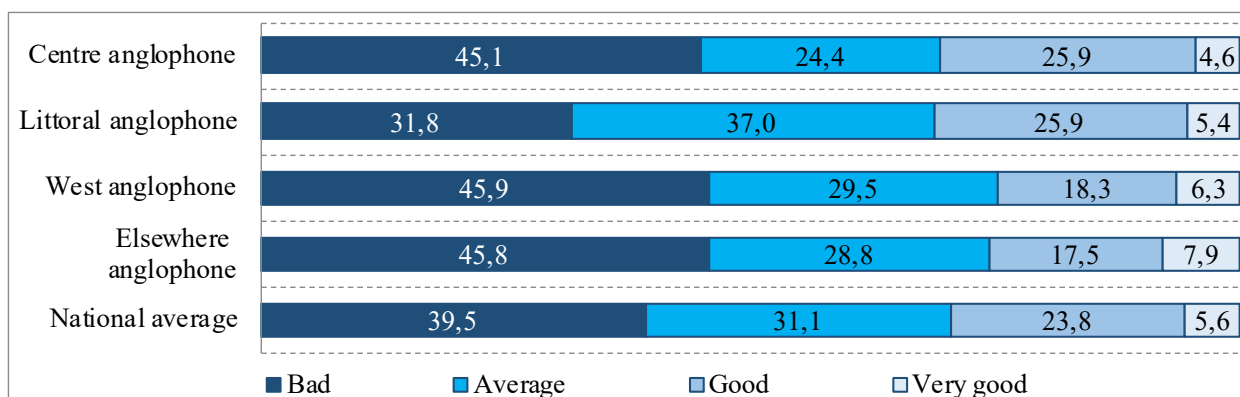
CONCLUSION

In conclusion, the teachers in the various strata defined in the PASEC2019 survey showed a relatively satisfactory level of mastery of the subject content (Reading Comprehension and Mathematics) taught in primary school. The proportion of teachers at level 1 and below the scales of knowledge and skills in Reading Comprehension (5.5%) and Mathematics (26.1%) shows, however, that a considerable number of teachers have weaknesses in their mastery of the disciplinary knowledge and skills (Reading Comprehension and Mathematics) taught in Cameroon. In terms of didactic knowledge and skills, the results show that, on average, the majority of teachers have difficulty analysing their pedagogical approaches, choosing situations adapted to learning objectives, and identifying common errors and their sources in order to help pupils progress in Mathematics and Reading Comprehension. From the analysis of teachers' characteristics, the most striking results relate to teachers' scores according to their seniority, level of academic training and access to in-service training. These results show that in the majority of the evaluation strata, on the one hand, teachers with a university education have better scores on the survey tests than those with a secondary level of academic training, and on the other hand, teachers who declare having a long teaching experience (between 11 and 20 years) do better on these tests than their less experienced colleagues (at most 5 years). On the other hand, these results show that, at the national level, teachers who have received in-service training do not score better on the survey tests than those who have not. Analysis of teachers' perceptions revealed that, with regard to their material and pedagogical conditions, teachers generally expressed satisfaction with the quality of the school curriculum. However, their view of the state of the buildings and the availability of school supplies was less positive in most strata. The analysis also revealed that the majority of Cameroonian teachers expressed an unfavourable opinion of the management of their school. However, teachers claim to have good relations with their colleagues and the community. Also, in all strata, it appears that the vast majority of teachers have an unsatisfactory perception of their salary conditions. Finally, in almost all strata, the majority of teachers expressed dissatisfaction with training and career promotion opportunities. Teachers' poor didactic knowledge and skills and their low satisfaction with their working conditions are factors likely to affect their motivation and effectiveness.

6

CROSS-ANALYSIS OF THE PERFORMANCE OF PUPILS IN EDUCATIONAL PRIORITY AREA AND THOSE IN THE REST OF THE COUNTRY

The term EPA was used for the first time in Cameroon in 1995 during the National Forum on Education, which served as a relay for the application and concretisation of measures and reforms adopted at the Jomtien EFA conference. From the year 2000, this notion became internationalised and popularised, and is now part of the official lexicon of the Cameroonian public administration. Of the 10 regions or administrative zones in the country, four are chosen as EPA because of the low school enrolment rates that have persisted since the country gained independence. This is just an appropriation of the concept, as there is no official text that concretely defines the educational standards for inclusion or exclusion of EPA. From then on, there was positive discrimination in the government's priorities with regard to the EPA, with a view to massifying and democratising access to school for learners in these localities. After more than twenty years of intensive intervention by education services in these areas, their designation as EPAs remains both in the name and in the considerations of education policy. One might ask nowadays whether the access objectives set at the launch of this initiative have not been achieved. Would it not be necessary to reformulate the educational policy objectives assigned to these zones in qualitative terms, in line with the current international guidelines on education (MDG4)?

To this end, we will first present some indicators (quantitative and qualitative) of schooling in these areas during the period under consideration. Secondly, we will look at the quality of pupil achievement in the EPAs in the light of the enrolment markers observed below, by comparing their performance with that of pupils in other education zones at the beginning and end of primary schooling during this PASEC2019 evaluation, with a focus on variables such as gender, school career, family support and learning conditions.

The aim of this chapter is to situate the performance of pupils in Educational Priority Area (EPA) in relation to those in other educational area at the beginning and end of primary schooling during this PASEC2019 evaluation, with an emphasis on variables such as gender (girls and boys), school career, family support and learning conditions.

7.1 STATISTICS AND INDICATORS OF ENROLMENT IN PRIMARY EDUCATION

Access to basic education is satisfactory, as shown by the data in the school mapping analysis report. However, this rate masks numerous disparities, which are even more glaring in the North, Far North, Adamawa and East regions. The completion rate of this level of education, although it has evolved from 57% in 2003 to 72% in 2011, remains unsatisfactory for an education system that would like to establish basic education. These areas have the lowest retention rates of human resources due to the lack of social infrastructure (health centers, accommodation and reception facilities, leisure and entertainment areas, lack of water points and energy sources) and difficult access. While schools in the large cities and their outskirts have a large number of pupils, which means that, they have to resort to the double-shift system (half time). The national average retention rate in the last year of primary school was 60% in 2016, whereas it was 47% for the so-called Educational Priority Areas (MINEDUB-UNICEF, Rapport d'Analyse 2016, p. 58). The population of vulnerable groups, living mainly in the EPA, faces socio-cultural barriers that prevent them from sending their children, especially girls, to school.

In addition to the problem of the provision of education, these regions have a very low enrolment of girls due to cultural reasons. These are regions whose main activities are breeding, cultivation and fishing. Parents prefer to keep children at home and use them in activities to improve the family's economic production. They are introduced at a very young age to work in the fields and graze animals. This situation is very pronounced for young girls, the majority of whom are married at an early age. This forces parents to keep them at home to introduce them to future household activities.

To this end, the study on behaviours, skills and practices on the schooling of children, particularly girls, conducted in EPA proposes the intensification of communication and awareness, through civil society organizations and community leaders, with a view to promoting the right to education of all children (MINEDUB - UNICEF, 2018).

Thus, to reduce these inequalities, the public authorities have set up these localities as Educational Priority Area (EPA) in order to strengthen the presence of the state, the provision of education in terms of personnel and infrastructure. The government prioritized its public investments in these areas. In the same light as the government, many partners (TFPs) and international organizations, have instituted incentive programs to improve the schooling conditions of learners in these areas.

Table 45: Evolution of primary school enrolment indicators from 2006-2007 to 2019-2020

	2006/2007	2009/2010	2014/2015	2019/2020
Gross Enrolment Rate (GER)	101%	110%	122%	115%
Gross Enrolment Rate in EPA	99,8%	107%	129%	139%
Gross enrolment rate for girls	//	104%	117%	108%
Gross enrolment rate for girls in EPA	//	92%	116%	126%
Gender parity index in GER	0,90	0,89	0,92	0,89
Gender parity index in GER-related EPAs	0,82	0,75	0.82	0,83
Primary school access rate	102%	125%	133%	128%
Primary school access rate in the EPA	//	140%	160%	160%
Completion rate	64,3%	73,0%	74%	71%
Completion rate in EPA	41,5%	56%	65,5%	69%
Girls' completion rate	59,5%	68,8%	72,8%	67%
Girls' completion rate in EPA	//	56%	66%	59%
Retention rate	//	58,4%	55,6%	59%
Retention rate in EPA	//	40%	41%	47%
Overall % of repetition	21,8%	13%	12,2%	13,1%
Pupil/teacher ratio	50,2/1	52/1	42/1	46/1
Pupil/teacher ratio in EPA	//	63/1	64/1	79/1

Source: School mapping data analysis report, 2006-2007 to 2019-2020

Over the past 10 years, there has been a strong increase in enrolment in the EPA, with the gross enrolment rate rising from 107% in 2009 to 139% in 2019. Similarly, access to primary education has improved considerably over the period, rising from 140% to 160% between 2009 and 2019. Although there is an upward trend in primary school completion in the EPA, there is a slight deterioration among girls in the EPA between 2015 and 2019. This situation is a warning sign when it comes to girls' enrolment, which seems to be declining in view of the measures put in place since 2010 in the said zones to encourage girls' enrolment and completion of primary education.

With regard to the quality of education, particularly in terms of the pupil-teacher ratio, while some markers are improving slowly at the national level, they are deteriorating further in the EPA. For example, the pupil-teacher ratio in the EPA rose from 63:1 in 2009 to 76:1 in 2019. However, this result only provides a brief overview of the quality of education in the EPA, particularly for girls. It should therefore be noted that the following analyses will shed light on the quality of education in the EPA.

It will therefore be a question of gaining a better understanding of the quality of pupils' achievements in the EPA in the light of the markers of schooling observed above.

Since 2015, the many discussions between education officials and TFPs on the reforms to be made to education in Cameroon have focused on reframing the objectives of intervention in the EPAs. For many stakeholders, although pockets of under-enrolment persist, it would be desirable for policies to aim at strengthening the retention of learners who are already there and ensure that they complete their education with adequate learning.

7

7.2 PERFORMANCE OF PUPILS IN THE 'COUNTRY' IN INTRA-ZONE COMPARISON (EPA AND OUT OF EPA)

Using the strata of analysis constituted during this evaluation for the Anglophone subsystem, The Rest of Anglophone stratum is made up mainly of schools located in EPA to which a few schools in the South region have been added. Therefore, in the intra-zone comparison, this stratum will represent the EPA and the other strata will constitute the out of EPA group. We will analyse the performance of Cameroonian pupils at the beginning of their schooling according to whether they are located in one of the two zones.

7.2.1 Skills and difficulties of pupils at the beginning of primary school In EPA and non-EPA zones

In language of instruction, the majority (51.4%) of young Cameroonians were able to obtain more than 540 points in the PASEC2019 test and were above the defined threshold of competence. Disaggregating this proportion between the two comparison zones, we can observe that in the EPA at the beginning of schooling, only 21% are in the two upper levels of the skills scale, of which 12% have reached a level of reading and listening comprehension that enables them to understand explicit information in sentences and short texts. While in the Non-EPA group, more than the majority of learners are found in these two higher levels of the scale with proportions higher than the proportions of the overall Anglophone population.

The near majority (79%) of early school learner from EPAs are below the sufficient reading skills threshold (less than 540 points on the test) compared to 40% in the Out of EPAs. The latter are heavily concentrated at the level just below proficiency (26.3%), and are emergent readers who need a boost to get them to the higher end of the scale. It is only in Level 2 that the proportion of Out of EPA pupils is higher than that of the EPA pupils in the three tiers below the threshold.

In these three tiers, the proportions of EPA pupils are distributed as follows: 25.3% of pupils who are emergent readers, 36.1% who are alert readers, and 17.6% who have considerable difficulty with the knowledge and skills of level 1. They need to be monitored very carefully to avoid dropping out of school. There are considerable differences in the proportions of our two groups of pupils in the two lower levels of this scale: 24% in Level 1 and 15% below Level 1.

Overall, it can be seen that pupils from EPAs have slightly more difficulty in reading at the beginning of their schooling than those from non-EPAs, with a strong concentration in the lower levels of the skills scale.

Table 46: Distribution of EPA and non-EPA pupils according to the PASEC2019 Language Proficiency Scale - Beginning of schooling

Level	Score	National distribution of pupils in the levels of the scale (%)	National distribution of pupils of the EPA in the levels of the scale (%)	National distribution of pupils of the Out of EPA in the levels of the scale (%)
Level 4	> 610 points	28,7%	11,9%	33,1%
Level 3	Between 540 and 610 points	22,7%	9,0%	26,0%
Sufficient Threshold of competences				
Level 2	Between 469 and 540 points	26,0%	25,3%	26,3%
Level 1	Between 399 and 469 points	17,0%	36,1%	12,0%
Below level 1	< 399 points	**5,6%**	**17,6%**	**2,6%**

Graph 214: Percentage distribution of pupils in EPAs and out of EPAs in the Anglophone sub-system of Cameroon according to language proficiency scales - Beginning of school
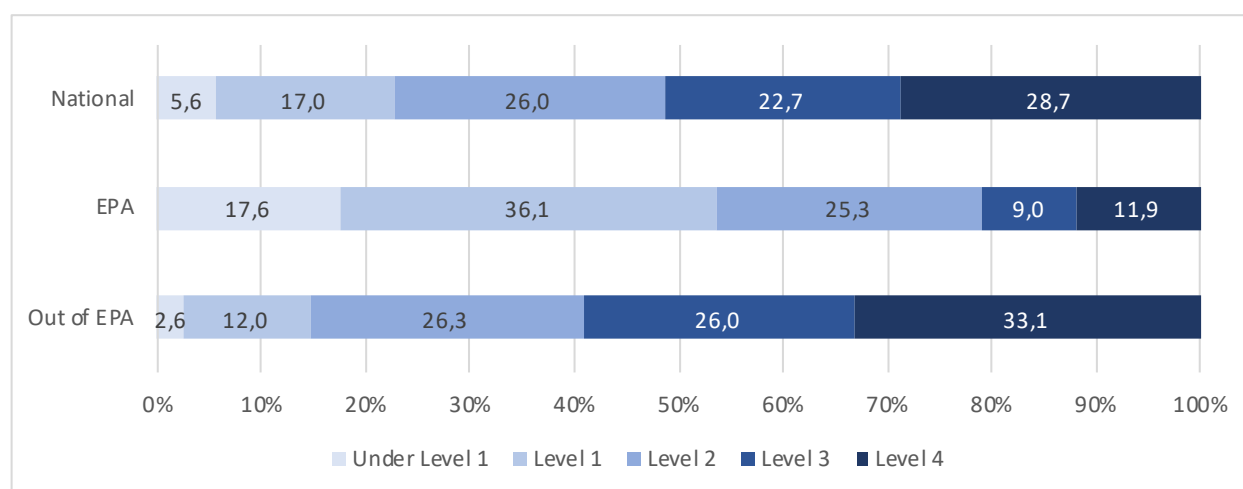
- **Average score in Reading-beginning of schooling.**

As shown in the graph, the average language score of pupils in EPA (479.5) is lower than that of pupils in Non-EPA (572.6) at the start of primary school.

7

Graph 215 : Average language score of pupils in EPA and Non-EPA in the Anglophone sub-system of Cameroon - Beginning of schooling

Looking at the significance of this difference in average score between the two groups, we see that the average language score of EPA pupils is almost 93 points lower than that of Non-EPA pupils with an error of 23.9 points and that this difference is significant at 1%.

Table 47 : Comparison of the average language score of EPA and non-EPA pupils at the beginning of their schooling.

REGRESSION					
Variable	Coefficient	Standard Error	Pupils' statistics	Significance	FLG
EPA	- 93,07	22,91335	-4,06191	SIGNIFICANT at 1%	0
Intercept	572,56	0	,	SIGNIFICANT at 1%	0
Adj_R2	0,12	0	,	**SIGNIFICANT at 1%**	0

• **Mathematics**

Looking at the national distribution of pupils in the levels of the scale, almost all 76.5% of learners are able to read numbers, compare numbers, complete logical sequences and perform operations (addition and subtraction) on numbers below fifty and are in the upper two levels of the Mathematics proficiency scale. Disaggregated into the two groups of analysis, almost all learners from the Non EPA (83%) were in this category compared to 53% of pupils in the other group.

At the top of the scale, among the learners who were able to perform more than 577 points in Mathematics, the majority of learners from out of EPAs (52%) were found, this proportion being three times higher than that of pupils from EPAs. The trend is reversed for those who were able to perform between 489 and 577 points, with a 5% difference in proportion in favour of EPA pupils.

Below the sufficient threshold, the proportion of EPA pupils is more than twice that of Non-EPA pupils. This is because the Out of EPAs have almost all of their learners registered at the higher end of the scale, leaving only the residual amount to be removed. We thus find 14.4% in the tier just below the sufficient threshold, learners who can easily cross to the other side of the threshold if special attention is given to them. These are learners who have mastered the first notions of quantity (counting, comparison) with numbers under twenty and are beginning to identify the first simple geometric shapes. These are learners who were able to score between 400 and 489 points in this test.

In terms of the percentage of pupils who scored less than 400 points on this test, those below Level 1 are 4.8% nationally, consisting of 12.2% of pupils from EPA, four times higher than pupils from Non EPA. These are pupils who have difficulty with Level 1 knowledge and skills and who need remediation and special monitoring.

Table 48 : Distribution of EPA and out of EPA pupils according to the PASEC2019 Competence Scale in Mathematics - Beginning of schooling

Levels	Scores[5]	National distribution of pupils in the levels of the scale (%)	National distribution of pupils of the EPA in the levels of the scale (%)	National distribution of pupils of the Out of EPA in the levels of the scale (%)
Level 3	> 577 points	44,6%	16,0%	52%
Level 2	Between 489 and 577 points	31,9%	35,7%	30,8%
Suffficient Threshold of competences				
Level 1	Between 400 and 489 points	18,7%	36,0 %	14,4 %
Below Level 1	< 400 points	**4,8%**	**12,2%**	**2,8%**

Graph 216: Percentage distribution of pupils in EPA and Out of EPA of the English-speaking sub-system of Cameroon according to Mathematics competency scales - Beginning of schooling
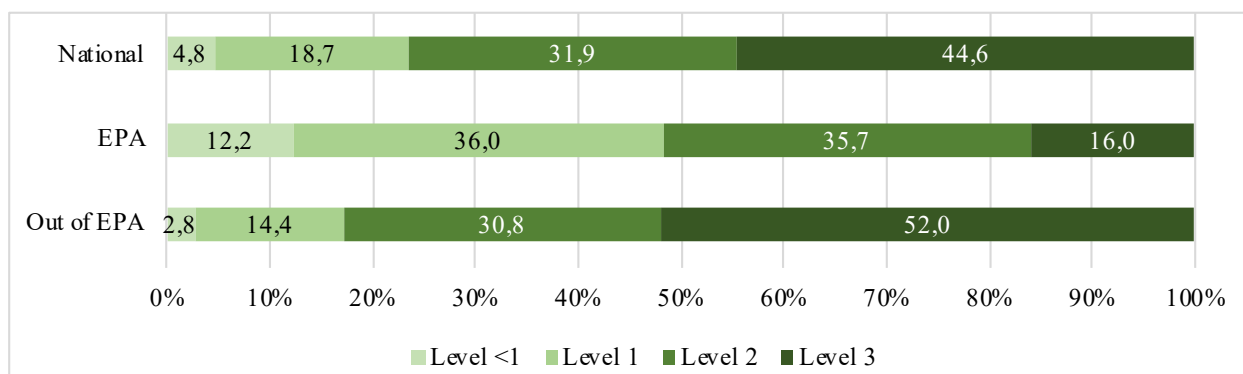
- **Average score in Mathematics-beginning of school**

The average score of EPA pupils in Mathematics is 498 with a standard deviation of 83.6 points.

For each level of the scale, the scores for a level are presented as a range. For example, for the level called «below level 1», pupils in this level have a score below 400 points.

Graph 217 : Average Mathematics Score of EPA and Out of EPA Pupils in the Francophone Subsystem of Cameroon - School Start
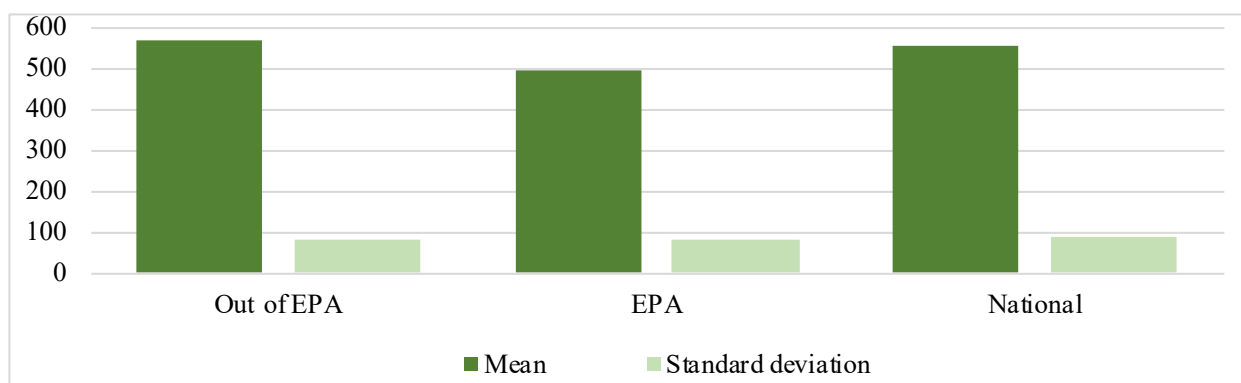
This difference in average scores between the pupils in the two groups is 73.8 points with a standard error of 12.4 in favour < the Out of EPA pupils. This difference in average scores between the two groups is significant at the 1% level.

Table 49 : Comparison of the average score in Mathematics for EPA and Out of EPA pupils at the start of schooling.

REGRESSION					
Variable	Coefficient	Standard Error	Pupils' statistics	Significance	FLG
EPA	- 73,75	12,44621	-5,92551	SIGNIFICANT at 1%	0
Intercept	571,82	0	,	SIGNIFICANT at 1%	0
Adj_R2	0,11	0	,	**SIGNIFICANT at 1%**	0

7.2.2 Skills and difficulties of pupils at the end of primary schooling In EPA and out of EPA areas

The trends at the end of schooling in reading are similar to those observed at the beginning of schooling, but this time the differences in performance between the two groups are smaller, especially at the higher level of the skills scale. This means that the school curriculum has brought the performance of learners from EPAs to the level of learners from non-EPAs, while correcting the deficiencies recorded at the beginning of schooling.

At the national level, 77.7% of school leavers were able to perform above 518 points in this language test. They are above the minimum threshold of competence expected in this PASEC2019 assessment. The proportions of pupils in these two upper levels of the language proficiency scale are roughly the same in EPAs (72%) and outside (79.3%).

At the top of the scale among the best pupils in this pupil test, those who scored more than 595 points, the proportion of pupils from Out of EPAs (50.3%) was higher than that of pupils from the other group (41.7%). Overall, pupils performed better on this language test, as more than 40% of learners can read literary texts, and are able to identify the author's intention and determine the implicit meaning of a story, regardless of the area in which it is found.

In the tier slightly below, these are pupils with a language score between 518 and 595 points. These are pupils who can extract implicit information from written material by making sense of implicit connectors, anaphors or referents. At the national level, 29.3% of primary school leavers in the Anglophone sub-system perform equally well in both zones, with a slight superiority among learners in EPA (30.3% in EPA and 29% in Out of EPA). The performance gap between the two groups in this tier has narrowed slightly compared to the tier above.

Table 50 : Distribution of EPA and Out of EPA pupils according to the PASEC2019 Language Proficiency Scale - End of school

Levels		Scores	National distribution of pupils in the levels of the scale (%)	National distribution of pupils of the EPA in the levels of the scale (%)	National distribution of pupils of the Out of EPA in the levels of the scale (%)
Level 4	>595 points	48,4%	41,7%	50,3%	
Level 3	Between 518 and 595 points	29,3%	30,3%	29,0%	
Sufficient Threshold of competences					
Level 2	Between 441 and 518 points	15,0%	16,0%	14,8%	
Level 1	Between 365 and 441 points	6,5%	10,3%	5,4%	
Below Level 1	< 365 points	0,8%	1,7%	0,5%	

For the proportion of pupils at the end of the year who fall below the sufficient competence threshold, at national level 22.3% are recorded. These are pupils who cannot locate explicit information in long texts and documents with discontinuous text. They have language of instruction scores below 518 points on this assessment. In all the tiers below the proficient level, the proportion of pupils from EPAs is higher than that of other pupils.

For the level just below the proficiency threshold, the proportion of pupils from EPA is 16% compared to 14.8% for those from Out of EPA. These are pupils who are able to locate explicit information in short and medium texts while picking up cues from the text and from the questions, but their performance is judged insufficient to pass the upper level of the proficiency scale.

At level 1 of the scale, the proportion of pupils from EPAs (10.3%) is almost double that of the other group. These are pupils who have developed decoding skills but are only able to understand isolated words from their daily lives or very short isolated sentences, but have difficulty understanding the meaning of short, simple texts. Considerable effort must be made by these pupils to try to close the gap they have with the expectations set for this educational service and not to continue their studies with these deficiencies which only increase throughout the school curriculum.

There is a very small proportion of learners with enormous difficulties, those who after six years of schooling in primary school do not demonstrate the reading skills measured by this assessment, recorded in the tier below level 1. They are less than 2% in the EPA, and almost non-existent in the Non-EPA (0.5%).

7

Graph 218: Percentage distribution of pupils in EPA and Out of EPA in the Anglophone subsystem of Cameroon according to the language proficiency scales - end of schooling
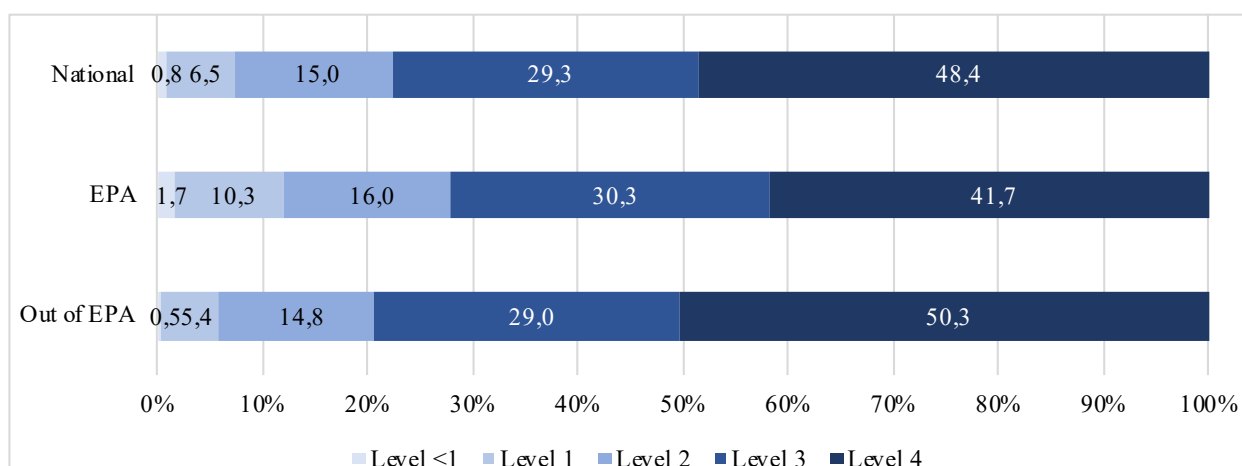
- **Average score in language - end of primary schooling**

As at the beginning of schooling, the average language score of EPA pupils is lower than that of the other group.

This difference in average scores between the pupils of the two groups is only 22.2 points with a standard error of 20 points in favour of the non-EPA pupils. This difference in mean scores between the two groups is not significant. This means that although the Non-EPA pupils performed better on average than the EPA pupils at the end of their schooling, this difference in performance can be explained by taking other variables into account.
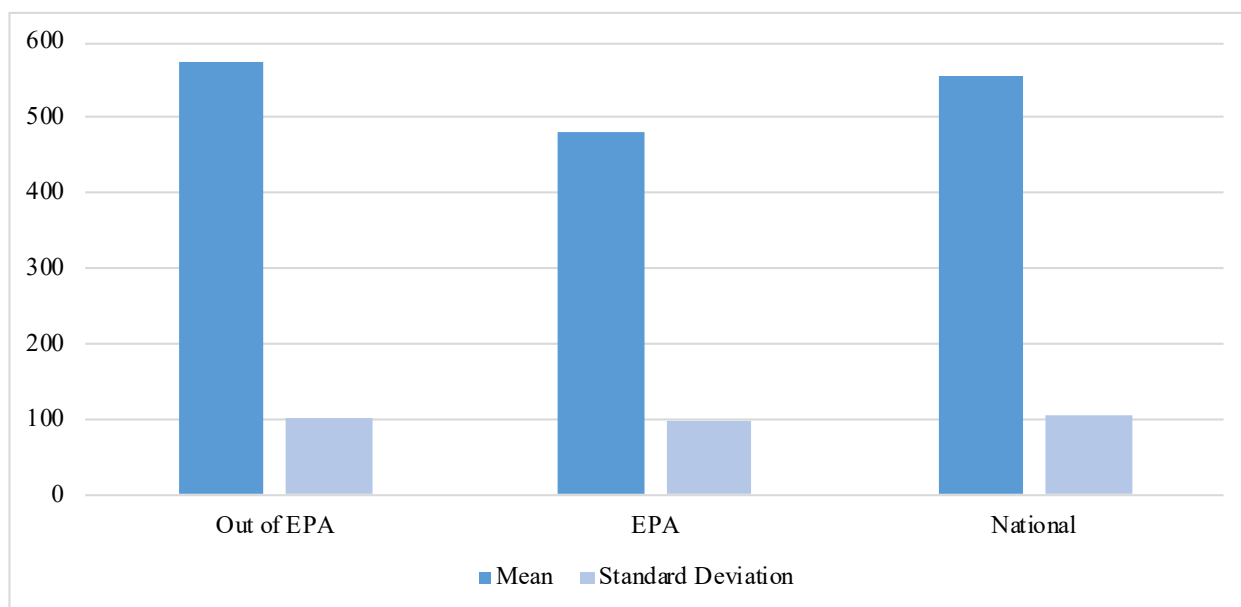
Table 51 : Comparison of the average Language Score of EPA and Non-EPA pupils at the end of schooling.

REGRESSION					
Variable	Coefficient	Standard Error	Pupil's Statistics	Significance	FLG
EPA	-22,16	19,91816	-1,11267	NON SIGNIFICANT,	0
Intercept	591,17	0	,	SIGNIFICANT at 1%	0
Adj_R2	0,01	0	,	**SIGNIFICANT at 1%**	0

In Mathematics, only one-sixth of the primary school leavers in the Anglophone sub-system nationally were able to score more than 609 points in this assessment and reach the top of the scale in this subject. This proportion is made up of 11.5% of learners from EPAs and 18.2% from outside. Although learners located outside EPAs perform better, learners from EPAs are also found in acceptable proportions.

At level 2 of this scale, there are 36.4% of pupils nationally and similar proportions of learners in both areas (36.7% in EPA and 36.4% outside). Thus, the proportion of learners who can solve direct proportionality problems and problems involving fractions or decimal numbers are the same regardless of educational area. These are skills that obviously need to be reinforced so that they can become indelible assets for these pupils in view of their importance in the further learning process.

Below the level just below the sufficient competency threshold, the proportions of school leavers in EPAs (34.6%) and Non-EPAs (35.4%) are almost identical, with an advantage for learners outside EPAs. This inevitably means that the proportion of EPA pupils in the lower tier is higher than that of Out of EPA pupils. Thus, a greater proportion of pupils with difficulties in level 1 knowledge and skills are located in the EPA.

Table 52 : Distribution of EPA and out of EPA pupils according to the PASEC2019 Competence Scale in Mathematics - End of schooling

Levels	Scores	National distribution of pupils in the levels of the scale (%)	National distribution of pupils of the EPA in the levels of the scale (%)	National distribution of pupils of the Out of EPA in the levels of the scale (%)
Level 3	> 609 points	16,6 %	11,5 %	18,2 %
Level 2	Between 521 and 609 points	36,4 %	36,7 %	36,4 %
Sufficient Threshold of competences				
Level 1	Between 433 and 521 points	35,3 %	34,6%	35,4%
Below level 1	<433 points	11,7%	17,2%	10,0%

Graph 219 : Percentage distribution of pupils in EPA and out of EPA of the English-speaking sub-system of Cameroon according to Mathematics competency scales - End of schooling
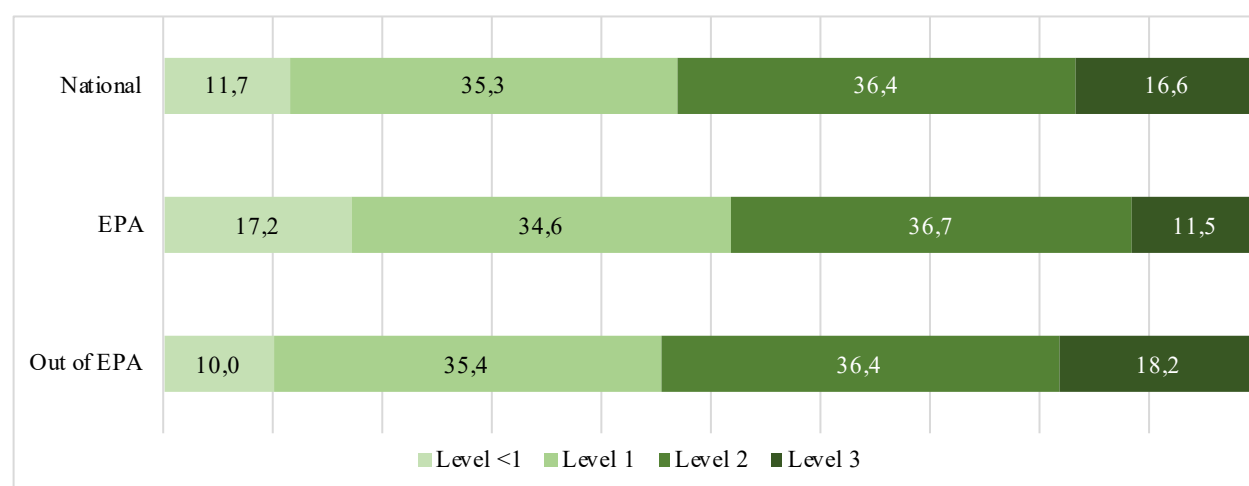
EPA pupils had an average score of 514.6 points at the end of primary school compared to 535.4 points in the other group.

The difference in average score in Mathematics between EPA and Out of EPA pupils is 20.8 points with a standard error of 15.7 in favour of those from Out of EPA. This difference in average score between these two groups is not significant.

Table 53 : Comparison of the average score in Mathematics for EPA and Out of EPA pupils at the end of schooling

REGRESSION					
Variable	Coefficient	Standard error	Pupils' statistics	Significance	FLG
EPA	- 20,83	15,73857	-1,32371	NON SIGNIFICANT	0
Intercept	535,40	0	,	SIGNIFICANT at 1%	0
Adj_R2	0,01	0	,	SIGNIFICANT at 1%	0

7

It can be noted that pupils from EPA perform less well than those from Out of EPA regardless of the language of instruction or Mathematics and the level of schooling. Out of EPA pupils had higher average scores in both subjects and both levels of the assessments than EPA pupils. All these differences in average scores between these two groups are highly significant (1%), and show considerable differences at the beginning of schooling. And during the course of schooling, learners from EPAs improve their performance considerably, which results in a decrease in the gaps between them and the Out of EPA observed at the beginning of schooling. Thus, schooling in the Anglophone sub-system considerably reduces the disparities in learners' performance in the two subjects. This sub-system makes the acquisition of learners' skills homogeneous and reinforces equity. This presupposes the effectiveness of the mechanisms for remedying pupils' shortcomings that are put in place throughout the curriculum. These good practices must be supervised and institutionalised.

7.2.3   Variation in performance between schools and between pupils In EPA and Out of EPA

Putting all pupils in the same schooling conditions remains a challenge for most of the countries evaluated. Inequalities in performance can be explained by factors at the pupil or school level.

At the school level, this variation in performance between schools may be due to the location of the school (urban or rural), the type of school (public or private) and the equipment index. The part of the variance explained by the differences between pupils is not negligible and could come from several factors (individual characteristics of the pupil, socio-economic status, etc.). The fact that the variance between schools is an element that can be observed everywhere implies the importance for PASEC countries to work on spatial equity between regions or zones of the same country.

At the national level, learners' performance is very strongly dependent on the school they attend. In reading, the school attended explains 62% of the variance in performance between pupils in reading and the rest of the variance in performance (38%) is explained by the pupil's personal characteristics.

In Mathematics, the school attended helps to explain 57% of the disparity in performance between pupils, while these personal characteristics contribute 43% to this performance.

In both subjects, the performance of the pupils is still very strongly explained by the school attended, and therefore the learning conditions implemented in the different schools. This breakdown of the variance in pupil performance makes it possible to examine the disparities between the different schools in terms of location (urban, rural, EPA, Out of EPA) and teaching order (public, private) and consequently the disparities in learning conditions.

7.3   ANALYSIS OF DISPARITIES BETWEEN EPA AND OUT OF EPA

The reality of the right to education and the effective democratisation of the system presuppose that the state ensures education for all in the primary cycle and equal access to quality education. The measures to be taken to promote equality and equity imply: the continuation of efforts towards free primary education; positive discrimination in the allocation of resources; the stabilisation of teachers in difficult areas with low enrolment; support for school attendance for the most vulnerable populations (because of their poverty, their place of residence and their gender); considering issues related to inclusive education and to displaced populations living on the territory.

Indeed, the most successful education systems are those that combine quality and equity. Equity in education implies that personal or social circumstances such as gender, ethnic origin or family background should not be an obstacle to the realisation of the educational potential (equity) of each individual and to their achieving a minimum level of basic skills (inclusion).

In these education systems, a very large majority of pupils have the opportunity to acquire high competences, regardless of their personal and socio-economic circumstances.

The school environment will be analysed through the following non-exhaustive elements:

7.3.1 Disparities in pupil and family background characteristics
7.3.1.1 Gender of the pupil

In its education and training sector strategy document (DSSEF 2013-2020), it is mentioned that access to primary education is more or less universal for all categories of the population in all regions, with the exception of those located in the EPAs (22% of young people in Adamawa do not have access to school, 29% in the Far North.

And as a strategic axis, the Cameroonian government has committed itself for the period 2013-2020 to:

• Stimulate the demand for schooling of young girls from poor and disadvantaged strata and of vulnerable children. This involves extending a system inspired by the one carried out in the pilot schools (UNICEF project), consisting of granting scholarships and educational kits to the most disadvantaged girls and the most vulnerable children, and using school nutrition measures (dry rations, canteens) as an alternative or complement;

• Encourage the enrolment of young girls in school through awareness-raising campaigns aimed at parents and traditional authorities by NGOs and other operators working in these areas. In the same vein, separate latrines for girls and boys, drinking water points, hand-washing facilities and sanitary kits will be built. These achievements are incentives for encouraging girls' access to and retention in school.

By comparing the average score of girls to that of boys for all of the learners of the Anglophone subsystem in the two levels of the PASEC2019 evaluation, we realise that overall the score of girls is higher than that of boys except in Mathematics at the end of primary schooling. But the performance gaps between these two groups of populations are not considerable, except in language at the beginning of schooling where the gap reaches 22 points on average. Consequently, this is the only difference in average performance between girls and boys that is significant, albeit at only 5%.

This is the same trend observed at national level that is reproduced in the Out of EPA. Girls perform better on average than boys in language at both levels of this assessment and in Mathematics at the beginning of schooling. At the start of schooling, girls in EPAs are better than boys in both subjects, although these differences in average are not significant. This advantage diminishes considerably throughout their schooling until it reaches a difference of 13 points on average in favour of boys at the end of schooling, which means that these girls lose 22 points on average in language and Mathematics throughout their primary schooling in favour of boys. And we can see that at the beginning of schooling these differences in average between girls and boys, whether in language or Mathematics, are not significant, but become significant at the end of schooling in Mathematics alone, at around 10%.

Thus, the enrolment of these pupils in the EPAs has reinforced and consolidated the performance gaps between girls and boys instead of eliminating them.

At the end of the primary cycle, boys in the Out of EPA manage to make up for, and then surpass, their language deficit in relation to boys, gaining more than 10 points in this schooling course. It can thus be concluded that in the Out of EPA the average performance between girls and boys is more homogeneous.

Overall, pupils improve their average performance over the course of their schooling in the Out of EPA regardless of gender.

Table 54 : Analysis of learners' performance at the end and beginning of primary school by gender

Gender of pupil = Girls			Coefficient	Standard error	Pupils' Statistics	Significance	FLG
National	Beginning of schooling	Language	21,64	8,46	2,56	SIGNIFICANT at 5%	0
		Mathematics	8,29	7,83	1,06	NON SIGNIFICANT	0
	End of schooling	Language	2,24	6,20	0,36	NON SIGNIFICANT	0
		Mathematics	- 5,76	5,51	- 1,05	NON SIGNIFICANT	0
EPA	Beginning of schooling	Language	9,16	15,38	0,60	NON SIGNIFICANT	0
		Mathematics	3,51	15,41	0,23	NON SIGNIFICANT	0
	End of schooling	Language	- 12,82	12,79	- 1,00	NON SIGNIFICANT	0
		Mathematics	- 18,58	9,82	-1,89	SIGNIFICANT at 10%	0
Non EPA	Beginning of schooling	Language	20,36	9,19	2,21	SIGNIFICANT at 5%	0
		Mathematics	8,41	8,76	0,96	NON SIGNIFICANT	0
	End of schooling	Language	6,78	6,06	1,12	NON SIGNIFICANT	0
		Mathematics	- 2,12	5,93	- 0,36	NON SIGNIFICANT	0

7.3.1.2   Socio-economic level and student performance

For the most disadvantaged people, education is an effective tool to lift them out of the poverty trap. If all children in low-income countries left school with basic literacy skills, 171 million people could be lifted out of poverty, equivalent to a 12% reduction in global poverty (UNESCO, 2014). Educated individuals, regardless of their background, have a lower probability of ending up in chronic poverty (Dercon et al, 2012; Lawson et al, 2006; Ribas et al, 2007).

The RESEN Cameroon 2013, reveals that disparities related to wealth, socio-economic level and region are by far the most pronounced. Access to primary education can be considered more or less universal for all categories of the population in all regions, with the exception of those located in the EPAs (almost 24% of young people in the EPAs do not have access to school). These delays will accumulate as the primary completion rate is estimated at over 46% in the EPAs (compared to about 95% outside the EPAs). The level of poverty of the populations also interferes since it is estimated that while the primary completion rate is around 98% for a young person from the highest wealth quintile residing in Douala or Yaoundé (two large metropolises of the country, located outside the EPA), it is only 28% for a young person from the lowest quintile residing in the EPA. Additional analyses have shown the respective roles of supply and demand in schooling. For example, in the EPAs, supply-side factors explain some of the observed delays in schooling compared to other regions. But demand factors are also important: almost 20% of children who have a school within reasonable proximity of their home do not attend it. There is also a significant number of out-of-school children, those who have never been enrolled in a school and those who have dropped out of primary school. It is estimated that the annual flow of these children is of the order of 100,000, of which a little more than half are dropouts. These children are massively recruited among the poor in rural areas (82% of those not attending school) and in the EPAs: the Far North alone accounts for 53% of children not attending school. To these must be added 9,200 out-of-school refugee children, 98% of whom are found in the East and Adamawa regions. Reducing this form of disparity therefore requires proactive action at several levels in areas where education policy can be effective.

7.3.1.3   Parental Literacy

In the words of the United Nations Literacy Decade (2003-2012), "Literacy for all is at the heart of basic education for all, and creating literate environments and societies is essential to achieving poverty eradication, reducing child mortality, curbing population growth, achieving gender equality and ensuring sustainable development, peace and democracy. Literacy is a fundamental human right and a tool for development. It empowers individuals, families and communities to seize the health, educational, political, economic and cultural opportunities available to them. There are currently some 771 million illiterate adults in the world, two-thirds of whom are women.

This is a serious violation of human rights, affecting one fifth of the world's adult population. It is also a major obstacle to the deployment of human capacities and the achievement of economic and social development, especially for women. To reduce the impact of illiteracy on the development of countries, they adopt as EFA goal No. 3: to achieve a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults. (EFA Global Monitoring Report: Literacy for Life, 2006)

Table 55 : Analysis of the influence of parental literacy on learners' performance at the end and beginning of primary school

Literate Parents			Coefficient	Standard Error	Pupils' Statistics	Significance	FLG
EPA	End of schooling	Language	39,80é	18,30	2,18	SIGNIFICANT at 5%	0
		Mathematics	10,23	15,42	0,66	NON SIGNIFICANT	0
Out of EPA	End of schooling	Language	6,68	17,42	0,38	NON SIGNIFICANT	0
		Mathematics	8,78	16,17	0,54	NON SIGNIFICANT	0

Literate parents have a positive influence on improving the schooling rate of children in a community. It is noted that pupils at the end of primary school whose parents are literate have higher average performances than other children. In the EPA, the differences in averages are almost 39.8 points higher in language and 10.2 points in Mathematics in favour of children whose parents are literate. This difference in averages is significant at around 5% in language for learners in EPA.

Outside the EPA, the differences in average performance between the group of pupils whose parents are literate and the others are smaller, at around 6.7 points in language and 8.8 points in Mathematics.

Although these differences in performance are displayed between pupils whose parents are literate and the others in the EPA and outside the EPA, parental literacy has a positive influence on the performance of pupils at the end of their schooling.

7.3.1.4 Nursery school attendance

Learning begins at birth. This implies that due attention is given to child care and early education. World Declaration on Education for All (UNESCO, 1990, p. 6)

According to the OECD (2018), pre-school education is a critical period for adopting healthy behaviours, and research converges on the fact that early childhood education and care programs not only improve cognitive abilities and socio-emotional competencies, but also build a solid foundation for lifelong learning, make children's learning achievements more equitable, reduce poverty and improve social mobility from generation to generation. (EFA Global Monitoring Report: Literacy for Life, 2006).

7

Table 56 : Analysis of the influence of pre-schooling on learners' performance at the end and beginning of primary school

Pre-schooling			Coefficient	Standard error	Pupils' Statistics	Significance	FLG
EPA	Beginning of schooling	Language	55,72	24,57	2,27	SIGNIFICANT at 5%	0
		Mathematics	56,33	21,10	2,67	SIGNIFICANT at 1%	0
	End of schooling	Language	62,90	13,33	4,72	SIGNIFICANT at 1%	0
		Mathematics	36,28	12,66	2,87	SIGNIFICANT at 1%	0
Out of EPA	Beginning of schooling	Language	42,25	21,08	2,00	SIGNIFICANT at 5%	0
		Mathematics	41,30	16,04	2,57	SIGNIFICANT at 5%	0
	End of schooling	Language	48,21	7,92	6,09	SIGNIFICANT at 1%	0
		Mathematics	39,95	8,42	4,74	SIGNIFICANT at 1%	0

Whatever the learners' recruitment zone, attending pre-school has a positive influence on learners' performance in the two evaluation cycles. This influence is very strong at the beginning of schooling, with very large differences in averages in favour of those who attended pre-school, and they narrow at the end of schooling.

In the EPA at the beginning of schooling, there is a 56 point difference in the two assessment subjects in favour of learners who have been to pre-school, and these differences in average performance are significant at least 5% in both subjects. However, at the end of schooling, the learners who had been to school recorded an average of 63 points more in language and 36 points more in Mathematics than the others. The influence of pre-schooling is highly significant for learners at the end of primary schooling regardless of the subject assessed.

While outside the EPA, at the beginning of schooling, pre-school learners show an average of 41 points more than the others, pre-schooling has a significant impact on learners' performance. It can be seen that at the end of primary school in these areas, this impact becomes very highly significant, with the difference in average between pre-schooled and non-pre-schooled children increasing in language and decreasing in Mathematics.

7.3.1.5 Repetition

With regard to repetition, the Cameroonian education system has opted for collective promotion. This consists of not repeating learners within a level of education in primary school, but they can repeat when moving from one level of education to another. However, the repetition of a pupil may also be allowed exceptionally at the request of the parent concerned. However, the consistent implementation of this policy in the field is not effective; it depends on the interpretation of each teacher.

Table 57 : Analysis of the influence of repetition on learners' performance at the end and beginning of primary school

Repetition			Coefficient	Standard error	Pupils' Statistics	Significance	FLG
EPA	Beginning of schooling	Language	27,33	29,21	0,94	NON SIGNIFICANT,	0
		Mathematics	4,51	19,01	0,24	NON SIGNIFICANT,	0
	End of schooling	Language	-49,85	13,50	-3,69	SIGNIFICANT at 1%	0
		Mathematics	- 35,97	9,38	- 3,84	SIGNIFICANT at 1%	0
Out of EPA	Beginning of schooling	Language	- 37,01	15,05	- 2,46	SIGNIFICANT at 5%	0
		Mathematics	- 41,45	15,69	- 2,64	SIGNIFICANT at 1%	0
	End of schooling	Language	- 29,96	6,85	- 4,38	SIGNIFICANT at 1%	0
		Mathematics	- 29,03	6,23	- 4,66	SIGNIFICANT at 1%	0

At the beginning of schooling in the EPA, although pupils who have repeated a year have higher average performance than others, regardless of the subject assessed, the impact of repetition on their performance is not significant. However, at the end of primary school, the trend is reversed. Those learners who have already repeated a year perform worse than the others in both subjects assessed. And this time, repetition has a very negative influence on learners' performance.

Whereas for pupils who have already repeated a year and the others outside the EPAs, the differences in average performance between these two groups in the two assessment cycles and in the two subjects assessed are considerable. And these differences are more pronounced at the start of schooling, with a pupil who has already repeated a year at the start of schooling losing up to 37 points on average in language and 41 points in Mathematics compared to a pupil who has not yet been in this situation.

Enrolment in this zone reduces but does not cancel out these differences in average performance between pupils who have not yet repeated a grade and those who have. In these areas, repetition has a negative impact on learners' performance in language and Mathematics regardless of the level of schooling.

Repetition is not only costly, but also ineffective in improving educational outcomes. Alternative strategies include preventing repetition by addressing deficiencies as they are identified during the school year; providing individualised support for repetition; and raising awareness of the negative implications of repetition among stakeholders who are traditionally supportive of repetition. To support these strategies, complementary policies should enable schools and teachers to strengthen their capacity to respond to the learning needs of pupils by providing them with regular support as soon as necessary.

In conclusion, the practice of repetition in education systems is wasteful and pedagogically not very effective. However, in systems that aim to be competitive, remedies should be found to address the poor knowledge acquired by some learners, especially in EPA.

7

7.3.1.6 Pupil's age and repetition

The PASEC2019 report analyses the relationship between the age of the pupil (in completed years) and his/her performance, considering the role of repetition. It is noted that in Cameroon, at the beginning of schooling, this relationship is significant to the disadvantage of the older pupils in language, and the opposite is true in Mathematics. However, at the end of schooling, overall, the age of the pupil negatively influences his or her performance in reading and Mathematics. These results are similar to those obtained in the PASEC2014 assessment and show that children's late entry into school has a negative impact on their academic performance.

Table 58 : Proportion of pupils who have already repeated a year and average age of pupils surveyed at the end and beginning of primary school.

EPA	**Beginning of primary schooling**	**Proportion of pupils having already repeated**	**8,9%**
		Average age	**8,0**
	End of primary schooling	Proportion of pupils having already repeated	37,50%
		Average age	11,5
Out of EPA	**Beginning of primary schooling**	Proportion of pupils having already repeated	11,40%
		Average age	7,0
	End of primary schooling	Proportion of pupils having already repeated	31,20%
		Average age	11,30

The average age of learners surveyed in the EPAs is higher than that of learners outside the EPAs, both at the beginning and end of their primary schooling. As for the proportion of pupils who have already repeated a year, it is lower in the EPAs than outside, and this trend is reversed during the school career. Since numerous studies have sufficiently shown that the proportion of repeaters in a school also has a negative effect on the performance of these learners, this practice, which is considered unproductive, should be reviewed and replaced by reliable pedagogical practices such as remediation.

7.3.1.7 Language spoken at home

Globally, it is estimated that between 50 and 75 million 'marginalised' children are not in school. When the language used in school is not the child's first language, there is a higher risk of drop-out or failure in the early grades. Studies have shown that better results are achieved in primary school when the language of instruction is the learners' mother tongue. Yet, despite growing evidence and parental demand, many education systems around the world continue to impose the exclusive use of one, or sometimes several, preferred languages, thereby excluding other languages, and with them the children who speak them (Arnold, Bartlett, Gowani and Merali, 2006).

This is called 'Interlanguage Interference' and represents the transposition of knowledge from the mother tongue to the foreign language. And this reference to the mother tongue is often considered "as negative, as an obstacle, a block, a brake to the acquisition of another language" (Castellotti, 2001). Will referring to the mother tongue prevent learning a foreign language? Does this influence of the mother tongue really hinder the learning of the foreign language or does it act as a tool for learning the foreign language?

Table 59 : Analysis of the influence of speaking the language of instruction at home on learners' performance at the end and beginning of primary school

Speaks the language of instruction at home			Coefficient	Standard Error	Pupils' statistics	Significance	FLG
EPA	Beginning of schooling	Language	53,11	26,31	2,02	SIGNIFICANT at 5%	0
		Mathematics	28,57	19,20	1,49	NON SIGNIFICANT,	0
	End of schooling	Language	- 0,94	16,04	- 0,06	NON SIGNIFICANT,	0
		Mathematics	1,22	12,17	0,10	NON SIGNIFICANT,	0
Out of EPA	Beginning of schooling	Language	39,17	20,78	1,88	SIGNIFICANT at 10%	0
		Mathematics	34,04	18,17	1,87	SIGNIFICANT at 10%	0
	End of schooling	Language	12,96	7,44	1,74	SIGNIFICANT at 10%	0
		Mathematics	6,14	7,38	0,83	NON SIGNIFICANT,	0

Overall, there are differences in average performance between pupils who use the language of instruction at home and those who do not, irrespective of location (EPA and non-EPA), primary school level and subject assessed. All these differences are favourable to those who use the language of instruction, except for learners at the end of their schooling in the EPA. The differences in mean performance and its significance are different throughout the course depending on the location of the learner.

In the EPAs, the differences in averages show 53 points in language and 28.6 points in mathematics between the two groups of pupils in favour of those who use the language of instruction at home at the beginning of schooling. But this impact of the language of instruction spoken at home is only significant on their language performance. Following its evolution throughout the curriculum, the influence of speaking the language of instruction at home on performance in these two subjects is contrasted, while in mathematics it increases the average scores by 1 point, in language there is a decrease of 1 point. And its impact is not significant.

Outside the EPAs, pupils who use the language of instruction even at home show a 39-point difference in language and a 34-point difference in mathematics from those who do not use the lanuage of instruction at home. This influence of the language of instruction is positively significant on the performance of these learners. This highlights the crucial importance of the practice of the language of instruction in the development of cognitive processes in these young pupils.

However, although these differences in mean between the two groups diminish throughout the school career, the importance of using the language of instruction remains intact in improving skill acquisition.

In fact, the use of the language of instruction at home presupposes that the pupil is in an environment that allows him or her to do so, such as the presence of literate parents or brothers. This is very common in Out of EPA areas. Families should significantly reduce the number of children who discover the language of instruction at school. Children who speak a language at home and have no contact with the language used in school outside the classroom often have huge problems in understanding what they are being taught. This can be a reason for them to drop out.

7.3.1.8 Supporting the pupil with homework

Homework is an integral part of the pupil's and the teacher's life. In a way, it is a continuation of the school work done in class. Homework is certainly useful for learning, enables some pupils to progress and serves to consolidate learning done in class. Homework is not just about reviewing and reinforcing the material covered in class. It also helps the child to develop independence and a sense of responsibility. (Canter, 1995, p.1) But it can also reinforce social inequalities: not all parents can offer the same support to their child. (Question and answer, 2010, p. 3).

7

Table 60 : Analysis of the influence of homework help on learners' performance at the end of primary school

Aide à faire les devoirs			Coefficient	Standard error	Pupils' statistics	Significance	FLG
EPA	Beginning of schooling	Language	32,44	16,30	1,99	SIGNIFICANT at 5%	0
		Mathematics	21,22	14,26	1,49	NON SIGNIFICANT,	0
Out of EPA	End of schooling	Language	25,14	14,35	1,75	SIGNIFICANT at 10%	0
		Mathematics	9,82	14,55	0,67	NON SIGNIFICANT	0

At the end of primary school, pupils who get help with homework perform better than those who do not. This is true in both subjects assessed in the PASEC2019 test and regardless of the location of the pupil. It can be seen that this difference in average is greater in language than in Mathematics.

In the EPA, although differences in performance in the two subjects assessed exist between those who get help with homework and those who do not, the influence of homework support is only significant on their performance in language. This is the same trend in the other Learner Location Zone. This calls into question the quality of the homework that teachers give for homework and also the skills of those who practice this help.

The Cameroonian education service would benefit from better supervision of this practice, as is done elsewhere, instead of abandoning it to the whim of teachers.

7.3.1.9 Reading at home

Reading and Mathematics are fundamental disciplines; they are the basis of the teaching-learning process of other disciplines. The acquisition of reading and mathematical skills has a very important impact on the development of pupils' learning. While learning to read is undoubtedly a central task of the school, the family and the community play an important role in fostering a love of these subjects in childhood and throughout the life cycle. Pupils need to separate the practice of reading and Mathematics from the school context, taking them out into all settings. All assessments recognise that pupils who enjoy reading perform better than those who do not and that this enjoyment declines as young people progress through school. It is in the same logic that the PASEC2019 test at the beginning of primary school looks at the impact of the practice of reading on pupils' performance.

Table 61: Analysis of the influence of reading at home on learners' performance at the beginning of primary school

Sometimes reads at home			Coefficient	Standard error	Pupils' statistics	Significance	FLG
EPA	Beginning of schooling	Language	20,86	21,62	0,96	NON SIGNIFICANT ,	0
		Mathematics	14,67	21,80	0,67	NON SIGNIFICANT ,	0
Out of EPA	End of schooling	Language	5,83	17,32	0,34	NON SIGNIFICANT ,	0
		Mathematics	- 8,43	21,64	- 0,39	NON SIGNIFICANT ,	0

In EPAs, learners who read at home score more than 20.8 points on average in language and 14.7 points higher than others on the PASEC 2019 Level 1 assessment. Outside the EPA, learners who read at home show contrasting performances in the two subjects assessed. While in language they have slightly higher average scores than others, in Mathematics it is the opposite. However, in the two locations selected, reading at home does not significantly impact on the performance of pupils in these two subjects assessed.

7.3.1.10 Taste for reading and Mathematics

Table 62 : Analysis of the influence of taste for reading and Mathematics on learners' performance at the end and beginning of primary school

Taste for reading and Mathematics			Coefficient	Standard error	Pupils' statistics	Significance	FLG
EPA	The pupil likes reading	Language	38,69	17,31	2,24	SIGNIFICANCT at 5%	0
	The pupil likes Mathematics		- 3,79	13,74	- 0,28	NON SIGNIFICANT	0
	The pupil likes reading	Mathematics	17,31	12,80	1,35	NON SIGNIFICANT	0
	The pupil likes Mathematics		9,57	12,78	0,75	NON SIGNIFICANT,	0
Out of EPA	The pupil likes reading	Language	29,73	16,64	1,79	SIGNIFICANT at 10%	0
	The pupil likes Mathematics		35,22	15,87	2,22	SIGNIFICANT at 5%	0
	The pupil likes reading	Mathematics	9,04	12,60	0,72	NON SIGNIFICANT	0
	The pupil likes Mathematics		42,74	13,19	3,24	SIGNIFICANT at 1%	0

At the end of primary school, whether located in EPA or outside, pupils who love reading perform better than others on the language assessment. This love of reading only has a significant influence on their performance in language. At this level of the school curriculum, there is a clear correlation between liking reading and being able to read. This implies that pupils who love reading can read and understand a mathematical statement and therefore solve it.

While liking Mathematics has a different impact in EPA, pupils who like Mathematics score on average less than 4 points on the language test than those who do not. Outside the EPAs, learners who like Mathematics perform better than others in both subjects assessed, with differences in average scores ranging from 35.2 points in language to 42.7 points in Mathematics. The taste for Mathematics has a very significant impact on the performance of learners in this same discipline in the PASEC2019 test.

In short, pupils who have a love for reading and/or Mathematics perform better in these two subjects than others, with the exception of Mathematics in the EPA. Therefore, although these two subjects are teaching-learning tools, it is imperative that pupils show a love of reading.

With regard to the practice of reading at home (the taste for reading and/or Mathematics), the performances recorded in disadvantage of learners who declare liking/practicing these subjects, the statistical non influence of these factors on the performances of these pupils. All these results, which run counter to a great deal of research, can be explained by the fact that these are learners who live in an environment where the use of this language of instruction is not sufficiently practised. Most of them live in the French-speaking area, and most of their parents are French-speaking, who have difficulty in providing adequate support for their children's learning. The majority of English-speaking schools in these areas are located in the urban environment and parents enrol their children in these schools out of snobbery.

7

7.3.2. School environment and pupil performance

This section looks at the school environment of pupils in and outside the EPAs. In particular, the learning conditions impact on the acquisition of skills and knowledge by pupils.

7.3.2.1 School infrastructure and pupil performance

Infrastructure (buildings, classrooms, equipment) is essential for learning in our schools. The presence of high quality school infrastructure facilitates better teaching, and can contribute to the reduction of school drop-out. This is because parents are attracted to public schools (better equipped) to the detriment of public schools in urban areas, while in rural areas the choice is made by default because of the unilateral presence of public schools that are very poorly equipped with infrastructure.

Table 63 : Analysis of the influence of infrastructure on the performance of learners at the end and beginning of primary school

School infrastructure index			Coefficient	Standard error	Pupils' Statistics	Significance	FLG
EPA	Beginning of schooling	Language	4,90	2,84	1,73	SIGNIFICANT at 10%	0
		Mathematics	4,09	0,68	6,03	SIGNIFICANT at 1%	0
	End of schooling	Language	3,26	0,76	4,31	SIGNIFICANT at 1%	0
		Mathematics	3,22	0,80	4,03	SIGNIFICANT at 1%	0
Out of EPA	Beginning of schooling	Language	- 0,40	2,26	- 0,17	NON SIGNIFICANT	0
		Mathematics	3,50	0,64	5,44	SIGNIFICANT at 1%	0
	End of schooling	Language	3,34	0,45	7,42	SIGNIFICANT at 1%	0
		Mathematics	3,02	0,39	7,71	SIGNIFICANT at 1%	0

It is observed that the school's infrastructure index has a highly significant impact on learners' performance regardless of the area in which the pupil is located and throughout the schooling process. The better the infrastructure of the school, the better the pupils perform in language and Mathematics. This is strongly correlated with the ANOVA analyses that stated in the previous paragraphs the strong impact of the school a pupil attends on the variability of his or her performance in language and Mathematics on this test.

In the EPA, 1% more of the school's infrastructure index improves the performance of a pupil at the beginning of his or her schooling by 5 points in language and by 4 in Mathematics. At the end of schooling, the improvement is 3 points in language and Mathematics. These facilities have a very significant impact on improving the performance of learners in the EPA.

Outside the EPA, 1% more school infrastructure between two schools improves the performance of the pupil in the school with the best index compared to the one in the other school by 3.5 points in Mathematics at the beginning of schooling, and by 3 points in both subjects at the end of schooling. These facilities improve the performance of these learners very significantly. It is only in language at the beginning of schooling that we observe that the infrastructures have a negative impact on pupil performance, although the statistics do not confirm the significance of this impact.

Graph 220 : Index of perception of working conditions, classroom equipment and classroom size in EPA and outside
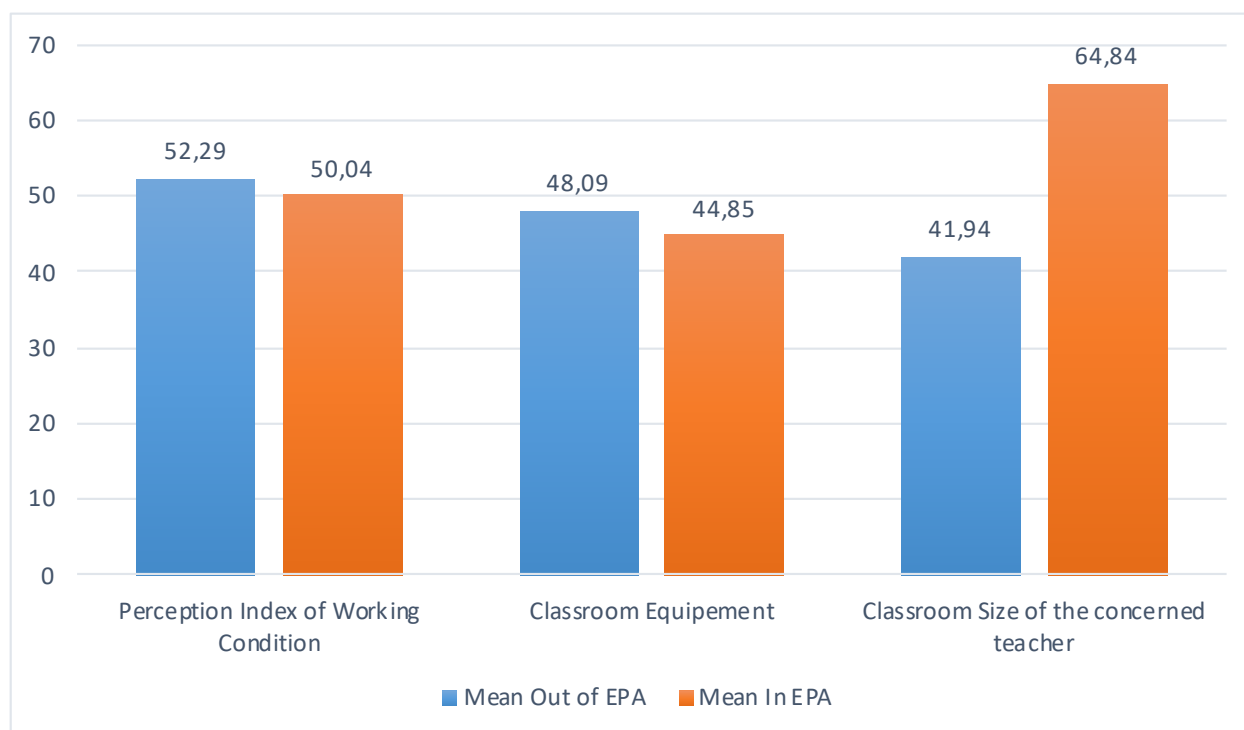
7.3.2.2   Classroom equipment and pupil performance

The classroom equipment index provides information on the level of equipment in classrooms necessary for learning, such as the availability of textbooks for pupils, documents and teaching materials for teachers and classroom furniture. This index is better when it is higher than 50%.

We note that among the schools sampled, those located outside the EPA have an average equipment index of 50%, while those in the EPA have 46%, 4% lower. This is in line with the description of teaching conditions in the EPAs given earlier. Schools in the EPA are poorly equipped compared to schools in other parts of the country, and this deficit is even more pronounced when compared to schools in the two strata, Center and Littoral Francophone. Despite the strong mobilisation of resources in favour of the EPA since their advent in 2000, reading and Mathematics textbooks are still not available in sufficient numbers for pupils in these localities, teachers do not have sufficient teaching guides and reading and Mathematics programs, schools are not sufficiently equipped with teaching materials and classroom furniture, and the supply of electricity is almost non-existent. In the EPA, there are many schools "under the tree", schools without any classrooms, blackboards or teaching materials, as these are areas that receive a lot of refugees.

These necessary facilities, whose impact on learners' performance is recognised, must be effectively available and in sufficient numbers in schools in EPAs.

7.3.2.3   Teachers' perception of working conditions

The implementation of teaching-learning requires, among other things, the availability of certain material and pedagogical conditions: an adequate physical environment, a teaching program, and sufficient and good quality teaching materials. Regardless of the location of the school, teachers have a not very satisfactory perception of their working conditions. This is because society in general works with a compensation system. This means that while teachers in EPAs experience difficult working conditions and access to schools, the unavailability of teaching materials, etc., they have high absenteeism rates on average, fewer pedagogical inspections, and the quantity and quality of learning are not monitored. The latter are easily integrated into this environment and consequently benefit from a strong involvement and multi-faceted support from the community.

However, outside the EPA, teachers' complaints may be of a social nature through the consideration that others haveow involvement in the community), salary conditions may be considered low because of the greater financial demands, parents' expectations are higher and consequently the pedagogical constraints. In short, each of these areas has its specific realities, but incentives need to be put in place so that on average teachers' perception of their working conditions improves and consequently the impact on learners' performance.

7.3.2.4   Class size and pupil performance

Class size is regularly debated in discussions about how best to contribute to the educational success of young people. Pupils in small teaching classes perform better than those in large classes. Smaller classes are seen as beneficial to the development of pupils' skills and learning. This is because they allow for more individualised teaching, help to cope with the "poor listening and concentration skills of pupils", increase pupil participation and attendance, increase communication between parents and teachers, and allow the teacher to spend more time on pedagogy rather than on maintaining discipline and bureaucratic tasks.

The average number of pupils in classrooms in the sampled schools outside EPAs was 42, compared with an average of 65 in EPAs, or 23 more pupils or the equivalent of one classroom. This implies that, on average, pupil/classroom ratios are relatively high in EPAs. Research and Schanzenbach's (2014) study concludes that: class size is an important determinant of pupil achievement; when everything remains the same, an increase in the teacher/pupil ratio hurts pupil achievement. This was strongly felt in all countries after the adoption of the EFA initiative. It has led to an impressive increase in enrolment rates, but investments in infrastructure and human resources have not followed. We find ourselves with many classrooms with overcrowded enrolments, especially in the EPA, the epicentre of the application of this initiative.

7.3.3.   CHARACTERISTICS OF TEACHERS SURVEYED IN AND OUTSIDE THE EPA

7.3.3.1   Gender

At the national level, women teachers represent 48.9% of the school teachers surveyed. The distribution of teachers between the two zones EPA and 'Outside EPA' is very disparate, with women accounting for 56% of teachers in EPA and 69% outside. Although women outnumber men in the teaching profession, there is a need to allocate human resources in localities more equitably.

Table 64 : Distribution of surveyed teachers by gender in and outside EPA

Gender of teacher	EPA	Out of EPA
Male	44,1%	31,28%
Female	55,9%	68,72%

Looking at teachers' performance by gender, it was found that female teachers scored significantly higher (a difference of 22.7 points) than male teachers in Reading Comprehension. But male teachers scored significantly higher in mathematics. These variations in teacher performance by gender necessitate the application of equity in their assignments in these two areas.

7.3.3.2   Seniority

Although the effectiveness of teacher seniority in ensuring that pupils achieve the best learning outcomes is not fully demonstrated, their guidance or compass in providing pedagogical advice to novice and pre-service teachers is of immeasurable importance and utility. However, we note that at the end of this evaluation, whether in Reading Comprehension or Mathematics, teachers with more seniority (more than 5 years) show a greater level of mastery

Table 65 : Distribution of surveyed teachers according to number of years of service in and outside EPA

Longevity of teacher	EPA	Out of EPA
less than 5 years	30,36%	45,34%
Between 6 and 10 years	41,07%	40,16%
Between 11 and 20 years	26,79%	11,92%
Above 20 years	1,79%	2,59%

In the first two modalities, we observe that the proportions of teachers located out of the EPA (71%) are lower than those of teachers located in EPA (85%). It can thus be seen that the majority of teachers in this education sub-system have been in the profession for between 0 and 10 years. There is a renewal of human resources, which avoids teacher stagnation and a consequent drop in productivity. Twenty-nine per cent of EPA teachers have more than 10 years' experience, and they can be very useful in providing pedagogical support to the youngest. It can be seen that this system succeeds in retaining teachers in the EPA, which can be explained by the fact that these schools are located in urban areas.

7

7.3.3.3 The level of education and training of teachers

Whether in the EPA or outside them, almost all teachers have a level of education higher than primary school. A majority of teachers in EPA and outside them have higher education qualifications (68%). There is also a low proportion of teachers in EPA who have secondary education (30.36%), while outside EPA 31.33% have secondary education. However, although the statistics of this evaluation reveal that university teachers perform better than their secondary colleagues in reading comprehension and mathematics, and thus justify the high presence of academics in this sub-system, the education has not made access to teacher training colleges conditional on holding a university degree. Thus, the presence of a high number of English-speaking primary school teachers with a university degree is not an external performance of the education system in this country. Given that the analysis of the number of years of study of teachers in the DSSEF shows a saturation effect beyond 13 years; the implication is that secondary level school graduation should serve as a minimum reference for the recruitment of teachers. Initial training in ENIEGs brings only a modest surplus of acquisitions compared to teachers who have not had any specific training.

It was decided instead to improve the content of the curricula in these teacher training colleges and to standardise the recruitment of candidates and their training, whether in the private or public sector.

Table 66 : Distribution of teachers by academic level in and outside EPA

Academic level of teacher	EPA	Out of EPA
Primary level	1,79%	1,04%
Secondary level	30,36%	31,33%
University level	67,86%	67,62%

It is observed that less than 15% of teachers in EPAs and 21% in other localities have not received initial professional training. And only 3% of teachers in EPAs and 2% outside EPAs had less than six months of training.

In EPAs, almost the majority (48%) of teachers had only one year of training, and 35% had at least two years of training. For teachers in other locations, the trends are similar: 56% had one year of training and 22% had at least two years. These figures are closely linked to those for the academic level of teachers, since those who have benefited from one year are candidates with a baccalaureate and are mostly students. It can thus be seen that the distribution of the human resource according to the country's localities is very homogeneous, especially when the criterion of initial training is considered.

Table 67 : Distribution of teachers according to the length of their professional training in and outside EPAs

Duration of Professional training	EPA	Out of EPA
No Duration of Professional training	14,95%	20,83%
Less than six months	2,80%	1,82%
One year	47,66%	55,73%
Two years and more	34,58%	21,61%

CONCLUSION

At the end of this evaluation, for the case of Cameroon, where the percentage of teachers acknowledging having benefited from at least two years of initial training exceeds 20%, there is a trend towards relatively satisfactory levels of disciplinary and didactic knowledge.

While some schools have excellent infrastructure, others lack essential services such as classrooms and benches.

Indeed, it appears that a high level of family supervision contributes to motivation and improved school performance. It is necessary to generalise specific collective spaces within schools and to equip them with school goods and materials, in order to contribute to the improvement of pupils' academic performance. This would also help to reduce inequalities of opportunity between poor and wealthy pupils. The results show that special attention should be paid to EPA (equipping schools with teaching materials, improving teachers' living conditions). The Cameroonian education system must be constantly evaluated and self-evaluated in order to reduce the enormous disparities that persist, the pockets of under-schooling and to reinforce equity in order to achieve the MDG4. The results show that special attention should be paid to EPA (equipping schools with teaching materials, improving teachers' living conditions). The Cameroonian education system must be constantly evaluated and self-evaluated in order to reduce the enormous disparities that persist, the pockets of under-schooling and to strengthen equity in order to achieve the MDG4.

More than twenty years after their establishment, the government must redefine these objectives and priorities for investment in EPAs to ensure quality learning for learners. This would allow the different interventions of partners on the ground to be federated and harmonised. The government would ensure that policies are put in place that can help all pupils to progress, to provide all young people with the necessary skills and learning, while reducing the weight of social determinism. This means strengthening the organisation and governance of the education system, and pedagogical practices throughout the chain, in order to change the content and methods of teaching. Subsequently, the Cameroonian education system would benefit from being less centralised, relying on decentralisation and deconcentrating to improve its cost-effectiveness in order to better evaluate the performance of learners in relation to the actual financing of education in the EPAs and outside.

7

CHAPTER 8

SUMMARY OF FINDINGS AND AVENUES FOR REFLECTION AND ACTION

Raising the quality of education in Cameroon requires improving the quality of pupils' learning while guaranteeing an acceptable level of retention throughout their school career. Indeed, the educational achievements of pupils are the result of a series of efforts made by the country in favour of an increasingly efficient and equitable provision of education. These efforts should be directed towards the management of school supplies, the equipping of schools with classrooms, the provision of quality teachers both in terms of their academic level and their initial and in-service training, but also the reduction of inequalities in the school environment, etc.

Concerned about the importance of pupil learning in education systems, representatives of the global education community adopted MDG 4 by signing the Incheon Declaration at the World Education Forum in May 2015. The 10 targets of the Declaration aim to support learning in all its forms and modalities that can influence people's choices to create more just, inclusive and sustainable societies. To support progress towards achieving SDG 4 and its targets, the global education community adopted the Education 2030 Framework for Action in Paris in November 2015.

In response to this global initiative, African countries have developed a new African Union (AU) Continental Education Strategy for Africa (CESA) 16-25, covering the period from 2016 to 2025. Through this strategy, the African continent seeks to better appropriate global goals, adapt them and make them compatible with its own objectives. The strategy is in line with the AU's Global Agenda 2063 and, among other things, capitalises on post-2015 sectoral strategies, such as the Science, Technology and Innovation Strategy for Africa (STISA) 2024, the revised Youth Decade Action Plan , and the continental strategy for technical and vocational education and training, as well as new concerns integrating girls' education, school feeding, school health, school administration or the teaching profession in terms of training and/or living and working conditions. The fourth strategic objective of the ACSS is to ensure the acquisition of the required knowledge and skills, as well as the improvement of completion rates at all levels and for all target groups, through national, regional and continental harmonisation processes.

Following the example of all the countries that participated in the PASEC2019 evaluation, Cameroon has committed itself to this strategy by integrating it into its sectorial education programs in the form of priority axes. Thus, Cameroon plans to achieve objectives that will improve both the quantitative and qualitative supply of education and the performance of learners by 2020. In line with the Education and Training Sector Strategy Paper 2013-2020, several actions have been implemented f rom 2015 to 2019 to ensure an improvement in teaching and learning conditions (quality of buildings, qualification of teachers, class sizes, availability of teaching and learning materials for pupils and teachers, quality of curricula, management of school time, school governance, etc.).

This chapter provides a synthesis of the various findings from the analysis of the PASEC2019 evaluation data in Cameroon in order to outline useful avenues of reflection for its education policy. It will specifically examine the possible effects of the measures taken by the countries on the results obtained.

8.1 PUPILS' SKILLS

8.1.1 Beginning of primary education

In Cameroon, the PASEC2019 evaluation estimates the average performance of pupils at the beginning of schooling at 522.2 and 516.7 in language and Mathematics respectively. These levels of performance conceal huge disparities both between and within strata.

For the country as a whole, more than 60% of early school leavers have not reached the 'sufficient threshold' on the language proficiency scale. These pupils have relatively high learning difficulties in reading and understanding words, sentences and short texts, as well as oral messages.

In view of the difficulties experienced by these pupils, measures for better management of learning difficulties should be implemented. Pupils should be taught explicitly and systematically,   aimed at the acquisition of the rules governing the written code, namely those enabling links to be established between written and oral units. Failure to master the basic processes of reading can lead to school drop-out and illiteracy. Cameroon should continue to strengthen policies to promote the development of pre-school education, and possibly rely on the recommendations given by CONFEMEN in its Reflection and Orientation

Document for the 58th Ministerial Session: «Promoting early childhood development and ensuring access to equitable, quality early childhood education: a foundation for successful learning''. Taking account of pre-school in the learning process of pupils at the beginning of schooling is all the more important as mastery of the language of instruction is the major vector for other school learning, particularly for Mathematics at the beginning of schooling.

At national level, on average, more than 58% of pupils have reached the 'sufficient' threshold in Mathematics, of whom more than 29% can recognise numbers up to 100, complete logical sequences, compare numbers, perform operations (addition and subtraction) on numbers below 50 and reason about basic problems. However, a significant proportion of these pupils (42%) have difficulty manipulating concepts of spatial location (below/above/next to) and recognising simple geometric shapes. These pupils are more likely to encounter even greater difficulties later on in their schooling, particularly when reasoning becomes more central to problem solving. It is therefore advisable to identify pupils in this situation at this stage in order to implement follow-up and remedial measures.

The difficulties encountered by pupils in basic mathematical exercises raise questions about the teaching practices of quantities and numbers in the first classes of the cycle. These difficulties could be linked to the pupils' level of understanding and oral expression in the language of instruction. The link between the mother tongue and the language of instruction should therefore be examined, as it could be a determining factor in the success of pupils, particularly those at the beginning of primary school.

8.1.2 End of primary schooling

At the end of primary school, the average performance of pupils in Cameroon is estimated at 529.7 and 488.1 points respectively in reading and Mathematics in the PASEC2019 evaluation. As at the beginning of schooling, these averages are marked by disparities between strata and within strata.

In reading, more than 46% of pupils are below the 'sufficient' competency threshold and, therefore, in a situation of learning difficulties in reading. At this grade level, these pupils have difficulty understanding single words from their daily lives and single sentences, as well as locating explicit information in short and medium texts by picking up cues from the text and questions. Among them, some pupils (6.1%) are not capable, on a routine basis, of applying the most basic knowledge and skills that the PASEC survey seeks to measure, when they are called upon to enter lower secondary school.

In Mathematics, 67% of pupils at the end of primary school are below the 'sufficient threshold' of competence. These pupils have difficulty answering short questions related to the three cognitive processes considered in the PASEC2019 Mathematics test: 1) knowing, 2) applying, 3) solving problems. Furthermore, these pupils have great difficulty in performing elementary operations with decimal numbers.

In both subjects, whether at the beginning or the end of primary school, pupils below the 'sufficient' thresholds experience multiple difficulties in mastering the skills deemed essential for continuing their education. This observation leads to the suggestion that special education measures or activities be introduced or reinforced to help pupils with learning difficulties to succeed in terms of education, socialisation and qualifications. These types of measures are indeed only very rarely present in Cameroon's 2013-2020 Education and Training Sector Strategy Paper. However, the management of pupils in difficulty, involving various stakeholders (teachers, head teachers, psychologists, social workers, parents, community, etc.) could contribute to improving the performance of the education system in Cameroon.

8.2 SCHOOL ENVIRONMENT AND PUPIL PERFORMANCE

Among the environmental characteristics likely to influence pupil performance, those related to the school and out-of-school environment must be considered. According to the results of the PASEC2019 evaluation, disparities are observed between schools in the learning results of pupils. More than 65% (respectively 51%) of the variation in reading (respectively Mathematics) scores is explained by differences between schools. The improvement of the school environment could be used as a lever to act in the framework of educational policies in favour of equity. Thus, the Cameroonian government should strengthen its policy on the allocation of educational resources according to the needs of different localities, schools and specific groups. The deficits in school infrastructure (classrooms, latrines, infirmaries, libraries, canteens, etc.) and in human resources (classroom teachers, social workers, psychologists, etc.) should be reduced in quantity and quality. Particular attention should also be paid to improving the governance of the education system. Decentralisation measures could, if judiciously designed and implemented in the field of education, promote effective management of disparities between schools with a positive impact on pupil learning.

In terms of gender, at the national level, it is observed that girls perform better in reading while boys do better in Mathematics. This is a result already known from previous PASEC assessments and widely observed in international surveys measuring pupils' skills. Consequently, and in view of the recurrence of this finding, it would be appropriate for countries to consider differentiated measures, on the one hand to increase reading time and opportunities for boys and, on the other hand, to develop initiatives to improve girls' performance in Mathematics. Further studies to investigate the extra-curricular factors (socio-cultural, socio-economic or other) that may explain this difference could also be envisaged.

Cameroon faces low access to pre-school education, limited to only about 40% of children. However, the results of the PASEC2019 evaluation show that pre-primary education has a key role to play in the development of children's basic skills, as it is positively linked to pupils' learning outcomes. In taking into account the orientations of the MDG4, the government has given an important place to pre-primary education in the architecture of the Cameroonian education system through the annual reviews of the implementation of the 2013-2020 education and training sectorial strategy. These measures do not yet seem to have borne fruit. Given this low rate of pre-school, the government must continue to redouble its efforts to promote pre-school as a priority. Without exceptional mobilisation, it will be difficult to achieve the 2030 Agenda goal of offering all children at least one year of pre-primary education.

Repetition affects more than 45% of pupils during their primary school career in Cameroon. This finding is worrying and raises questions about the internal efficiency of the Cameroonian education system. Moreover, repetition does not seem to allow repeaters to catch up with non-repeaters. In this regard, the question of how to deal with pupils in difficulty in schools also arises. It is therefore essential to reiterate the importance of setting up a system for identifying, helping and monitoring pupils with learning difficulties with a view to adapting them to school.

In terms of school management, in-service training for head teachers does not seem to have benefited all pupils to date, particularly those with learning difficulties. Capacity-building measures for head teachers are thus struggling to achieve their objectives. A review and evaluation of in-service training for head teachers is needed. This includes an examination of the content and methods of this training (analysis, training of trainers, etc.). Consideration should also be given to the initial training of school head teachers before they take up their duties.

The Cameroonian education system is characterised by a predominantly public education offer. However, the quality of education in private schools seems to be better than in public schools. Although the government's efforts must converge towards policies capable of ensuring quality education for all (MDG 4.1) on an equal footing, these efforts should continue so that public schools also bring a higher proportion of pupils to the necessary skills.

8.3 TEACHERS' CHARACTERISTICS, KNOWLEDGE AND SKILLS

8.3.1 Teachers' knowledge and skills

The results of the PASEC2019 survey show that the majority of Cameroonian teachers demonstrated a satisfactory level of mastery of the disciplinary contents (Reading Comprehension and Mathematics) taught at primary level. However, in view of the proportion of teachers at level 1 and below on the Reading Comprehension (over 5%) and Mathematics (over 26%) competency scales, training for these teachers is urgently required. This training could be based on work focused on the items in each of the levels of the reading and Mathematics competency scales.

In addition to the special attention to be given to teachers at level 1 and below, it would also be appropriate, through specific training, to maintain and strengthen the skills of those who have a good command of the basic content taught.

On the other hand, teachers' didactic knowledge in Reading Comprehension and Mathematics is much less solid. In other words, although teachers have a good knowledge of the subject content taught on average, a much greater number of them have difficulty analysing their teaching approaches, choosing situations adapted to the learning objectives, and identifying common errors and their sources so as to help pupils progress.

All these observations argue in favour of initial and/or in-service training which, in addition to mastery of the subject content to be taught, would give an important place to the didactics of these subjects. This training should be in line with teachers' needs.

In view of these observations and the place of the teacher in the teaching-learning process, it would seem necessary to consider the teaching function more as a profession requiring not only in-depth subject knowledge, but also specific professional skills (didactic, psycho-pedagogical, etc.) acquired and maintained through initial and in-service training and practice.

In this perspective, providing teachers with the necessary pedagogical and didactic resources (books, digital tools, in particular computer equipment, software, access to digital platforms), so that they can improve their general culture and their professional qualifications, is an avenue of action to be explored. The materialisation of these opportunities should be accompanied by the encouragement and motivation of teachers to participate in enhancing their knowledge and skills, so as to derive maximum benefit from them. What could improve their pupils' learning at school?

8.3.2 Experience and in-service training of teachers

The most striking results of the analysis of teachers' characteristics, knowledge and skills relate to their scores according to their seniority, their level of academic training and their participation in in-service training. Two observations can be made from these results according to the PASEC2019 survey: on the one hand, teachers with a university education have better scores on the survey tests than those with a secondary education; and on the other hand, teachers declaring to have a long teaching experience (between 11 and 20 years) perform better than their less experienced colleagues (at most 5 years).

However, at the national level, teachers who have received in-service training do not score better on the survey than those who have not. This result should not be seen as a challenge to in-service training, which is recognized as enabling teachers to improve their practices (Baribeau, 2009; Bidjang, 2005) (Ekanga Lokoka, 2013; Masselter, 2004) and thus should make it possible to better support pupils in their learning (Etumangele, 2006; Mouélé, 2017; Vita, 2014). However, it calls for questions to be asked about the quality of this training, in particular about its ability to take into account the specific needs of different categories of teachers (experienced/novice, university or secondary training, etc.).

These observations invite decision-makers and teachers to revisit the various contours of in-service teacher training in terms of content and implementation process. They also call for special attention to be paid to less experienced teachers in the context of in-service training. These findings also suggest that the expertise of the most experienced teachers should be sought more in training courses.

8

8.3.3 Teachers' perception of their material And social working conditions

With regard to their working conditions, Cameroonian teachers have a generally satisfactory perception of school programs. However, their view of the quality of buildings and the availability of school supplies is negative.

The majority of teachers say they have a favourable opinion of the management of their school, and also claim to have good relations with their colleagues and the community.

The vast majority of teachers are less satisfied with their salary situation. The same is true of career promotion opportunities.

These results argue for the implementation of a national strategy for the professionalization of teachers that takes into account an adequate physical working environment, while offering training and career promotion opportunities for all. An improvement of the salary conditions for a greater motivation of teachers and a greater attractiveness of the profession is necessary.

More specifically, an effective national strategy for appropriate in-service training should enable teachers to improve their qualifications, change or extend the scope of their activities, qualify for promotion, and keep abreast of developments in both content and methods in the disciplines and teaching areas.

Improving the status of teachers in line with educational needs and challenges is desirable to maximise the effectiveness of teaching and to enable teachers to devote themselves fully to their professional tasks, provided that their remuneration ensures a reasonable standard of living for themselves and their families.

These different policy options for teachers should help to consolidate the good quality of the school climate, which is already perceptible in the positive view that teachers have of school management and the school curriculum, and also to maintain good relations within the teaching staff and between educators and the community.

8.4 CHANGES IN THE EFFICIENCY AND EQUITY OF EDUCATION SYSTEMS

The two cycles (2014 and 2019) of the PASEC survey have made it possible to analyse the evolution of the efficiency and equity of the Cameroonian education system. At least six main findings from the analysis of the evolution of efficiency and equity can be retained. (i) Inequalities in skills in the different strata are located between pupils, but much more so in inequalities between schools; (ii) The increase in disparities between the least and most efficient pupils was mainly accompanied by an increase in disparities between schools; (iii) the extent of inequalities in performance between pupils varied from one stratum to another; (iv) the improvement in performance was more marked for the best performing pupils; (v) differences in performance increased between the lowest and highest performing pupils; (vi) disparities in performance by gender persisted and changed according to the subject assessed.

 Even if the challenges are enormous for the education system in Cameroon, it should be noted that an improvement in the performance of pupils, and in particular that of the weakest, without altering achievements of the best performers, constitutes a major challenge in terms of both the efficiency and the equity of the education system.

These different observations call on the Cameroonian government and the various development partners to work towards the reduction of certain remarkable inequalities, for example, of a territorial and economic nature. Even if social inequalities can be correlated to territorial and economic inequalities, the reduction of territorial inequalities is one of the challenges that the Cameroonian education system has set itself through the implementation of a sectoral strategy for education and training on the one hand, and economic inequalities is a key issue that the Government of Cameroon has included in its national development strategy, the Growth and Employment Strategy Paper (GESP) on the other.

It is therefore important to question the way in which policies to reduce territorial inequalities are implemented and to continue efforts to reduce these inequalities. To this end, the distribution of resources (material, financial, human, etc.) between schools (regardless of their remoteness) must be based on a logic of equity, with particular attention paid to very remote schools.

The pursuit of strategies to reduce social inequalities in parallel with the reduction of territorial inequalities must be done within a framework that does not further widen the gap between strong and weak pupils. Weak pupils should be supported in a way that avoids a cycle of accumulating underachievers.

With regard to the gender issue, it is necessary to intensify efforts in favour of girls and to motivate them to learn Mathematics. To this end, strategies for eliminating gender stereotypes need to be questioned and should include the community, teachers and head teachers.

8.5 PERSISTENCE OF BOTTLENECKS IN PEZS.

In addition to the problem of inadequate education provision (insufficient classrooms, teachers, etc.), the PEZs have a low rate of enrolment of girls due to cultural (early marriage, etc.) and economic (subsistence farming, livestock rearing and fishing as main sources of income, etc.) constraints.

More than two decades after the adoption of the PEZ concept, the efforts made in these regions of the country have proved ineffective in closing the gap with other regions. The Cameroonian government must redefine the objectives and priorities of educational intervention in the so-called PEZ regions to ensure quality learning for pupils while reducing the weight of socio-economic determinants.

In addition, the policy of decentralisation of public administrations in Cameroon should accelerate that of the still centralised education system. Indeed, the study on behaviours, skills and practices on the schooling of children, particularly girls, conducted in the PEZs proposes the intensification of communication and awareness-raising, through civil society organisations and community leaders, with a view to promoting the right to education of all children (MINEDUB - UNICEF, 2018).

CONCLUSION

The results of the evaluation highlight, once again, the existence of an influence of the school context on school results through the material conditions of reception and the provision of didactic and pedagogical materials. However, the establishment of these conditions is often linked to factors outside the school, in particular to the overall governance of the education system and the national distribution of resources. The same applies to policy choices in terms of teacher training, pedagogical approaches, particularly with regard to the dominant paradigms (competency-based approach) and linguistics (language of instruction/bilingualism), which also determine the internal efficiency of the education system. To this must be added the disparities according to region (urban, rural, isolated areas, conflict situations, etc.), the differences according to the nature of the establishments (public, private, parents' schools etc.) and the possible effects of socio-cultural or socio-economic factors on results according to gender.

These factors are sometimes difficult to control without the intervention of other actors, often outside the school, notably researchers and academics, and policy-makers, which implies the establishment of partnerships for a more systemic approach to the problems of the education system.

In the light of the above analyses and the resulting ideas, CONFEMEN's intervention in terms of accompanying Cameroon through the logic of the implementation of evaluation will be strengthened on the one hand by the setting up of a structure called Learning Achievement Unit (LAU), dedicated to conducting regular evaluations of the achievements of primary and secondary school pupils, and on the other hand, through the development and implementation of a training plan for trainers in the regions of the country known as "Priority Education Zones (PEZ)" thanks to the exploitation of the results of standardised evaluations. The definition of a roadmap at the national level, resulting from the exploitation of the main results for the improvement of learning and the reduction of disparities in and between the regions of the country constitutes an essential element in the reorientation of national education policies through the elaboration of a new Education and Training Sector Strategy Document backed by the National Development Strategy of Cameroon.

To this end, it will be necessary to (i) monitor the sectorial strategy of education and training in Cameroon which takes into account the achievement of the targets of the MDG4 to better impact the quality of learning outcomes and the efficiency of the education system; (ii) work on the issue of teachers in the search for the quality of learning outcomes and to explore in greater detail the extra-curricular determinants of the quality of learning outcomes. In addition, secondary analyses will have to be carried out in order to explore certain issues in greater detail.

REFERENCES

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. Educational psychology review, 13(1), 1-22.

8

Tableau B5.1 : Décomposition de la variance des scores en lecture et en mathématiques

Lecture			Mathématiques		
Variance Écoles	Variance Élèves	Corrélation intra-classe	Variance Écoles	Variance Élèves	Corrélation intra-classe
3881,4	4553,6	0,5	3385,1	3274,1	0,5

Tableau B5.2 : Facteurs de réussite associés aux performances scolaires : Modèle élèves

	Lecture		Mathématiques	
	Coefficient de régression	Erreur type	Coefficient de régression	Erreur type
Niveau socioéconomique de la famille de l'élève	0,3	0,6	0,4	0,5
L'élève est une fille	-6,7	5,7	-15,5	4,5
L'élève a redoublé au moins une fois	-24,3	5,6	-18,4	4,6
L'élève a fait la maternelle	19,7	4,7	10,3	5,1
Âge de l'élève	-13,9	3,7	-12,3	3,6
Constante	**544,2**	**35,1**	**495,0**	**32,2**

**Significatif au seuil de 5% ; ***Significatif au seuil de 1%

Tableau B5.3 : Facteurs de réussite associés aux performances scolaires : Modèle élèves- Nombre enseignants

	Lecture		Mathématiques	
	Coefficient de régression	Erreur type	Coefficient de régression	Erreur type
Absentéisme du maitre	1,0	6,7	-0,4	6,9
Nombre d'élève dans la classe	20,5	5,3	15,6	5,2
Niveau socioéconomique de la famille de l'élève	0,3	0,6	0,4	0,5
L'élève est une fille	-6,6	5,7	-15,4	4,5
L'élève a redoublé au moins une fois	-24,0	5,6	-18,2	4,6
L'élève a fait la maternelle	19,5	4,6	10,1	5,1
Âge de l'élève	-13,6	3,7	-12,2	3,6
Constante	**543,6**	**35,3**	**495,4**	**32,2**

* Significatif au seuil de 10% ; **Significatif au seuil de 5% ; ***Significatif au seuil de 1%

		Lecture		Mathématiques	
		Coefficient	Erreur type	Coefficient	Erreur type
Élèves	Niveau socioéconomique de la famille de l'élève	-0,1	0,6	0,1	0,6
	L'élève est une fille	-6,5	5,7	-15,3	4,5
	L'élève a redoublé au moins une fois	-23,0	5,4	-17,5	4,5
	L'élève a fait la maternelle	15,6	4,9	7,1	5,2
	Âge de l'élève	-12,6	3,6	-11,6	3,5
Classe	Absentéisme du maitre	9,6	3,8	7,1	3,6
	Nombre d'élève dans la classe	8,9	4,1	3,4	4,4
Écoles	Indice d'implication de la communauté	-0,2	0,5	-0,2	0,5
	L'école est dans une zone urbaine	210,2	102,6	258,6	100,9
	Niveau socioéconomique/milieu urbain	-0,7	1,3	-1,5	1,2
	Interaction infrastructures de l'école et zone urbaine	-0,3	1,0	0,9	0,9
	Interaction aménagement du territoire et zone urbaine	-2,4	1,7	-3,5	1,4
	L'école est privée	17,1	9,1	19,7	8,8
	Le directeur est une femme	2,7	9,5	-6,1	8,8
	Niveau socioéconomique moyen par école	12,4	12,0	11,1	10,5
	Indice d'infrastructures	25,9	11,6	17,4	9,2
	Indice d'aménagement du territoire	9,8	13,7	10,3	10,2
	Constante	**425,5**	**73,2**	**339,8**	**68,8**

Since its creation in 1960, the Conference of Ministers of Education of French-speaking countries (CONFEMEN) has worked for the promotion of education and vocational and technical training. It is a forum of shared values, expertises and active solidarity. Today it has forty four state and government members. The CONFEMEN Programme for the Analysis of Education Systems (PASEC) is a tool to support the steering of CONFEMEN member states' and governments' education systems, to improve education quality. Created in 1991, it aims to provide information on the evolution of education system performance, to contribute to the determination and monitoring of education policy.

Fourteen countries participated in the PASEC2019 international assessment: Bénin, Burkina-faso, Burundi, Cameroun, Chad , Congo, Côte d'Ivoire, Gabon, Guinée, Madagascar, Niger, Democratic Republic of Congo, Senegal and Togo. This assessment has enabled the measurement of pupil competency levels at the beginning and the end of primary school, in their language of instruction and mathematics. It has also analyzed the factors related to education system performance in the countries assessed, by the collection of contextual data from pupils, teachers and school headmasters, through questionnaires. This report presents the main findings of the assessment PASEC2019 in Cameroon.