



DATA MUST SPEAK

## School performance and teaching in basic education

Research on positive deviant schools to improve learning in Mali

### Key findings



Having a higher proportion of teachers trained under the *Stratégie alternative pour le recrutement du personnel enseignant* [Alternative Strategy for the Recruitment of Teaching Staff – SARPE]<sup>1</sup> is associated with a slight improvement in promotion rates.



A higher proportion of trainee teachers in a school is associated with better promotion rates in basic cycles 1 and 2.<sup>2</sup>



Larger class sizes are associated with lower promotion rates.



In basic cycle 1, multigrade classes and double-shift systems are associated with lower promotion rates.



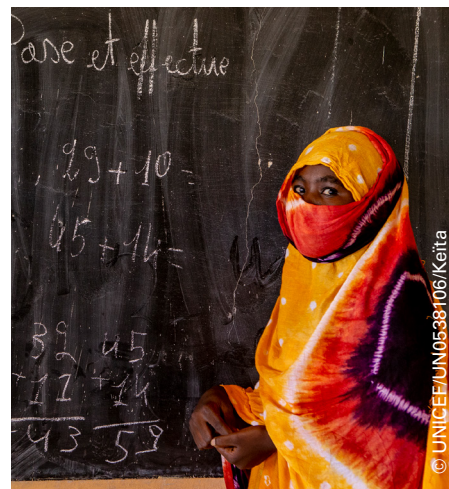
Curricular teaching, which integrates national languages into education, is associated with higher promotion rates in basic cycle 1.

<sup>1</sup> Under the SARPE, young graduates from various vocational schools who do not have the profile required for a teaching career receive training. They take part in short training courses and are then employed as teachers on contracts.

<sup>2</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 *diplôme d'études fondamentales* [general education diploma, 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 factors relating to teachers and teaching conditions.<sup>3</sup>

## Research findings

**In basic cycle 1, the presence of SARPE-trained teachers (16.7 per cent of teaching staff) is associated with a slight improvement in promotion rates:** the promotion rate is 0.5 percentage points higher for schools where all teachers are SARPE-trained than for schools where no teachers are SARPE-trained.<sup>4</sup> This positive association is mainly observed in public schools (0.8 percentage points) and private schools (1.4 percentage points), is not significant in community schools, and is actually negative in madrasas.

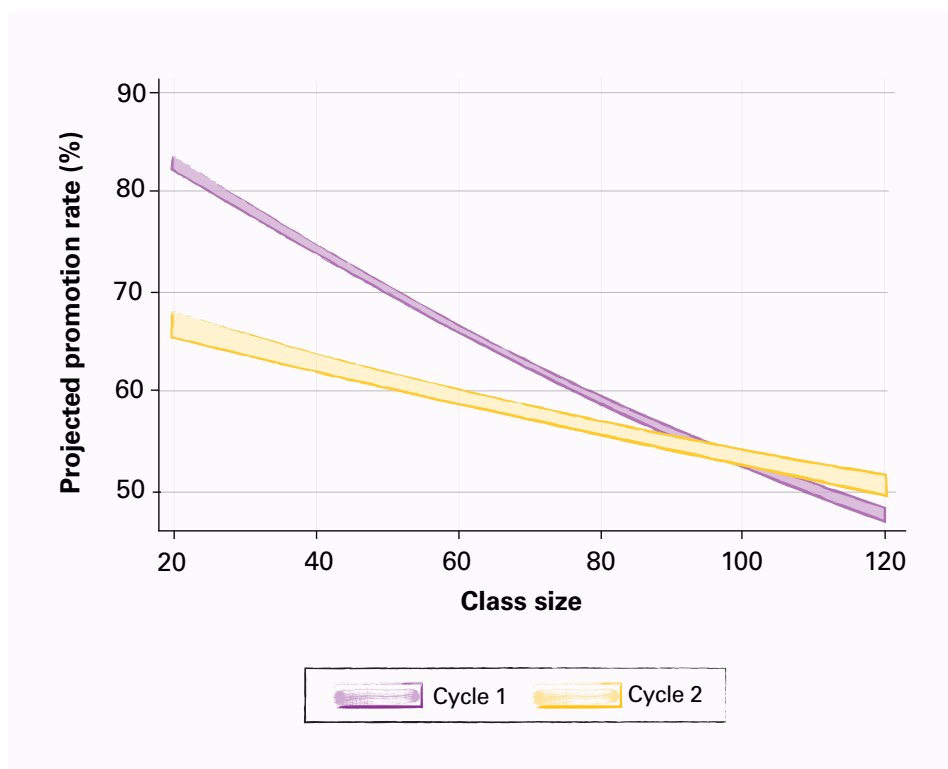
**A higher proportion of trainee teachers in a school is associated with better promotion rates in basic cycles 1 and 2.** All other things being equal, it is estimated that if one in every six teachers in a school is a trainee, the school's promotion rate is 0.9 percentage points higher in basic cycle 1 and 1.2 percentage points higher in basic cycle 2 than that of a school with no trainee teachers. The association is strong at both levels in rural areas (basic cycle 1: 0.6 percentage points; basic cycle 2: 1.7 percentage points), in remote rural areas (basic cycle 1: 1.6 percentage points; basic cycle 2: 1.3 percentage points) and in public schools (basic cycle 1: 1 percentage point; basic cycle 2: 1.2 percentage points). This strong association can also be seen in private education in basic cycle 1 (1.7 percentage points). This could be explained by the fact that trainee teachers are supervised by a teacher, a head teacher, a pedagogical adviser and the director of the pedagogical advice centre.

<sup>3</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>4</sup> This finding, and those that follow, come from the econometric models.

In addition, they receive a score for their performance at the end of the year (in the form of an internship grade), which can help motivate them. However, these assumptions need to be analysed in greater detail.

**Figure 1: Correlation between class size and promotion rate in basic cycles 1 and 2**



Source: Prepared by the authors using 2018/19 EMIS data.

**Larger class sizes are associated with lower promotion rates.** In basic cycle 1, it is estimated that the presence of 10 extra students per class is associated with a drop of 5 percentage points in the promotion rate (2 percentage points for basic cycle 2).

**In basic cycle 1, schools often have multigrade classes or double-shift systems, practices that are negatively correlated with promotion rates.** The use of multigrade classes, especially in rural areas in schools with few students, is associated with a 1.1 percentage point drop in the promotion rate. This association is most marked in rural areas (-1.7 percentage points) and in public schools (-1.4 percentage points). There is an even stronger negative correlation between the use of double-shift systems and promotion rates (-6.5 percentage points). These effects are greater in private schools than public schools (-11 percentage points and -6.7 percentage points, respectively), and more pronounced in rural areas than urban areas (-8 percentage points and -6.5 percentage points, respectively). Double-shift systems are mostly used in large urban schools, where a lack of classrooms or teachers has a negative effect on students' actual learning time.

**Curricular teaching, which integrates national languages into education, is associated with better performance in basic cycle 1.** All other things being equal, it is estimated that schools that adopt this approach have a promotion rate 1 percentage point higher than those that do not. However, the majority of schools (80 per cent) continue to use conventional teaching methods, and few teachers are trained in curricular teaching.

## Suggested areas for further exploration



**Expand the training** available at teacher training institutes and increase the number of places available.



**Continue the construction, upgrading, fitting out and maintenance of teaching infrastructure** for basic cycles 1 and 2 in order to reduce the use of double-shift systems and make class sizes smaller.



**In basic cycle 1, encourage the implementation of bilingual teaching (French and national languages) as provided for in PRODEC 2.**



**Stage 3 of the DMS research, which consists of a qualitative survey of positive deviant schools and their characteristics, should provide improved understanding of the reasons why trainee teachers perform better.**

## 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 second in a series of documents produced as part of the DMS research in Mali. It focuses on teachers and teaching conditions and aims to inform the 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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