



Mainland Tanzania

DATA MUST SPEAK

Schools Inspiring Change:
Research on the practices and behaviours
of positive deviant schools in Mainland Tanzania

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**Schools Inspiring Change:
Research on the practices and
behaviours of positive deviant schools
in Mainland Tanzania**

Ministry of Education, Science and Technology of Tanzania
The President's Office, Regional Administration and Local Government of Tanzania
UNICEF Tanzania
UNICEF Innocenti – Global Office of Research and Foresight



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Data Must Speak research coalition of donors:





Contents

Acknowledgements	5
List of acronyms and abbreviations	9
Executive Summary	10–13
Introduction	14–17
1.1 Country context	15
1.2 Data Must Speak research in Mainland Tanzania	15
1.3 Structure of the report	17
Methodology	18–23
2.1 Selection of positive deviant and comparison schools	19
2.2 Contexts chosen for analysis	19
2.3 Conceptual framework	20
2.4 Qualitative research methodology	21
2.5 Limitations	23
Results	24–35
3.1 School leadership and management	25
3.2 Community engagement	29
3.3 Pedagogical practices	33
3.4 School climate	34
3.5 Decentralized administration	35
Summary of results	36–38
Conclusion and recommendations	39–41
Appendices	42–48
Appendix 1: Selection of positive deviant and comparison school	42
Appendix 2: Conceptual framework for Stage 3 of the Data Must Speak research	48
References	49–51



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List of acronyms and abbreviations

DMS	Data Must Speak
EMIS	Education Management Information System
ETP	Education and Training Policy
MEWAKA	Mafunzo Edelevu ya Walimu Kazini (National Framework for Teachers' Continuous Professional Development)
MoEST	Ministry of Education, Science and Technology
NECTA	National Examinations Council of Tanzania
PO-RALG	President's Office, Regional Administration and Local Government
PSLE	Primary School Leaving Examination
PTP	Parent-Teacher Partnership
PTR	Pupil-Teacher Ratio
SC	School Committee
UNICEF	United Nations Children's Fund
UWaWa	Ushirikiano wa Wazazi na Walimu
WEO	Ward Education Officer



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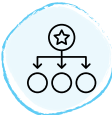
Schools Inspiring Change: Research on the practices and behaviours of positive deviant schools in Mainland Tanzania

Executive Summary

Improving the quality and relevance of education for pupils is a critical priority for the mainland of the United Republic of Tanzania (referred to as ‘Mainland Tanzania’). Despite progress in increasing net enrolment rates in primary education, learning outcomes in Mainland Tanzania remain low. Regional disparities within the country persist in learning outcomes, promotion rates and resource availability. The five-year Education Sector Development Plan (2021/22–2025/26) underscores the Government’s focus on enhancing learning outcomes by addressing gaps in education quality, accessibility, participation and equity. In this context, the Ministry of Education, Science and Technology (MoEST) and the President’s Office, Regional Administration and Local Government (PO-RALG) are leveraging an innovative research partnership with UNICEF to identify and scale local solutions that are already improving learning in Mainland Tanzania’s government primary schools.

The Data Must Speak (DMS) positive deviance research aims to explore solutions for improving educational outcomes. It strives to identify behaviours and practices that allow some schools, referred to as 'positive deviant' schools, to outperform others despite operating in similar contexts and with similar levels of resources, and to identify levers to scale these practices. This report presents the local behaviours and practices found in positive deviant schools in Mainland Tanzania, with the aim of helping to inform future education policy. This research has been co-created and co-implemented with MoEST, PO-RALG and national education stakeholders since 2022.

Key findings on the behaviours and practices of positive deviant schools:



School leadership and management

- Head teachers enhance teachers' pedagogical skills and performance through training and capacity-building opportunities, both in and out of school.
- Head teachers improve the quality of teaching and learning through stronger performance monitoring and pedagogical support.
- Head teachers strengthen teachers' motivation through positive reinforcement and incentives.
- Head teachers ensure that their schools have strengthened measures to curb pupil absenteeism.



Community engagement

- Schools strengthen parental engagement in their pupils' learning.
- Parent committees more actively facilitate support for addressing school and pupil challenges.
- Schools engage the broader community to support school activities and foster a sense of ownership over the school's success.



Pedagogical practices

- Teachers more frequently monitor pupils' learning and organize additional support, particularly for pupils who are struggling.



School climate

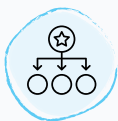
- Schools create more opportunities for pupils' participation in decision-making and sharing of feedback.



Decentralized administration

- Ward Education Officer prioritizes improving teaching and learning when providing supports to schools.

Policy recommendations:



School leadership and management

- Support head teachers and Ward Education Officers to strengthen their instructional leadership, providing the necessary guidance and training for head teachers to reorient their role towards improving teachers' pedagogical skills and performance.



Pedagogical practices

- Further explore the role of incentives in supporting teachers' motivation and consider developing teacher incentive programmes.



School climate

- Strengthen the mandate and capacities of Parent-Teacher Partnerships to raise awareness among parents of the importance of their role in supporting pupils' learning.
- Support school staff, including head teachers and teachers, to develop systematic communication approaches with parents that are more frequent, personalized and focused on pupils' learning.
- Continue to expand access to initial and continuous professional development opportunities that support teachers to implement school-based assessments and use learning data to inform their classroom instruction.



Community engagement

- Continue expanding access to initial and continuous professional development opportunities that support teachers to implement school-based assessments and use learning data to inform their classroom instruction.
- Encourage or standardize out-of-classroom support and remedial learning for pupils who are struggling, including by incentivizing teachers and community stakeholders to engage as partners to deliver this support.



Decentralized administration

- Increase sustainable, equitable and adequate financing for education, with a focus on ensuring that government funding at the school level is sufficient for infrastructure needs, workforce management, and activities focused on teaching and learning, including professional development.

Stage 4 of the DMS research will deepen these recommendations by identifying levers for scaling practices and behaviours of positive deviant schools to more schools in Mainland Tanzania together with MoEST and PO-RALG.



1. Introduction

Introduction



1.1 Country context

The Ministry of Education, Science and Technology (MoEST) and the President's Office, Regional Administration and Local Government (PO-RALG) are committed to improving the quality and relevance of education for pupils on the mainland of the United Republic of Tanzania (referred to as 'Mainland Tanzania') (United Republic of Tanzania, MoEST, 2022a). Mainland Tanzania has made progress in expanding access to education through the Fee-Free Basic Education Policy introduced in 2016, which increased net primary education enrolment rates to 95.3 per cent in 2020 (United Republic of Tanzania, MoEST, 2021). Despite this progress, many pupils enrolled in school are still not acquiring basic foundational skills. Results from the 2021 Standard Two National Assessment showed that less than half (41.3 per cent) of pupils met the benchmarks for reading comprehension in Kiswahili and less than 20 per cent met the benchmarks for addition and subtraction mathematics tasks (United Republic of Tanzania, National Examinations Council of Tanzania [NECTA], 2022). At the end of the primary education cycle, these learning outcomes remained low, with Standard 7 pupils scoring less than half of mathematics questions correctly and 66 per cent of Kiswahili questions correctly on the Primary School Leaving Examination (PSLE)¹ (UNICEF Innocenti et al., 2024). Average PSLE performance varies greatly by region and school type (government versus private), with some gender disparities emerging in science and mathematics subject performance, where girls' performance tends to be lower than boys' (UNICEF Innocenti et al., 2024).

The Government of the United Republic of Tanzania has initiated several policy reforms to improve education access and quality. In addition to Fee-Free Basic Education, the Government also introduced the Big Results Now in Education initiative in 2013, which prioritized the 3Rs (Reading, wRiting, and aRithmetic) through a national curriculum reform and teacher training focused on foundational skills. More recently, MoEST introduced the 2023 revision of the 2014 Education and Training Policy (ETP), which included changes to the length and structure of the education system (including revising primary education from seven years to six) and making 10 years of education compulsory (United Republic of Tanzania, MoEST, 2023).

The Data Must Speak (DMS) research in Mainland Tanzania aims to support the Government's existing efforts to improve learning outcomes for pupils by identifying local solutions used by education actors to address ongoing challenges.

1.2 Data Must Speak research in Mainland Tanzania



The DMS positive deviance research in Mainland Tanzania began in 2022, through close collaboration between MoEST, PO-RALG, UNICEF Tanzania and UNICEF Innocenti – Global Office of Research and Foresight. The DMS research has helped to support MoEST's goal of enhancing data usage and access in the country to support evidence-based policymaking through harmonizing and merging existing Education Management Information System (EMIS) data and PSLE data.

¹ Note that the PSLE is administered at the end of the primary education cycle, which, prior to the 2023 revision to the 2014 Education and Training Policy (ETP), was Standard 7. The revised ETP now has primary education concluding in Standard 6.

The DMS research also aims to identify and scale local solutions already working in Tanzanian schools by leveraging this existing data to identify positive deviant schools, or schools outperforming others despite operating in similar contexts with equivalent resources.

The DMS research consists of four country-level stages (see **Figure 1**). In Stage 1, quantitative analysis of existing EMIS and PSLE data identified contextual factors and school resources correlated

with school performance, including teacher characteristics, such as level of education and contract status, class sizes, availability of teaching and learning materials, and infrastructure (UNICEF Innocenti et al., 2024). Stage 2 of the DMS research identified a sample of positive deviant schools which outperform peer schools in both learning outcomes and promotion rates. In Stage 3, qualitative data was collected from these schools and comparison schools to better understand the behaviours and practices that may drive differences in performance.

Figure 1: DMS research stages



This report presents the practices and behaviours identified and provides the foundation for Stage 4, which will seek to identify levers to scale these practices and behaviours to more schools in Mainland Tanzania.

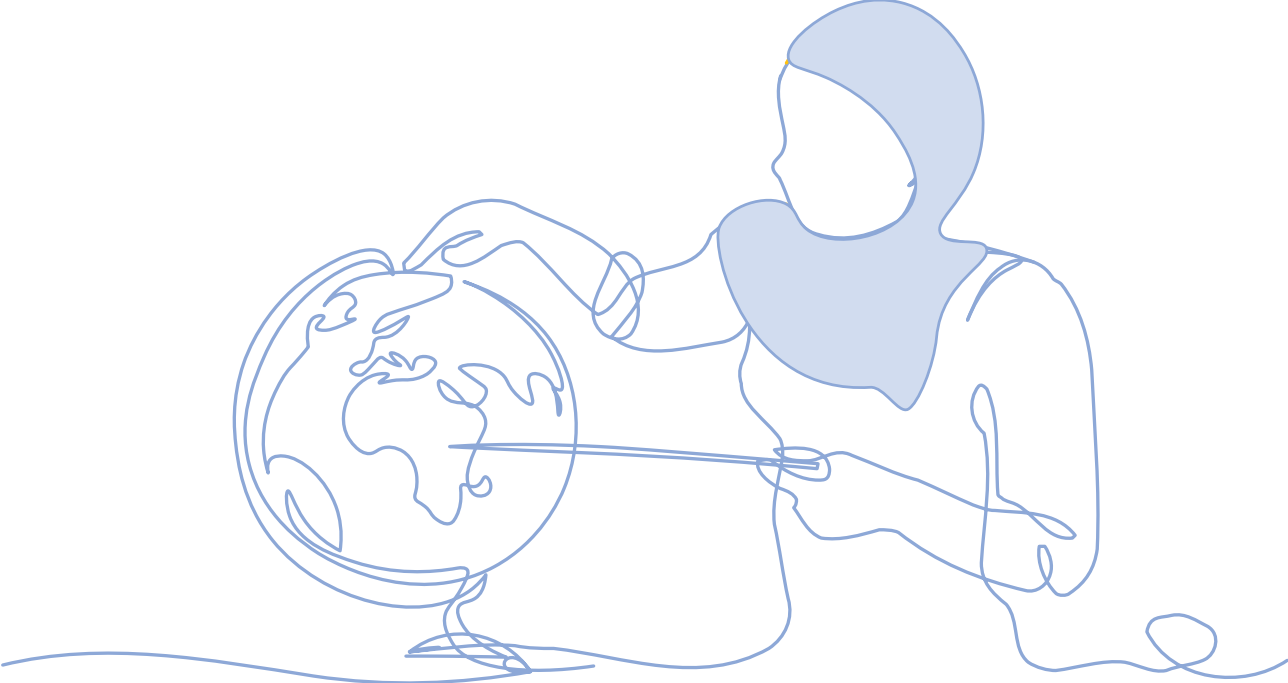
The DMS research is co-created and co-implemented in partnership with the Tanzanian MoEST and PO-RALG officials, as well as national education stakeholders, including national academics, civil society organizations, non-governmental organizations, development partners, the teachers' union, and school-based actors, including head teachers, teachers and pupils. Extensive consultations with these stakeholders took place at all stages of the research, including the development of

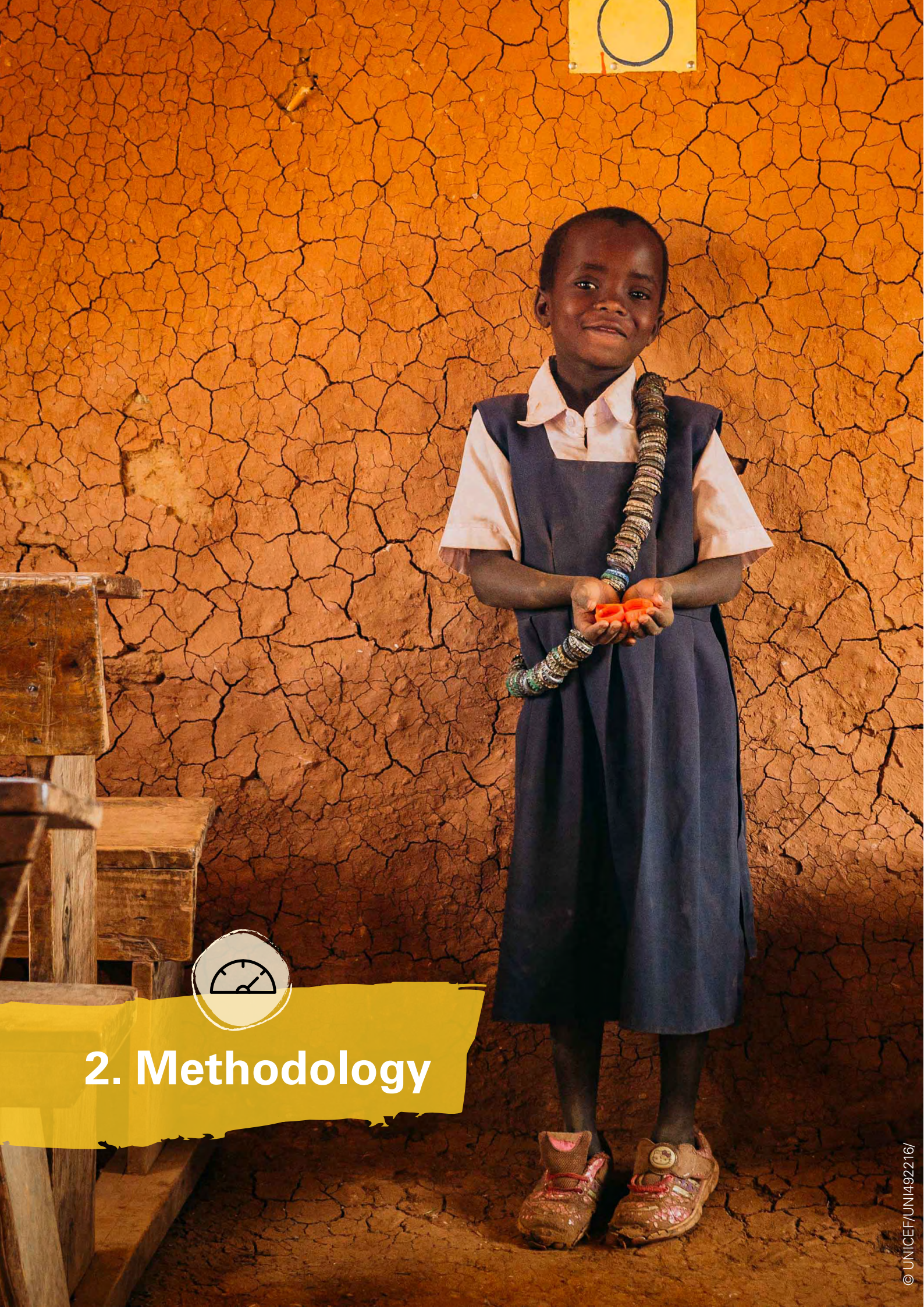
research tools, sampling and data-collection strategy, as well as the validation of results and formulation of relevant policy recommendations.

1.3 Structure of the report




The report is divided into four main sections. Section 1 introduces the research objectives and country context. Section 2 presents the methodologies that guided data collection. Section 3 presents the main findings, illustrating the differences between positive deviant schools and comparison schools. Finally, Section 4 concludes by discussing these findings and presenting policy recommendations.





2. Methodology

Methodology



2.1 Selection of positive deviant and comparison schools

The DMS research applies a positive deviance methodology in the education sector. Stage 1 of the research demonstrated that academic performance in Mainland Tanzania varied between schools, even after considering the influence of contextual factors, resources and availability of school inputs (UNICEF Innocenti et al., 2024). The selection of positive deviant schools is based on the results of this analysis:

- Twelve government primary schools with higher performance than predicted by statistical models in both promotion rates² and average PSLE scores (see **Table 4** in **Appendix 1**) were selected.
- Twelve comparison schools with similar characteristics, such as total enrolment, pupil-teacher ratio (PTR), percentage of qualified teachers and textbook-pupil ratio, and located in the same region as their positive deviant school match, were selected. Unlike the positive deviant schools, these schools' performance is within the average expected for schools in their context and with their characteristics.

A more detailed description of the methodology is included in **Appendix 1**.



2.2 Contexts chosen for analysis

Practices and behaviours of positive deviant schools may depend on the context in which the school operates.

For example, the factors that make a school successful in a rural area in the Katavi region will not necessarily be the same as for a school in the capital of Dar es Salaam. To ensure that findings could be more broadly generalized to the education system in Mainland Tanzania, three contexts in which to select schools were defined through close consultation with MoEST and PO-RALG, informed by two development indicators (the Human Development Index and regional gross domestic product) and contextual factors. Schools were evenly spread, with eight schools in each of the three contexts. The **bolded** regions indicate where schools in the final sample were located:

- **Context A:** Most developed regions, including Arusha, Dar es Salaam, **Iringa**, Kilimanjaro, Njombe, **Ruvuma** and **Tanga**.
- **Context B:** Medium developed regions, including Geita, **Lindi**, Manyara, Mara, **Mbeya**, Morogoro, Mwanza and **Pwani**.
- **Context C:** Less developed regions, including Dodoma, Kagera, Katavi, **Kigoma**, **Mtwara**, Rukwa, **Shinyanga**, Simiyu, **Singida** and Tabora.

As of 2022, 16 per cent of government schools were urban and 84 per cent were rural, with regions predominantly rural except for Dar es Salaam (UNICEF Innocenti et al., 2024). Schools selected for the sample were weighted accordingly, with rural schools comprising 75 per cent (18 schools) of the sample and urban schools comprising the remaining 25 per cent (six schools).

² While national policy in Tanzania indicates that schools should automatically promote pupils from one grade to the next, average school promotion rates are less than 100 per cent and have been declining since 2019, reaching just 87.6 per cent nationally in 2021 (UNICEF Innocenti et al., 2024). This suggests that it is a relevant measure of performance as it represents the ability of schools to keep children enrolled and progressing within the education system.

Figure 2: DMS contexts across Mainland Tanzania regions



Context A: Most developed regions, including Arusha, Dar es Salaam, **Iringa**, Kilimanjaro, Njombe, **Ruvuma** and **Tanga**.

Context B: Medium developed regions, including Geita, **Lindi**, Manyara, Mara, **Mbeya**, Morogoro, Mwanza and **Pwani**.

Context C: Less developed regions, including Dodoma, Kagera, Katavi, **Kigoma**, **Mtwara**, Rukwa, **Shinyanga**, Simiyu, **Singida** and Tabora.

The **bolded regions** indicate where schools in the final sample were located.



2.3 Conceptual framework

In the DMS research, identification of behaviours and practices related to good school performance is based on a conceptual framework with five thematic areas, recognized as factors playing a key role in school development and performance

improvement (Mzabalazo Advisory Services, 2016; Twaweza East Africa, 2019). **Table 1** presents the different elements explored under each domain through qualitative questionnaires (further information is provided in **Appendix 2**).

Table 1: Conceptual framework for Stage 3 of the DMS research

Thematic area	Elements explored by the domain
School leadership and management	<ul style="list-style-type: none"> Existing school and teacher management practices Head teacher's strategies to facilitate school administration and support equity, teaching and learning Resource management and utilization procedures
Pedagogical practices	<ul style="list-style-type: none"> Pedagogical practices applied in the classroom How student-teacher interactions, as well as teaching and assessment methods, contribute to learning objectives Involvement of actors such as classmates and head teachers in supporting students, especially those falling behind

Thematic area	Elements explored by the domain
School climate	<ul style="list-style-type: none"> ▪ Dynamics and relationships between different actors (head teacher, teachers, students, other staff, families, etc.) ▪ Actors' perception of their well-being at school and of the mechanisms (if any) of general collaboration between school actors ▪ Issues such as gender equality or the presence of violence and bullying in schools
Community involvement	<ul style="list-style-type: none"> ▪ Involvement of community actors, including the families and committees they form, in school life and other matters pertinent to learning ▪ Extent to which parental and familial behaviours and practices affect student outcomes ▪ Roles played by associations or community committees in school management and their contribution to school performance
Decentralized administration	<ul style="list-style-type: none"> ▪ Behaviours and practices adopted by leaders of the education system at the decentralized level (inspectorate, town hall, etc.) and how they may (positively or negatively) affect school performance ▪ Mechanisms and strategies contributing to stakeholder learning and development (such as skills, knowledge and well-being of teachers, students and head teachers)

2.4 Qualitative research methodology

Stage 3 of the DMS research in Mainland Tanzania leveraged qualitative research methods. The qualitative data-collection tools were co-created with MoEST, PO-RALG and relevant education stakeholders in March 2023. The data-collection tools were piloted in schools not included in the final sample. The tools were subsequently revised as needed prior to data collection, which took place from July to August 2023. Data-collection instruments and ethical protocols were reviewed and approved by an international review board, and these protocols were followed throughout the fieldwork and data analysis. These ethical protocols are in line with UNICEF's principles of respecting the dignity of participants, abiding by just and equitable treatment, preventing potential risk of harm, and ensuring informed consent from and confidentiality to participants, as well as safeguarding child participants. The DMS research was also registered with the Tanzania Commission for Science and Technology in line with national protocols.

The final sample consisted of 24 government primary schools, with 12 positive deviant schools and 12 comparison schools. Each positive deviant school was associated with a comparison school similar in characteristics and in the same region.

The qualitative data was coded using NVivo analysis software. Deductive and inductive coding techniques were used to analyse the data. As a first step, five first-level codes, corresponding to the five analytical domains described above, were created. Then, through an inductive approach, sublevel codes that emerged from the data were added. Although data were coded by school, the researcher did not know which schools had been identified as positive deviants. Afterwards, schools were analysed with knowledge of their status as comparison or positive deviant schools revealed to ensure that contextual elements were taken into account. For each school, a summary document providing information on the school's challenges, practices and general conditions was prepared. A school pair analysis was then undertaken to determine the differences distinguishing positive deviant schools from their comparison schools.

Table 2: Overview of the qualitative data-collection activities

Qualitative data collection (n = 24 schools)				
Actor	Sample size per school	Respondents reached	Target classes/ individual ³	Activity
Head teacher	1	24	N/A	Semi-structured interview
Teachers	3	72	Standards 2, 4 and 7	Semi-structured interviews
Parent-Teacher Partnership (PTP)	1 discussion with 3-4 PTP members	66	N/A	Focus group discussions
Families	1 discussion with 6-8 caregivers	124	N/A	Focus group discussions
Pupils	2 discussions with 6-8 pupils	288	Standards 5 and 7	Focus group discussions
Ward Education Officer (WEO)	1	23 ⁴	WEO	Semi-structured interview



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³ In the rare case that individuals representing target classes were not available to participate in research activities, qualitative activities were conducted with individuals from the nearest available grades.

⁴ One pair of schools had the same WEO. For two WEOs, interviews were conducted by phone rather than in person while they were on official travel.



2.5 Limitations

This stage of the DMS research has limitations that should be considered. Positive deviant and comparison schools were selected using two indicators of school performance, one being Standard 7 PSLE results. There may be negative incentives for schools to achieve higher results on the PSLE, such as tailoring teaching to the exam or the school targeting only higher performing pupils for enrolment (e.g. cream skimming), the latter being somewhat accounted for by using promotion rates as a second indicator for school selection. While PSLE results can be one possible indicator of a school's education quality, it does not cover the broader set of goals that MoEST sets for its education system, such as pupil health and well-being, socioemotional competencies and access to future professional opportunities. Another limitation is that the last year of administrative and learning data used to select positive deviant schools was 2021, while primary data collection took place in 2023. There is a possibility that school performance for either indicator may have changed during this time, that school-level actors such as head teachers and teachers may have changed, or that practices and behaviours of school-level actors may have evolved or changed.

The qualitative research methodology relies on self-reporting of individual experiences through interviews and focus group discussions. Even with the triangulation of responses across various actors, data collected from such tools can be difficult to verify. Some responses received may have been influenced by social desirability bias,⁵ or some participants may have

omitted information if they felt it could have negative consequences for them. Although data collectors have given the highest priority to meeting UNICEF's ethical standards by seeking consent and assuring each participant of the confidentiality of their responses, such concerns may still have influenced responses. To avoid bias and potential bias stemming from the DMS research team, double-blind data collection and analysis was conducted, meaning that researchers, enumerators and participants did not know whether the school was a positive deviant or comparison school.

It is also possible that the performance of positive deviant schools could result not only from positive practices, but also from those that remain unnoticed or should not be encouraged. While being aware that such factors could play a role in the performance of some schools, the DMS research only promotes positive practices validated in partnership with MoEST and PO-RALG.

Lastly, qualitative data activities were largely conducted in Kiswahili. The data-collection firm hired to undertake the data collection then transcribed and translated the data into English for analysis. Quality assurance mechanisms were established to check the accuracy of both transcription and translation for a proportion of the data. However, it is possible that potential information and nuance in the dialogue may not have been fully reflected in all transcripts.

Despite these limitations, findings remain relevant for policymakers and can provide insights into positive educational practices, while also identifying directions for future research.

⁵ Social desirability bias is a common challenge for qualitative researchers (Bergen and Labonté, 2020). It manifests itself as the adaptation, conscious or unconscious, of an individual's responses to what they believe is desired by the investigator or society in general.



3. Results



Results

The analysis reveals that the practices of positive deviant schools differ from comparison schools primarily in the areas of school leadership and management, community engagement and pedagogical practices. Although fewer differences were found in the areas of school climate and decentralized administration, interesting insights unique to positive deviant schools are still presented.



3.1 School leadership and management

School leadership and management was a key contributor to the performance of positive deviant schools. Specifically, head teachers at these schools:

- Enhance teachers' pedagogical skills and performance through training and capacity-building opportunities, both in and out of school.
- More frequently and effectively monitor teachers' performance and provide pedagogical support.
- Foster teachers' motivation through positive reinforcement and incentives.
- Adopt more measures to curb pupil absenteeism.

3.1.1 Enhancing teachers' pedagogical skills and performance through training and capacity-building opportunities, both in and out of school

Head teachers in positive deviant schools are more likely to develop initiatives and offer opportunities for in-service training at the school to improve teachers' pedagogical skills and performance.

In 2020, Mainland Tanzania introduced the National Framework for Teachers'

Continuous Professional Development, referred to in Kiswahili as "Mafunzo Endelevu ya Walimu Kazini (MEWAKA)", to initiate school-based professional development for primary school teachers (The World Bank, 2023). In most positive deviant and some comparison schools, weekly meetings were hosted to support teachers to discuss their challenges, exchange ideas and support each other with regard to difficult topics.

However, in more than half of the positive deviant schools, teachers had additional opportunities to attend in-service training and the head teacher put additional mechanisms in place for teacher support. For example, one positive deviant school emphasized teachers observing the classes of other teachers to foster learning exchange. In another positive deviant school, the head teacher specifically took initiative to ensure that the effects of training trickled down to all teachers in the school, even if only one or a few teachers were able to participate directly. Teachers at this school who participated in the training saw it as their responsibility to ensure that what they had learned was shared with their colleagues, often in the weekly meeting through a presentation or sharing of materials.

One head teacher at a positive deviant school reported that training was crucial to improve teachers' motivation:



“ Initially, I could say that motivation was not very high due to various factors, including pupil behaviour. However, after [teachers] received training on child development and nurturing, things changed. The training emphasized that we shouldn't use corporal punishment but instead should monitor the children, identify their problems and provide assistance. After this training, I observed that my teachers became very motivated.

Nowadays, when a teacher sees a child with an issue, they take the initiative to bring it to our attention. They even help control truancy, which was previously caused by issues at home. So, these training sessions have motivated them to take better care of the children. ”

– Head teacher at a positive deviant school

Additionally, some positive deviant schools were more likely than comparison schools to indicate that teachers engaged in training opportunities at the district level, usually through the Teacher Resource Centre, and to facilitate teachers' attendance at these trainings. These positive deviant schools also supported teachers interested in pursuing further education by helping them to find opportunities.

3.1.2 Improving the quality of teaching and learning through stronger performance monitoring and pedagogical support

Head teachers at positive deviant schools more frequently and effectively manage teachers' quality of teaching through stronger performance monitoring. In one positive deviant school, this performance monitoring took the form of tracking teacher attendance more closely, checking notebooks of pupils to monitor lessons and observing teachers during instruction. In another school, weekly meetings between the head teacher and teachers to review classroom activities placed a strong focus on teachers' use of participatory methods. Positive deviant schools were more likely than comparison schools to indicate that the Academic Committee, often comprised of the head teacher and higher performing teachers, was more actively involved in the supervision of teaching quality, suggesting that distributing instructional leadership responsibilities may also be valuable.

Teachers were knowledgeable about their roles and responsibilities as part of this committee, whereas in comparison schools many respondents were not aware of the presence of committees or how they operated.

In addition to performance monitoring, head teachers in some positive deviant schools demonstrated a stronger focus on providing pedagogical support to teachers.

This often took the form of more frequent meetings between the head teacher and teachers on pedagogical and administrative matters, usually on a weekly basis rather than an ad hoc basis, to identify solutions to challenges that teachers are facing and discuss new approaches for teaching. In some positive deviant schools, the head teachers also support teachers to establish committees to monitor teaching and learning performance in specific subjects.

In another positive deviant school, the head teacher was emphasizing collaboration with other schools to address difficult topics for teachers, suggesting a solution-oriented approach to pedagogical challenges.

3.1.3 Fostering teachers' motivation through positive reinforcement and incentives

Head teachers in positive deviant schools were more supportive of their school staff, adopting practices to motivate and reward teachers. These practices were identified in under half of the positive deviant schools. Head teachers in these positive deviant schools commonly provided financial incentives to motivate teachers, often using a combination of government or school funds, financial contributions of parents and the community, and personal funds. In two schools, the head teacher provided financial rewards to teachers who provided extra sessions for pupils after school hours. In another school, the head teacher worked with teachers to set specific performance goals and financially rewarded teachers who achieved these goals.

In positive deviant schools where practices to incentivize and reward teachers were identified, additional teaching sessions were organized after school for pupils. This could suggest the effectiveness of incentivizing teachers to provide additional targeted support for pupils. Other evidence from Mainland Tanzania has demonstrated that rewarding teachers through cash incentives has been effective in improving learning outcomes (Mbiti, Romero and Shipper, 2023).

However, it may be important to ensure that financial incentives are supported through government or school funds, rather than personal funds of head teachers. Inadequate funding was cited as a challenge in half of schools in the research, but positive deviant schools were more likely than comparison schools to mobilize financial resources outside government funding through income-generating projects at the school or solicitation of donations.

“ I receive support in various ways. When we bring our plans, as Standard 7 teachers, [the head teacher] allows that creativity. When challenges arise in the community we live in, he is approachable and listens to individuals one-on-one. He aims to uplift teachers rather than suppress them. ”

– Standard 7 teacher at a positive deviant school



Finally, one head teacher regularly organized lunches for teachers at the school to celebrate positive performance and to maintain a positive school climate. Other forms of encouragement and motivation, such as delegation of responsibilities and letters of appreciation to well performing teachers by the head teacher, were also reported in certain positive deviant schools.

Since almost all schools reported a shortage of teachers as a critical challenge, better monitoring, pedagogical support and mechanisms for improving motivation may be critical for teachers amid increased workloads. These examples of incentives also provide relevant data to support one of MoEST’s goals to improve teachers’ motivation and accountability through measures such as establishing a teacher incentivization system (United Republic of Tanzania, MoEST, 2022b).

3.1.4 Adopting more measures to curb pupil absenteeism


Positive deviant schools were less likely than their comparison school peers

to report that pupil absenteeism and dropout were key challenges. In under half of positive deviant schools, mostly in the less developed regions (Context C), head teachers actively worked to ensure that there were adequate resources to support the school feeding programme, which they believed was an important mechanism to keep pupils in school and to support learning. Most of these schools relied on their own farms to sustain and contribute to the feeding programme, but in one school, the head teacher worked with parents and community members to source additional, voluntary contributions where existing resources were not enough. While not as common, some head teachers at positive deviant schools adopted other measures to curb absenteeism, including conducting home visits to meet with parents and discuss key barriers for pupil attendance and possible solutions, and coordinating with other actors, including the Ward Education Officer (WEO), School Committee (SC) and Parent-Teacher Partnership (PTP) to monitor and reduce absenteeism.





3.2 Community engagement



Positive deviant schools were more likely to leverage parental and community engagement to support the school and the pupils they serve. Specifically, the positive practices of these schools include:

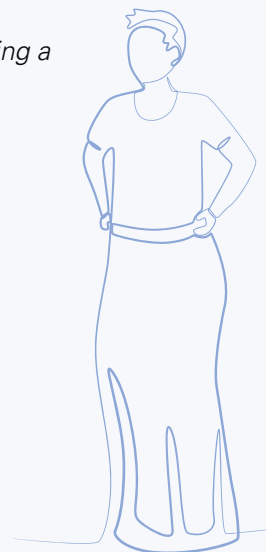
- Frequent and tailored communication with parents on their pupils' learning.
- Stronger parental involvement in school activities, decision-making and pupils' learning.
- Parent committees more actively facilitate support for addressing school and pupil challenges.
- Engaging the broader community to foster a sense of ownership over the school's success.

3.2.1 Frequent and tailored communication with parents on their pupils' learning

Positive deviant schools were more frequently engaged in positive and tailored communication with parents on pupils' learning. The exact communication methods used by positive deviant schools varied. In three positive deviant schools, different types of meetings were arranged to address specific issues. These included class-specific meetings, individual parent meetings, and wider community and parent meetings, to review and discuss pupils' learning progress. Often, the specific type of meeting was tailored according to the goal of the teacher and needs of the parent, rather than relying only on general parent meetings. In other positive deviant schools, there was a higher frequency of communication between parents and teachers, often more interactive in nature, where parents could respond and provide additional feedback or information to the teacher. Teachers' creation of WhatsApp groups with parents improved discussions around pupils' learning and absenteeism.

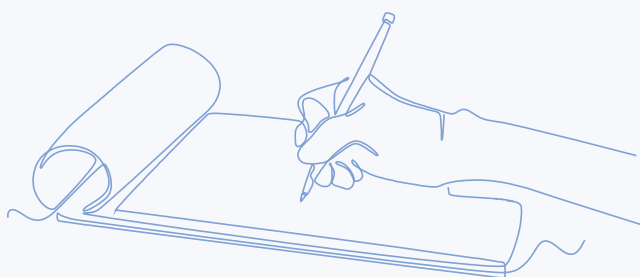
“ Our communication with the teachers is very frequent. I cannot go three days without meeting any teacher. I have to meet with a teacher, either in person or through a phone call. ”

– Parent of a pupil attending a positive deviant school



“ Most of the time, we receive information by being called in [to the school], and we discuss matters related to children’s meals, contributions for security, water and the children’s progress. The teachers send us monthly reports. [...] They emphasize that we should write comments to send back to the teachers. ”

– Parent of a pupil attending a positive deviant school



3.2.2 Stronger parental involvement in school activities, decision-making and pupils’ learning

Positive deviant schools foster stronger involvement of parents in school activities and decision-making. In several positive deviant schools, parents, even those not engaged in the SC or PTP, actively led and contributed to school development and improvement projects. One school leveraged a participatory approach, where parents met to actively discuss and establish expectations for themselves about what school supplies pupils should be equipped with at the start of the school year. Parents and teachers then worked through the SC to monitor and follow up with parents who were not contributing to these shared expectations. In another school, the WEO mentioned that parents and teachers regularly meet to discuss ideas and recommendations for school management and improvement projects, agree on the priorities and work jointly to monitor progress, which supports parents in having a sense of ownership over the school and its performance. Some level of

support to school development projects was observed in comparison schools as well, especially in relation to parents’ contributions through their labour and in-kind support, but with less emphasis on participatory planning and monitoring of the projects.

Other practices, such as parental support to school feeding programmes and involvement of parents in budget allocation and financial monitoring for the school were reported in a small number of positive deviant schools.

“ My thoughts are that parents and teachers should work together closely. The school and the home should be seen as one unit. ”

– Head teacher at a positive deviant school

Additionally, practices to support parental engagement in pupils’ learning were more evident in positive deviant schools.

Four positive deviant schools established a book-borrowing system, where both parents and pupils could check out non-academic reading materials. Both teachers and parents referenced this system as an important mechanism that supported parental engagement in pupils’ learning and supported studying at home. It is also notable that stakeholders at positive deviant schools were less likely to report challenges with home environments that were not conducive to studying.

3.2.3 Parent committees more actively facilitate support for addressing school and pupil challenges

In Mainland Tanzania, schools have several committees that aim to engage parents in supporting school performance.

Every primary school is expected to have an operational PTP, in Kiswahili referred to as “Ushirikiano wa Wazazi na Walimu (UWaWa)”, which aim to engage parents in supporting the learning environment at school and at home. Schools are also expected to have an SC, responsible for overseeing the supervision, administration and leadership of the school (The World Bank, 2021).

SCs and PTPs have played a vital role in enhancing parental engagement in positive deviant schools. While positive deviant schools benefited from stronger parental engagement overall, in several schools this engagement may be linked to the more active role of these committees that involve parents and act as a bridge between the school, parents and the broader community. However, similar to other evidence, school actors were sometimes confused about the difference in roles and responsibilities between the SC and PTP (see also Ruddle and Rawle, 2020).

SCs and PTPs in a few positive deviant schools provided important assistance to pupils who are economically vulnerable or struggling academically. For example, in one positive deviant school, the SC communicates with parents to establish what specific support is needed and monitors that the financial support families receive from external sources (e.g. foundations or civil society organizations) is put towards education. In another school, the PTP was known to cover contributions of parents who could not afford materials such as textbooks and school uniforms, to support pupils in continuing to attend school.

In one positive deviant school, the PTP was also actively involved in supervising pupil study groups, which allowed pupils to work on their assignments and discuss their academic challenges.

“Pupils in Standards 6 and 7 study outdoors every day, and our designated pupil leaders oversee this initiative. Importantly, we collaborated with the [PTP] to establish and manage this endeavour. Parent representatives oversee the initiative, ensuring that children begin studying by 1 p.m. [...] These leaders assist in providing information about any challenges pupils encounter during their studies, facilitating communication between pupils and teachers.”

– Teacher at a positive deviant school



3.2.4 Engage the broader community to support school activities and foster a sense of ownership over the school's success

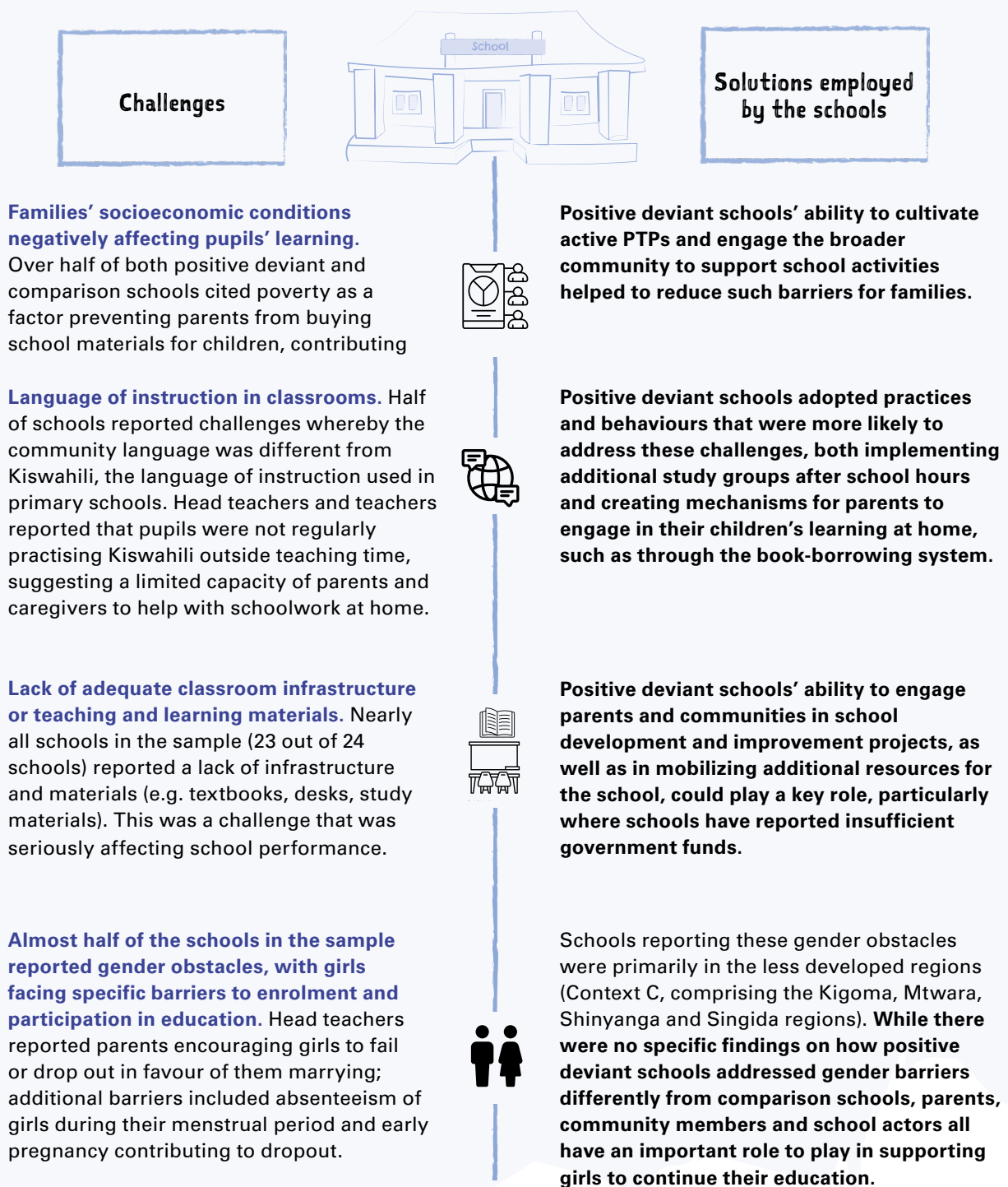
In nearly half of the positive deviant schools, the broader community is more systematically and regularly engaged in the school's activities. For instance, local workers such as health workers, local authorities (including the village chairperson), and community members (including village elders and people with no children at the school) are invited to attend school meetings regularly. This attendance supports them in better understanding the activities and issues of the school and facilitates their engagement in finding solutions.

Involvement of local authorities was often reported as a way to address issues regarding pupil absenteeism and financial challenges, or to support contributions to school feeding programmes. Many stakeholders from positive deviant schools indicated that this engagement of more community actors beyond only parents had helped to promote a sense of ownership of the community over the school and its success.

Box 1

The importance of community and parental engagement in supporting school and pupil success

Both positive deviant and comparison schools faced significant challenges in supporting all pupils to learn. However, positive deviant schools stand out for how they tackled these common challenges.





3.3 Pedagogical practices



The pedagogical practices leveraged by teachers in positive deviant schools differ from comparison schools in a few ways, including:

- More regularly assessing pupils' learning levels to identify and target tailored support to learners who are struggling.
- Supporting all pupils to improve their learning through extra after-school support.
- Using real-life examples to make learning more accessible for pupils.

3.3.1 More regularly assessing pupils' learning to identify and target tailored support to learners who are struggling

Teachers in positive deviant schools more regularly assessed pupils' learning levels and provided subsequent support. The frequency of these classroom- and school-based assessments varied, with some positive deviant schools using weekly and/or monthly assessments, and others assessing pupils' learning every three months. Results from the assessments are used to monitor pupils' learning progress and analyse certain topics in the curriculum that pose challenges to pupils in order to reteach them. School-based, continuous assessment has been promoted by the NECTA with training to support teachers to conduct assessment during lessons (United Republic of Tanzania, NECTA, 2024). Comparison schools were conducting assessments of learning less frequently and were less likely to provide any remedial support during class time because of assessment data.

Positive deviant schools were also more likely to target tailored support to learners who were struggling. This support included revisions and one-on-one support during regular class time, with some teachers mentioning that these pupils were more prone to absenteeism.

Teachers from two positive deviant schools were using peer support approaches for pupils falling behind. In one school, during regular teaching time, teachers assigned higher performing pupils to support their peers who were behind, as well as children with disabilities. In another school, teachers developed and assigned group work based on pupils' specific needs, allowing the teachers to tailor their support to the different groups.

3.3.2 Supporting all pupils to improve their learning through extra after-school support

In addition to tailored supports for learners who are struggling during class time, positive deviant schools were more likely to organize tutoring sessions and study groups for pupils outside teaching hours. Teachers at these schools were often overseeing these study groups of pupils and encouraging pupils to study together after school hours as an additional form of learning support. In many schools (both positive deviant and comparison), additional sessions were aimed at pupils in examination grades.

3.4 School climate



“ We’ve designated specific study areas and groups, some of which are exclusively for female pupils. Our female pupil leaders play a vital role in these groups. ”

– Teacher at a positive deviant school

As mentioned above, in some positive deviant schools, the PTP plays a role in supervising and supporting these study groups.

3.3.3 Using real-life examples to make learning more accessible for pupils

In both positive deviant and comparison schools, most teachers reported using participatory, child-centred approaches to motivate children and improve their learning. However, an interesting result emerging from three positive deviant schools was the use of real-life examples during lessons to make learning more accessible and enhance comprehension among pupils. In another positive deviant school, teachers were using successful individuals from the community as role models to motivate pupils.



Fewer differences related to school climate were identified between positive deviant and comparison schools. However, a small number of positive deviant schools took measures to support a positive school climate through:

- Actively promoting pupils’ participation in decision-making and encouraging them to share their feedback

3.4.1 Actively promoting pupils’ participation in decision-making and engaging them to share their feedback

A few positive deviant schools actively promoted pupils’ participation in decision-making, including on financial management.

In one positive deviant school, student clubs developed a plan for their activities and presented a budget request to the PTP for discussion and approval. In another positive deviant school, student council members were involved in discussions on how to allocate funds generated by farming activities.

Some positive deviant schools also developed opportunities for pupils to share their feedback with school staff on school development and teaching quality. In two positive deviant schools, a suggestion box was available for pupils to provide their feedback and ideas. Additionally, in one of these schools, there were weekly meetings between the head teacher and the student council to discuss these suggestions and which ones could be acted upon.



Box 2

Pupils' experiences with corporal punishment in the classroom

Corporal punishment in schools is still legal in Mainland Tanzania under the National Education (Corporal Punishment) Regulations 1979 (Global Partnership to End Violence Against Children, 2023). In 2019, new directives were provided to ban the use of corporal punishment from pre-primary to Standard 3; however, this policy was never enacted.

The use of corporal punishment was widespread across both positive deviant and comparison schools, and it was often linked to pupils' misbehaviour in classrooms. In many schools, pupils reported that incomplete homework and mistakes on assignments could be cause for punishment. Pupils also reported that the threat of punishment contributed to difficulty concentrating when studying and learning, lack of motivation, absenteeism, and fear of teachers and school staff. However, it is difficult to gain a comprehensive understanding of the extent to which corporal punishment occurs, as head teachers and teachers were likely to report that corporal punishment was not used in their school or classroom, contrary to reports by pupils. In some schools, the use of corporal punishment was also supported by parents, creating social influence for the practice to be maintained.



3.5 Decentralized administration



Only one unique practice was identified in a small number of positive deviant schools regarding their relationship with the decentralized administration, which included:

- WEO prioritizes improving teaching and learning when providing supports to schools.

3.5.1 WEO prioritizes improving teaching and learning when providing supports to schools

The management and supervision of schools in Mainland Tanzania is decentralized, with day-to-day school management overseen by local government authorities at the ward, district and regional levels. WEOs are responsible for regular school supervision, monitoring of the implementation of school plans developed by head teachers, and reporting data to the ward and district (United Republic of Tanzania, MoEST, 2022a).

In a small number of positive deviant schools, the WEO prioritized support towards improving teaching and learning.

This included actively participating in teacher training, checking pupils' notebooks as an indicator of lesson content and learning, and monitoring examination results for the school

to understand its performance and progress. This support was more evident for positive deviant schools in the most developed regions (Context A, comprising Iringa, Mbeya, Ruvuma and Tanga). In this context, WEOs in comparison schools appeared to focus their support more on community engagement or school infrastructure.

Previous evidence from Mainland Tanzania has shown considerable variation in the activities that WEOs engage in (Cilliers and Oza, 2020). Further guidance to formalize the role and expectations of WEOs and prioritize activities aimed at supporting teaching and learning is needed. Clarifying the accountabilities of Ward Education Offices and District Education Offices to support the implementation of MEWAKA activities can also strengthen the ecosystem of support available for head teachers and teachers.



4. Summary of results



Summary of results

Table 3 summarizes the different positive deviant behaviours and practices identified during Stage 3 of the DMS research.

Table 3: Behaviours and practices of positive deviant schools in Mainland Tanzania

Thematic domain	Results	Positive deviant behaviours and practices
School leadership and management	Enhancing teachers' pedagogical skills and performance through training and capacity-building opportunities, both in and out of school	<ul style="list-style-type: none"> Head teachers were more likely to develop initiatives and offer opportunities for in-service training at the school to improve teachers' pedagogical skills and performance. Some positive deviant schools were more likely to indicate that teachers engaged in training opportunities at the district level or supported teachers' own initiatives for furthering their education.
	Improving the quality of teaching and learning through performance monitoring and pedagogical support	<ul style="list-style-type: none"> Head teachers and Academic Committees more frequently and effectively manage teachers' quality of teaching through performance monitoring. In some positive deviant schools, head teachers demonstrated a stronger focus on providing pedagogical support to teachers.
	Fostering teachers' motivation through positive reinforcement and incentives	<ul style="list-style-type: none"> Head teachers were more supportive of their school staff, motivating and rewarding teachers for positive performance, including through financial incentives.
	Adopting more measures to curb pupil absenteeism	<ul style="list-style-type: none"> Head teachers ensure that their school has strengthened measures to curb pupil absenteeism, including through school feeding programmes, home visits and enhanced coordination with other actors.

Thematic domain	Results	Positive deviant behaviours and practices
Community engagement	Strengthening parental engagement in their pupils' learning	<ul style="list-style-type: none"> ■ Positive deviant schools more frequently engaged in positive and tailored communication with parents on their pupils' learning. ■ Positive deviant schools fostered stronger parental involvement in school activities, decision-making, and activities to support their pupils' learning, including through implementing book-borrowing systems.
	Parent committees more actively facilitate support for addressing school and pupil challenges	<ul style="list-style-type: none"> ■ The SC and PTP more actively support with enhancing parental engagement in school activities. ■ In some positive deviant schools, the SC and PTP more frequently provide in-kind and financial assistance to pupils who are economically vulnerable or struggling academically.
	Stronger engagement of the broader community to support school activities	<ul style="list-style-type: none"> ■ Positive deviant schools more systematically and regularly involve broader community stakeholders (e.g. elders, the village chairperson and local authorities, health workers) in school activities.
Pedagogical practices	More frequently monitoring pupils' learning and organizing additional supports, particularly for learners who are struggling	<ul style="list-style-type: none"> ■ Teachers from positive deviant schools were more regularly assessing pupils' learning levels, using this data to identify and target tailored support to learners who are struggling. ■ Positive deviant schools were more likely to organize additional learning support for all pupils after school, including through tutoring sessions, study groups and, in some cases, peer support. ■ Teachers in some positive deviant schools were more likely to use real-life examples to make learning more accessible and enhance comprehension among pupils.
School climate	More opportunities for pupils' participation in decision-making and sharing of feedback	<ul style="list-style-type: none"> ■ A small number of positive deviant schools were increasing pupils' participation in decision-making and provision of feedback, including on school development, financial management and teaching quality.
Decentralized administration	WEO prioritizes improving teaching and learning when providing supports to schools	<ul style="list-style-type: none"> ■ In a few positive deviant schools, the WEO's support was more likely to focus on teaching quality and maximizing learning time for pupils.

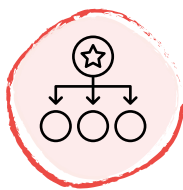


5. Conclusion and recommendations



Conclusion and recommendations

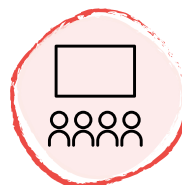
The DMS research reveals numerous differences in the practices and behaviours of positive deviant schools in Mainland Tanzania and provides insights into key policy recommendations that MoEST, PO-RALG and education actors can take forward to improve learning outcomes.



School leadership and management drives many differences between positive deviant and comparison schools, specifically by enhancing teachers' pedagogical skills and performance through training, capacity-building and routine performance monitoring. Head teachers in positive deviant schools were more likely to develop initiatives and offer opportunities for in-service training at the school, and to indicate they supported teachers in engaging in training offered at the district level. More frequent and effective performance monitoring of teachers helped to manage the quality of teaching and learning, and in some positive deviant schools, head teachers placed a stronger focus on providing pedagogical support to teachers. Head teachers at positive deviant schools were also more supportive of school staff, fostering teachers' motivation through positive reinforcement and incentives. Head teachers need to be supported to adopt this instructional leadership role, including by receiving the necessary guidance and formal training that ensures they are equipped to support improvement of teaching and learning in their school.



Positive deviant schools benefit from deeper, more active engagement of parents and the broader community in school affairs. These schools more frequently engaged parents through positive and tailored communication about their pupils' learning and fostered stronger parent participation in school activities. School staff should be supported to develop more systematic communication approaches with parents that are frequent, personalized and focused on pupils' learning. The PTP also plays a key role in positive deviant schools, facilitating support from parents and the community to help address school and pupil challenges, including for pupils who are economically vulnerable or struggling academically. Strengthening the mandate and capacities of PTPs can enable them to raise awareness among parents on the critical role they play in supporting pupils' learning. The research also illuminated that some positive deviant schools were more active in engaging the broader community, including elders, the village chairperson, local authorities and local health workers, to engage them as partners in supporting school activities and cultivating a shared sense of ownership over and responsibility for the school's success.



Teachers in positive deviant schools more frequently monitor pupils' learning through regular assessments and organizing additional support in and out of the classroom, particularly for learners who are struggling. Teachers at positive deviant schools were more regularly assessing pupils'

learning and using the data to provide these additional supports, especially for pupils who were falling behind. These additional supports took different forms, including one-on-one support, revisions or peer support during regular class time, as well as tutoring sessions and after-school study groups. Teachers need further professional development on how to effectively implement these assessments, and both the head teacher and WEO can play a role performance monitoring of teachers to promote this practice. Encouraging or standardizing out-of-classroom and remedial support for pupils may also be a pathway for improving learning, but it is important to consider how to incentivize teachers and community members to engage as partners to deliver this support.



Stage 4 of the DMS research in Mainland Tanzania will leverage participatory research methods to identify levers at the system, policy, school and community levels for scaling practices and behaviours of positive deviant schools to more schools in Mainland Tanzania. This stage of the DMS research will result in a co-created scaling plan that can be embedded within existing national strategies and support MoEST, PO-RALG and relevant education actors in Mainland Tanzania to take the results from the research forward.



While there are fewer differences between positive deviant schools and comparison schools related to school climate and the engagement of the decentralized administration, certain behaviours did emerge. Just under half of positive deviant schools were creating pathways and increasing pupils' participation in decision-making, including financial management, or sharing of feedback on school matters. In a few positive deviant schools, the WEO prioritized their support towards improving teaching and learning at the school, rather than on school infrastructure or community engagement. Ensuring the roles and responsibilities of the WEO are clearly defined and oriented around instructional leadership can further support the head teacher and other school actors.





Appendices



Appendix 1: Selection of positive deviant and comparison schools

Choosing performance indicators

Two performance indicators were used to select positive deviant schools for Mainland Tanzania:

- 1. Promotion rates** at the school level, representing the ability of schools to keep children enrolled and progressing within the education system. While automatic promotion policies are in place in Mainland Tanzania, analysis indicates average school promotion rates were less than 100 per cent in 2021 (UNICEF Innocenti et al., 2024), suggesting it is a relevant measure of school performance. This was constructed using enrolment data in primary schools between 2019 and 2022 and is calculated as the average promotion rate from Standard 1 to Standard 6. Less than 1 per cent of all schools had promotion rates higher than 120 per cent and just over 6 per cent had promotion rates lower than 60 per cent. These schools were excluded from sampling consideration.
- 2. PSLE performance** at Standard 7, based on school performance averaged across four subjects (Kiswahili, English, Mathematics and Science) using data from between 2019 and 2021. The PSLE is the first census-level standardized measurement of children's learning in Mainland Tanzania. For this reason, it was selected as the most appropriate learning indicator for sampling positive deviant schools. At the time of developing the research methodology, the PSLE was administered at the end of seven years of primary education and was considered a high-stakes examination for pupils' advancement to Form 1 in lower secondary school. The 2023 revision of the 2014 ETP has revised the primary education cycle to end at Standard 6.

Sampling strategy

The selection of positive deviant schools and their comparison schools includes only government primary schools, as the management of private or community schools is considered too different for practices to be transposed to the public sector. Schools with missing data (12 per cent of all schools), exceptionally large or small schools in terms of enrolment (just over 5 per cent), schools with one or more grades of primary not offered for one or more years (less than 1 per cent) and promotion rate outliers were removed from the sample. In total, the selection pool included 12,095 out of 15,717 government primary schools with complete EMIS data in all years of analysis.

Selection of positive deviant schools

Predictive models of school performance using the two indicators above were estimated for each of the three contexts using three years of data (2019 to 2021) to ensure that positive deviant schools are consistent outliers in performance and not dependent on a specific cohort's achievement. The choice of independent variables in this predictive model is based on the correlation between the independent variables and the performance variables. The choice of variables was also dictated by the desire not to include those measuring practices and behaviours, such as teacher gender and school fixed effects.

The predictive models include these context variables: average home distance to school, percentage of female pupils in the school, location (urban or rural), percentage of pupils considered to be at risk and receiving government support, and the relative wealth index of the school, calculated through Data for Good data⁶ (Meta, 2024).

⁶ EMIS data includes the GPS location of schools, making it possible to match the relative wealth index data with schools' data using the nearest GPS coordinate.

The resource variables are the teacher status (qualified versus unqualified) and education level of teachers, PTR, pupil-classroom ratio, pit latrines per 100 pupils, number of seats per pupil, water and

electricity available at the school, proportion of pupils enrolled in a grade, textbooks per pupil, and the presence of a library, teacher housing and/or a teacher office (see **Table 4**).

Table 4: Predictive models of promotion rates and PSLE raw scores, 2019–2021

Variable	Context A		Context B		Context C	
	Promotion rate	PSLE raw scores	Promotion rate	PSLE raw scores	Promotion rate	PSLE raw scores
% of pupils that are female	-0.011	0.040	-0.026	0.035	-0.064***	0.046
Average home to school distance for pupils (km)	-0.372***	-1.474***	-0.496***	-1.206***	-0.550***	-1.521***
Rural	-0.630	4.687**	-1.234	-6.154**	-3.075***	9.583***
School size	0.000	0.010***	0.000	0.010***	-0.000	0.009***
Pupils at risk and receiving government support (%)	-0.037***	-0.083*	-0.011	-0.028	-0.013	-0.016
PTR	-0.017***	-0.186***	-0.019***	-0.173***	-0.022***	-0.132***
Pupil-class ratio	0.001	-0.014**	-0.002	-0.005*	-0.000	-0.008***
Textbooks per pupil (0 to 3)	0.005	0.761	-0.305**	0.360	-0.134	0.767*
Seats per pupil at the school	-0.069	1.643***	-0.050	0.778*	0.098	1.155**
Pit latrines per 100 pupils	0.066*	0.646***	0.043	0.163	0.184***	0.531***
Water tank is available	0.358***	1.167**	0.017	1.551***	-0.032	0.235
Water is available at the school	-0.034	1.272	0.382*	-0.003	0.153	1.051*
Electricity is available	0.161	2.969***	0.360***	2.397***	0.299**	2.546***
Library is available	0.383*	1.651**	0.031	1.795***	0.179	1.048
Teacher office is available	-0.038	0.252	0.126	0.361	0.049	0.627
Teacher housing is available	-0.069	-2.234***	-0.560***	-2.716***	-0.442**	-1.708***
% of teachers with a diploma or more	0.085	2.186*	0.393	1.705	0.050	1.666

Variable	Context A		Context B		Context C	
	Promotion rate	PSLE raw scores	Promotion rate	PSLE raw scores	Promotion rate	PSLE raw scores
% of qualified teachers	-1.309	1.490	-0.273	0.374	-0.221	3.132
Relative wealth index	0.500***	3.948***	0.474***	4.636***	0.976***	5.182***
year=2020	-2.014***	-1.689***	-2.716***	5.981***	-2.892***	0.798*
year=2021	-3.156***	-5.719***	-3.305***	2.771***	-4.147***	-1.872***
Proportion of pupils in Standard 1	-0.819***	1.232***	-0.840***	1.611***	-0.843***	1.564***
Proportion of pupils in Standard 2	-0.050*	1.188***	-0.049*	1.542***	-0.092***	1.506***
Proportion of pupils in Standard 3	-0.014	0.946***	-0.183***	1.517***	-0.137***	1.474***
Proportion of pupils in Standard 4	0.079***	0.924***	-0.006	1.177***	-0.018	1.280***
Proportion of pupils in Standard 5	0.064**	1.196***	0.015	1.537***	-0.012	1.583***
Proportion of pupils in Standard 6	0.020	1.122***	-0.122***	1.589***	-0.117***	1.708***
Constant	YES	YES	YES	YES	YES	YES
R-squared	0.457	0.332	0.361	0.329	0.435	0.314
Observation	9503	9500	12882	12757	12134	12125

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: PSLE and EMIS data, 2021. Calculations made by authors.

The predicted average PSLE score and promotion rate of a school was then compared to their actual PSLE score and promotion rate. In each context, the 100 schools that furthest exceeded their predicted scores were then separated for pairing.

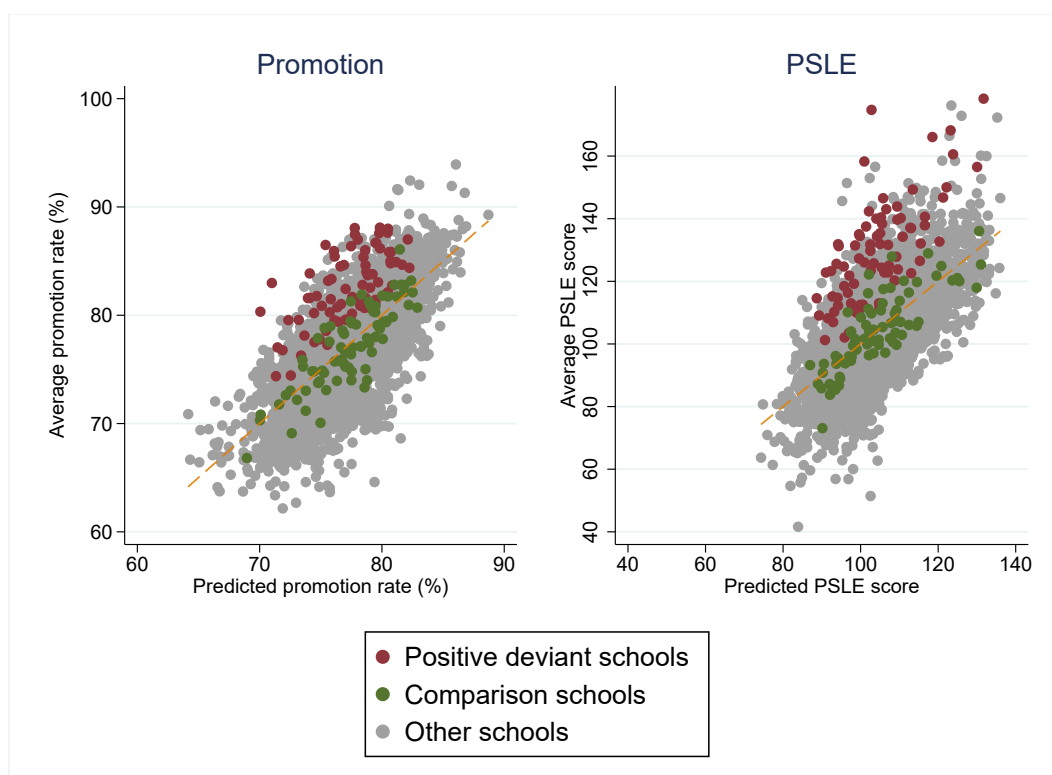
Selection of comparison schools

Comparison schools were selected if both their predictive score in promotion rate and PSLE were similar to their observed indicators.⁷ This ensured that the comparison schools were average-performing schools, neither better nor worse than expected in learning and promoting pupils.

A comparison school was selected for each positive deviant school if they were in the same council (or region if there was no viable comparison school in the same council) and in the same urban or rural setting as the positive deviant school, with characteristics as close as possible to those of the positive deviant school.

⁷ These are schools whose standardized residual is between -0.5 and +0.5.

Figure 2: Example demonstrating comparison of predicted versus observed promotion rate and PSLE scores for government primary schools considered for sampling in Context B



Source: PSLE and EMIS data, 2021. Calculations made by authors.

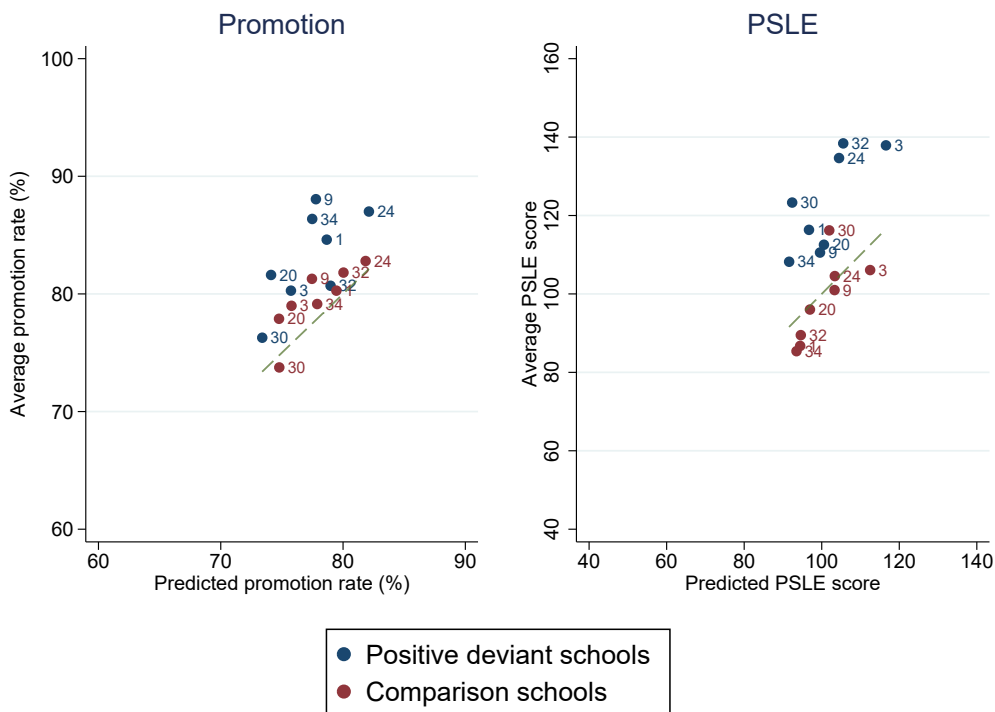
Note: This graph only represents schools available for sample consideration for Context B. Additional figures for Contexts A and C are available upon request.

Finalizing the sample of government primary schools

In total, 600 paired schools were included in the sampling pool, with 200 school pairs in each of the three contexts. From this pool, four school pairs for each context were selected, totalling 24 schools selected for the qualitative data collection.

To ensure the sample was best suited for a qualitative study, pairs with the closest characteristics in terms of total enrolment, PTR, percentage of qualified teachers and textbook-pupil ratio were selected. How the pairs compared in terms of their predicted indicators was also taken into consideration.

Figure 3: Example demonstrating comparison of predicted versus observed promotion rate and PSLE scores for final selected pairs in Context B



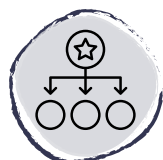
Source: PSLE and EMIS data, 2021. Calculations made by authors.

Note: This graph only represents the pair selection for Context B, not for the final sample of all 24 selected schools. The numbers indicate the label of the school pair to show comparison performance.



Appendix 2: Conceptual framework for Stage 3 of the Data Must Speak research

The DMS conceptual framework for Stage 3 is centred on five key thematic areas:



School leadership and management:

The role of principal is central to the performance of schools, as it sets the standards of performance to which teachers and students must aspire, also acting as the model to be followed. Similarly, it is the principal who is taken as a reference for the standards of responsibility applied in the school. In addition, especially in rural areas of some African countries where certain social norms could influence schooling, the impact of the principal on school performance includes their management of relations with the community (Mzabalazo Advisory Services, 2016).



Pedagogical practices: The importance of pedagogical practices stems from several studies that have shown that the child's learning at the individual level, and the performance of the school at the collective level, would benefit more from a pedagogy built around the student and integrating them as a central and active element of the process, than from a configuration where the student is limited to passively absorbing information (Elmore, 1996; Armstrong, 2006).



School climate: The relationship between climate and school performance has been the subject of several studies showing a positive

correlation between the two elements (Thapa et al., 2013). Although school climate is a rather broad topic with various components, factors such as the relationship between different school actors and perceptions of safety within the school are often at the centre of the debate and are an important point of analysis in DMS research.



Community engagement: Several studies have shown that community-led monitoring of school activities improves school attendance and learning outcomes in certain contexts. However, other research has shown that the knowledge of families and management committees needed to monitor activities at the school level (such as knowledge about the prerogatives of committees and the functioning of the school) is often quite limited. The impact of community engagement becomes significant when members are adequately trained on their role and responsibility in monitoring and managing schools (Snilstveit et al., 2016).



Decentralized administration: This area was included in the DMS research because of its importance in the co-creation process adopted, which aims to make government – at all levels (central, local, etc.) – an active actor in research. This includes sharing information about practices adopted within government institutions that in turn influence school outcomes.

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