



DATA MUST SPEAK

## Girls' academic performance in basic education

Research on positive deviant schools to improve learning in Mali

### Key findings



Girls have more limited access to the education system than boys, but once in school, their promotion rates are comparable to those of boys in basic cycles 1 and 2.<sup>1</sup>



The promotion rate for girls is higher than for boys in basic cycles 1 and 2 when the teachers are women, but lower when the teachers are men. This difference is even more notable in rural areas and in basic cycle 2.



Girls' results in the *diplôme d'études fondamentales* [general education diploma, DEF] exams are very similar to boys' results.



In community schools and madrasas, girls have better promotion rates in basic cycle 1 when the school's head teacher is a woman.



The presence of latrines is associated with better promotion rates for girls and a reduction in their dropout rate in basic cycle 1, particularly in rural areas.

<sup>1</sup> Basic cycle 1 (from first grade to sixth grade); basic cycle 2 (from seventh grade to ninth grade).

## Context

Structural reforms have been implemented to decentralize Mali's education system with a view to ensuring equitable and inclusive access for students and improving internal and external efficiency. Changes have been made in various areas of education policy, including teacher training and management. These points for improvement are part of the Programme décennal de développement de l'éducation et de la formation professionnelle deuxième génération [Second-Generation Ten-Year Programme for the Development of Education and Vocational Training, or PRODEC 2] 2019–2028. Despite the progress made in implementing the programme, achieving its objectives remains a challenge. However, some schools perform better than others, even in disadvantaged areas. By identifying these schools, called positive deviant schools, and the good practices that make them successful, lessons can be learned to improve learning in Mali and help achieve the objectives of PRODEC 2.



## Research on positive deviant schools

Against this backdrop, the **Data Must Speak (DMS) research on positive deviant schools** explores local solutions for improving the quality of education in Mali. The first stage of the research involved conducting a **statistical analysis using Education Management Information System (EMIS) and DEF data** to identify factors influencing school performance and to quantify their effects. The analysis presented in this brief summarizes the main findings of this first stage of the research, in particular those concerning the academic performance of girls.<sup>2</sup>

## Research findings

**Girls have more limited access to the education system than boys, but once in school, their promotion rates are comparable to those of boys in basic cycles 1 and 2.** For example, the gender parity index for the gross admission rate in basic cycle 1 was 0.87 in 2018/19, but the promotion rates observed in the EMIS database were 72.9 per cent for boys and 73.5 per cent for girls in basic cycle 1, and 64.2 per cent for both girls and boys in basic cycle 2. However, these averages conceal major variation between school types and regions. In madrasas and community schools, it is more difficult for girls to progress in their education than it is for boys. These differences become more pronounced the further into their education they get (see Figure 1). In addition, in basic cycle 1, girls (12.1 per cent) are more likely to drop out of school than boys (11.5 per cent).

**The promotion rate for girls is lower than for boys in basic cycles 1 and 2 in schools without female teachers.** In basic cycle 1, the promotion rate for girls is 2.9 percentage points lower than for boys when the school has no female teachers. This difference is even more significant in basic cycle 2 (4.3 percentage points).<sup>3</sup>

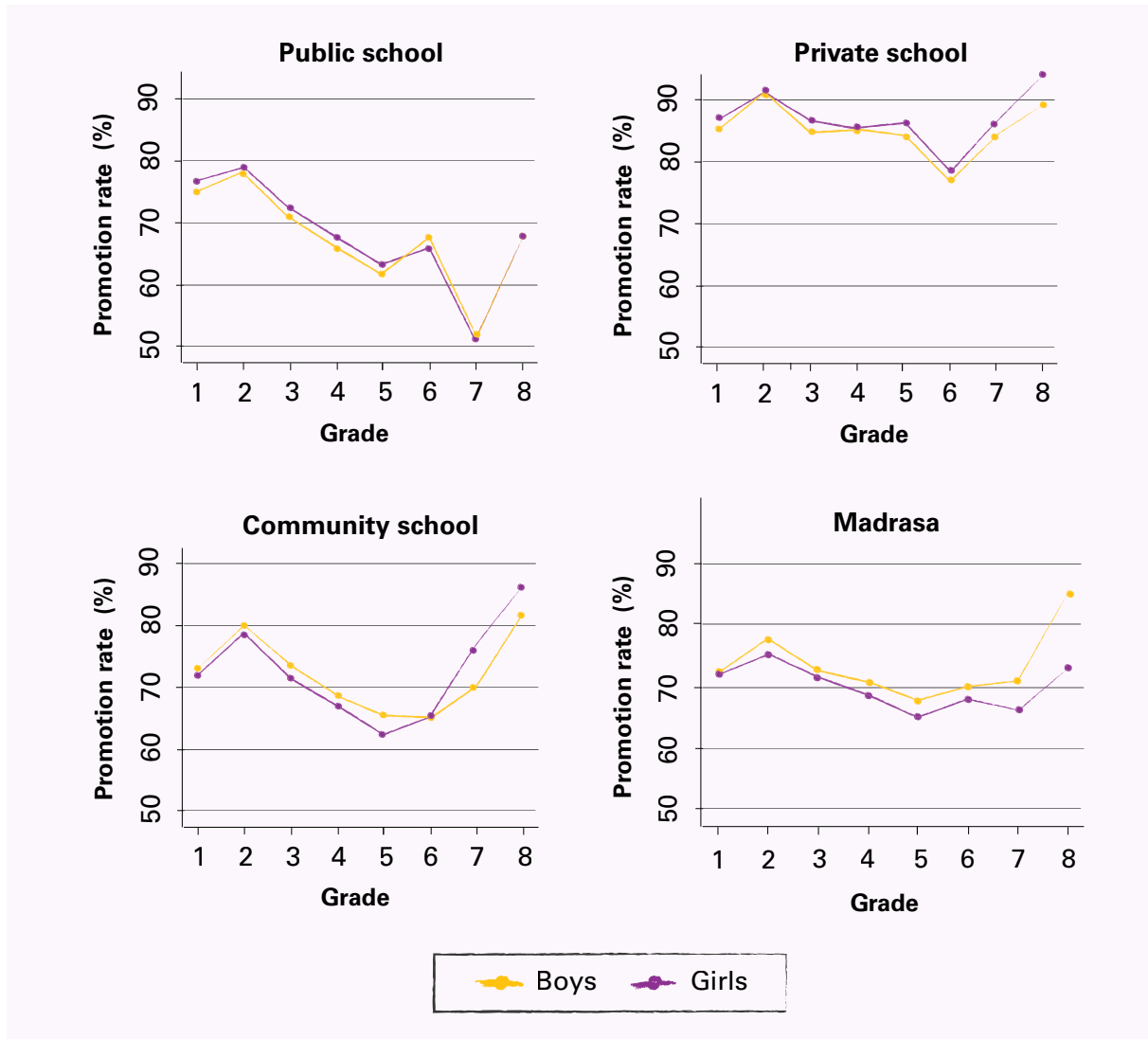
<sup>2</sup> The econometric models used include school fixed effects and numerous control variables to reduce the likelihood that the relationships identified are due to systematic differences between schools. However, further research is needed to verify that the effects observed are the result of causal links, rather than mere correlations.

<sup>3</sup> This finding, and those that follow, come from the econometric models.

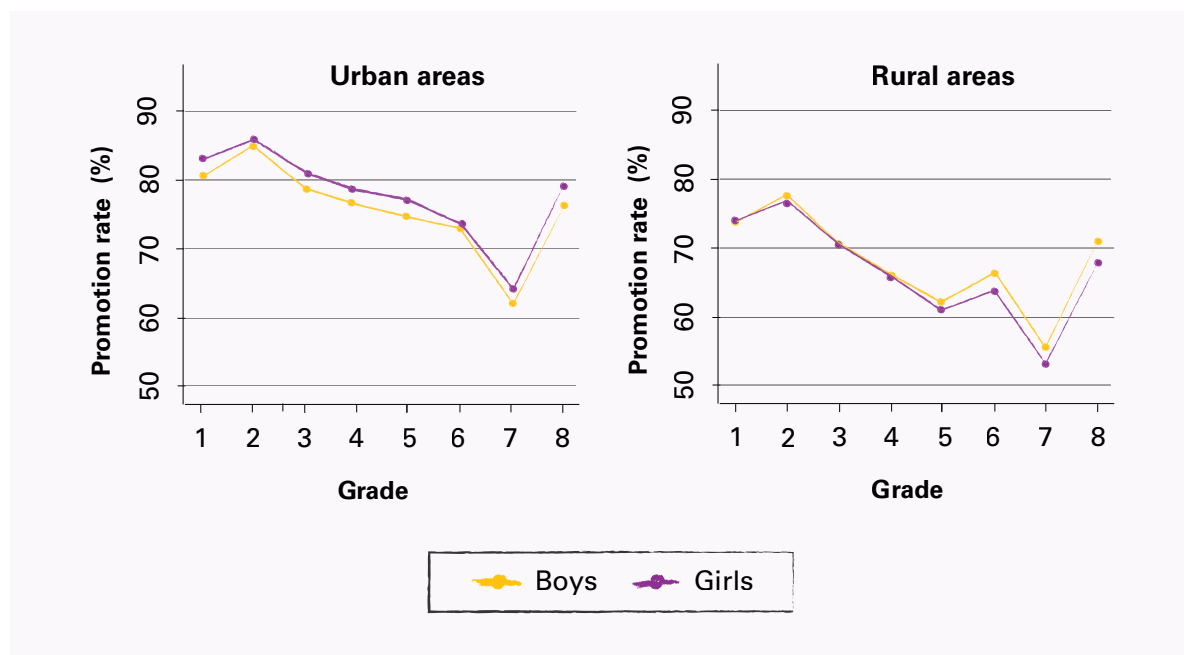
**Girls do better when they are taught by a woman, and the difference is notable.** In basic cycle 1, the promotion rate for girls is 5.3 percentage points higher than for boys when they are taught exclusively by women, and in basic cycle 2, it is 10.8 percentage points higher. Having more female teachers is also associated with a lower dropout rate for girls. For example, it is estimated that when all teachers in a school are women, the dropout rate for girls is 3.2 percentage points lower than for boys in basic cycle 1, and 8.4 percentage points lower in basic cycle 2.

This finding is even more pronounced when looking at rural areas alone. This association is particularly notable in madrasas in basic cycle 1, where the dropout rate for girls is 5.2 percentage points lower than for boys when all the teachers are women. However, women make up only a small proportion of teachers in basic cycle 1 (31 per cent) and an even smaller share in basic cycle 2 (15.2 per cent). This percentage is even lower in rural areas (25.3 per cent in basic cycle 1 and 11.2 per cent in basic cycle 2), where girls are more likely to fail the year.

**Figure 1: Promotion rates by gender in basic cycles 1 and 2**



Source: Descriptive statistics calculated by the authors based on EMIS data for 2017/18 and 2018/19.

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Source: Descriptive statistics calculated by the authors based on EMIS data for 2017/18 and 2018/19.

The data are too limited to provide insight into the reasons why girls perform better with female teachers. Female teachers acting as role models for girls, who identify with them and want to succeed, could go some way to explaining this phenomenon. They can also guide and advise girls (for example, on how to manage menstrual hygiene). Teachers' educational practices can also influence outcomes. More research is needed to better understand this issue. Stage 3 of the DMS research will explore these issues in order to understand the root causes of these gender differences in the Malian education system.

**The results that girls achieve in their DEF exams are very similar to boys' results.** Boys do better than girls in the DEF, but the difference is small: their pass rate is 0.04 percentage points higher than that of girls, and their average score out of 20 is only 0.3 points higher.

**In community schools and madrasas, girls have better promotion rates in basic cycle 1 when the school's head teacher is a woman.** Only 11.2 per cent of students in basic cycle 1 and 7 per cent in basic cycle 2 attend a school with a female head teacher. These figures are even lower in rural areas, at 6.8 per cent and 4.7 per cent respectively. While the promotion rate for boys does not vary according to the gender of the head teacher, the promotion rate for girls attending madrasas in basic cycle 1 is 3.7 percentage points higher when the head teacher is a woman. In public schools, on the other hand, the presence of a female head teacher is weakly associated with a reduction in the promotion rate for girls (0.5 percentage points less). Further research is needed to understand this dynamic.

**The presence of latrines is associated with better promotion rates for girls and a reduction in their dropout rate in basic cycle 1, particularly in rural areas.** Nationally, the promotion rate for girls in basic cycle 1 is 0.6 percentage points higher in schools with latrines. This association is stronger in rural schools located far from the pedagogical advice centre (+1.2 percentage points). The presence of latrines is associated with a reduction in the dropout rate for girls (-0.7 percentage points), but does not seem to have any effect on their repetition rate. It is likely that a better school environment helps keep girls in school. However, this association is not statistically significant in basic cycle 2.

## Suggested areas for further exploration



**Implement policies** to increase the number of female teachers and make them more present in rural areas.



**Ensure that all schools have access to quality latrines** to support girls' basic education.



**Analyse the mechanisms that might explain why girls are more successful with female head teachers and/or female teachers in madrasas and community schools.** This could involve examining the different behavioural factors (for example, those related to individuals, interactions with peers, or structural elements).

## About the Data Must Speak research on positive deviant schools

The DMS research on positive deviant schools in Mali was developed jointly by Mali's Ministry of Education, local research partners, the United Nations Children's Fund (UNICEF) Mali country office, and the UNICEF Innocenti – Global Office of Research and Foresight. This global research is being implemented in 14 countries in Africa, Asia and Latin America. It is co-funded by the Knowledge and Innovation Exchange (KIX) programme of the Global Partnership for Education/International Development Research Centre, the Hewlett Foundation, the Jacobs Foundation, the Norwegian Agency for Development Cooperation (NORAD), the Schools2030 programme (led by the Aga Khan Foundation) and UNICEF's Thematic Fund for Education.

## Series of policy briefs

This brief is the first in a series of documents produced as part of the DMS research in Mali. It focuses on gender issues in school performance and aims to inform dialogue on educational policy in Mali and other countries. To access the full research documents, including the report analysing the factors influencing school performance in Mali and the tables illustrating the results described above, please see [here](#).

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