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## [Women teachers matter for girls' educational success in Francophone Africa](#)

### [Blog](#)

Cross-national studies

Gender issues in education

***How can PASEC 2014 learning assessment data provide evidence for effective policy measures to reduce the gender gap in education?***

***The PASEC 2014 assessment offers some insights to understand how teachers' gender influences student learning performance in Western and Central Africa. Thorough standardized education assessment in the region provides empirical evidence for effective interventions on teacher recruitment policy to improve gender equality in education.***

Teaching is becoming a female-dominated job in most of the world. Women make up the majority of teachers in a primary school in both developed (84.5%) and developing countries (59.3%). However, this is less true in sub-Saharan Africa (44.9%) according to the [UNESCO Institute for Statistics](#) (UIS, 2017). Women teachers are still the minority in many countries in Western and Central Africa, regions that lag behind in the education of girls.

Gender imbalance in teachers may affect the gender gap in learning outcomes in the following three ways: First, a same-gender teacher can act as a role model, enhancing students' motivation to learn. Second, teachers play a pivotal role in creating gender equality or discrimination in a classroom environment. Thirdly, female teachers may provide safer learning environments for girls because of possible issues with sexual harassment and gender-based violence. Despite many empirical studies about how teacher-student gender interaction affects educational outcomes in advanced countries, research is rare in developing countries.

[Our study](#), recently published in the Journal of Development Studies provides new evidence on the role of female teachers on primary school achievement in Western and Central Africa. Using the [Programme for the Analysis of Education Systems \(PASEC\) 2014 survey](#), we analyze over 31,000 sixth-graders over 1,800 schools across 10 Francophone African countries: Benin, Burkina Faso, Burundi, Cameroon, Chad, Congo, Côte d'Ivoire, Niger, Senegal, and Togo. In 2015, only 36.9% of primary school teachers in these countries were female (UIS, 2017).

## **INSIGHTS GAINED FROM PASEC 2014**

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The PASEC 2014 includes a wide set of variables on student, teacher, and school background across 10 sub-Saharan African countries. This gives us a deeper understanding of the relationship between teacher gender, student gender, and educational outcomes.

- Using the objective measure of standardized test scores in reading and math provides good evidence of whether teacher and student gender interaction affects pupils' learning achievement. Gender-blind tests and objective grading by external evaluators were given with standard procedures across countries.
- Student and teacher surveys supplement objective measures of achievement and allow us to: i) analyze how teacher-student gender allocation affects students' perception of a particular subject; ii) compare teachers' perception of gender gaps with actual class performance to examine if they have gender-specific expectations (stereotypes) of pupils' math and reading ability.

## **MAIN FINDINGS**

We found that girls score higher than boys when taught by female teachers in both reading and math. The gender performance gap was more pronounced in math (Table 3 in appendix). We also found that girls like reading subject more compared to boys when taught by women (Table 4 in appendix). The reverse was true when teachers were men.

However, interestingly, same-gender teachers strongly boost learning achievement for girls, but not for boys. Under female teachers, girls' scores improved in both reading and math compared to their scores with male teachers. However, we found no evidence that boys' achievement changed in math, whether their teachers were male or female. Instead, boys performed slightly better in reading when taught by female teachers (Table 3 in appendix).

PASEC 2014 results further reveal that the traditional gender stereotype that 'boys are better at math while girls are better at reading' is widespread among both male and female teachers in Western and Central Africa. Interestingly, we found that teachers' perceptions of the relative average academic performance of girls versus boys in their classes were often opposite to their actual performance. In particular, both male and female teachers frequently overestimated boys' math performance (Table 5 in appendix).

## **FEMALE TEACHERS AS ROLE MODELS**

How can our main findings be interpreted in the context of widespread teacher stereotyping? Interestingly, while girls suffer from stereotyping in math by both male and female teachers, they do perform significantly better under female teachers. This suggests that role model effects might play a non-negligible role in explaining our findings.

## **POLICY IMPLICATIONS**

In many sub-Saharan African countries, particularly in Western and Central Africa, large gender gaps remain in access to the teaching profession. And girls lag behind boys in academic performance. Our study, based on concrete empirical evidence using the PASEC dataset, has strong implications for educational policy makers in Western and Central African countries if the goal is to enhance gender equality and the overall quality of primary education. We suggest that hiring more female primary school teachers in the regions can contribute to bridging educational gender gaps without hurting

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boys' performance.

What's more, our research is expected to spark public debate on the role of female teachers, which gives some insights into reducing gender gap. Given the limited budget constraints in education as well as the teacher shortage due to rapid primary schooling expansion in many African countries, increasing female teacher recruitment could be one of the most effective interventions to improve gender equality and overall education quality in primary education.

*This blog relies on the article in press "Teacher Gender, Student Gender, and Primary School Achievement: Evidence from Ten Francophone African Countries" in the Journal of Development Studies. To read the full article, please visit [here](#)*

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## **APPENDIX**

**Table 3.** Student-teacher gender allocation and reading and math performance

Dep. Var.	Reading test score			Math test score		
	Clustering	Clustering & Class-averages	Fixed effects (LSDV)	Clustering	Clustering & Class-averages	Fixed effects (LSDV)
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Student and teacher gender</i>						
i_female ( $\beta_1$ )	-0.0480*** (0.0131)	-0.0536*** (0.0117)	-0.0520*** (0.0106)	-0.113*** (0.0144)	-0.109*** (0.0128)	-0.108*** (0.0103)
t_female ( $\beta_2$ )	0.100*** (0.0370)	0.0670* (0.0371)		0.0236 (0.0428)	-0.00656 (0.0418)	
i_female*t_female ( $\beta_3$ )	0.122*** (0.0238)	0.121*** (0.0234)	0.110*** (0.0181)	0.266*** (0.0294)	0.262*** (0.0292)	0.251*** (0.0198)
<i>Student and family characteristics</i>	YES	YES	YES	YES	YES	YES
<i>Household housing and wealth</i>	YES	YES	YES	YES	YES	YES
<i>Teacher characteristics</i>	YES	YES	NO	YES	YES	NO
<i>Class characteristics</i>	YES	YES	NO	YES	YES	NO
<i>School characteristics</i>	YES	YES	NO	YES	YES	NO
<i>Country effects</i>	YES	YES	YES	YES	YES	YES
<i>Class-averages of individual student characteristics</i>	NO	YES	NO	NO	YES	NO
<i>School fixed effects</i>	NO	NO	YES	NO	NO	YES
Constant	-1.310*** (0.240)	-1.410*** (0.365)	0.637*** (0.0633)	-1.507*** (0.270)	-1.292*** (0.400)	0.854*** (0.0633)
Observations	17,801	17,801	17,801	17,789	17,789	17,789
Adj. R-squared	0.486	0.502	0.657	0.491	0.507	0.681

Notes: Robust standard errors in parentheses. Standard errors in models 1, 2, 4, and 5 are corrected for clustering on the school-level. \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$ . Full results in Table B1 in Supplementary Materials. Class-averages of individual student characteristics as in Table B3 (Supplementary Materials).

Student-teacher gender interaction and learning achievement in reading and math

**Table 4.** Teacher gender and student appreciation of reading and math

Dep. Variables	likeread			likemath		
	Clustering	Clustering & Class-averages	Fixed effects (LSDV)	Clustering	Clustering & Class-averages	Fixed effects (LSDV)
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Student and teacher gender</i>						
i_female ( $\hat{\beta}_1$ )	-0.0282** (0.0134)	-0.0306** (0.0129)	-0.0319*** (0.0113)	-0.0247* (0.0148)	-0.0198 (0.0146)	-0.0308** (0.0125)
t_female ( $\hat{\beta}_2$ )	-0.0220 (0.0292)	-0.0318 (0.0297)		-0.0357 (0.0340)	-0.0289 (0.0336)	
i_female*t_female ( $\hat{\beta}_3$ )	0.0551** (0.0235)	0.0581** (0.0235)	0.0550** (0.0213)	0.0391 (0.0261)	0.0393 (0.0261)	0.0658*** (0.0241)
( $\hat{\beta}_2 + \hat{\beta}_3$ )	0.0331	0.0263		0.0034	0.0104	
<i>Student and family characteristics</i>	YES	YES	YES	YES	YES	YES
<i>Household housing and wealth</i>	YES	YES	YES	YES	YES	YES
<i>Teacher characteristics</i>	YES	YES	NO	YES	YES	NO
<i>Class characteristics</i>	YES	YES	NO	YES	YES	NO
<i>School characteristics</i>	YES	YES	NO	YES	YES	NO
<i>Class-averages of individual student characteristics</i>	NO	YES	NO	NO	YES	NO
<i>Country effects</i>	YES	YES	YES	YES	YES	YES
<i>School FE</i>	NO	NO	YES	NO	NO	YES
Constant	2.212*** (0.178)	1.512*** (0.314)	2.208*** (0.0696)	2.376*** (0.197)	1.771*** (0.331)	2.313*** (0.0754)
Observations	18,070	17,714	20,690	18,025	17,687	20,611
Adj. R-squared	0.121	0.130	0.258	0.0796	0.0876	0.221

Notes: see Table 3.

Student-teacher gender interaction and students' appreciation in reading and math

**Table 2.** Teacher gender and perceived versus actual performance of boys versus girls

MATH					
<i>Teacher's perception math</i>					
<i>Male teacher</i>		Girls better	No difference	Boys better	Total
<i>Actual performance math</i>	Girls better	40	118	71	229
	No difference	75	267	218	560
	Boys better	58	219	267	544
	Total	173	604	556	1,333
<i>Teacher's perception math</i>					
<i>Female teacher</i>		Girls better	No difference	Boys better	Total
<i>Actual performance math</i>	Girls better	16	68	56	140
	No difference	37	69	53	159
	Boys better	9	38	40	87
	Total	62	175	149	386
READING					
<i>Teacher's perception reading</i>					
<i>Male teacher</i>		Girls better	No difference	Boys better	Total
<i>Actual performance reading</i>	Girls better	109	137	39	285
	No difference	164	321	139	624
	Boys better	66	184	184	434
	Total	339	642	362	1,343
<i>Teacher's perception reading</i>					
<i>Female teacher</i>		Girls better	No difference	Boys better	Total
<i>Actual performance reading</i>	Girls better	46	50	13	109
	No difference	53	112	35	200
	Boys better	16	38	20	74
	Total	115	200	68	383

*Notes:* For the classification of actual performance, 'Girls better' indicates that the class average of girls' test scores was at least 20 points above boys' class average. Equivalently, 'Boys better' indicates that male students' average score in class was at least 20 points above that of female students.

Teachers' gender-specific expectations (stereotypes) of pupils' math and reading ability

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