



Zambia

DATA MUST SPEAK

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

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UNICEF Innocenti – Global Office of Research and Foresight

Via degli Alfani, 58

50121, Florence, Italy

Tel: (+39) 055 20 330

Email: innocenti@unicef.org

Social media: @UNICEF Innocenti on Facebook, Instagram, LinkedIn, Twitter and YouTube

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

Ministry of Education Zambia
UNICEF Zambia
UNICEF Innocenti – Global Office of Research and Foresight



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Data Must Speak research coalition of donors:





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List of acronyms and abbreviations

| | |
|--------|------------------------------------------------------------------|
| DEBS | District Education Board Secretary |
| DEO | District Education Office |
| DESO | District Education Standards Officer |
| DMS | Data Must Speak |
| DRCC | District Resource Centre Coordinator |
| ECE | Early Childhood Education |
| ECZ | Examinations Council of Zambia |
| EMIS | Education Management Information System |
| MoE | Ministry of Education |
| PTC | Parent-Teacher Committee |
| SIP | School Improvement Plan |
| SPRINT | School Programme of In-service Training for the Term |
| TaRL | Teaching at the Right Level |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNICEF | United Nations Children's Fund |



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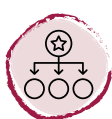
Schools Inspiring Change: Research on the practices and behaviours of positive deviant schools in Zambia

Executive Summary

Education plays a pivotal role in Zambia’s vision of achieving prosperity as a middle-income nation by 2030. The Government is committed to delivering high-quality, relevant education and lifelong skills for all children. Despite progress in reading and mathematics scores, learning outcomes in Zambia remain low. Regional disparities within the country persist in primary school completion rates, with girls facing a higher likelihood of dropping out before reaching senior secondary levels. The 2017–2021 Education and Skills Sector Plan underscores the Government’s focus on enhancing learning outcomes by addressing gaps in education quality, accessibility, equity and efficiency. In this context, the Ministry of Education (MoE) is leveraging an innovative research partnership with UNICEF to identify and scale local solutions already improving learning in Zambian primary schools.

The Data Must Speak (DMS) research initiative aims to explore solutions to such challenges. 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 to scale these practices. This report presents the local behaviours and practices found in positive deviant schools in Zambia, with the aim of helping to inform future education policy. This mixed-methods research has been co-created and co-implemented with MoE since 2021.

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



School leadership and management

- Head teachers dedicate more time and resources to supporting teachers' instructional practice.
- Schools strategically allocate teachers while considering more crucial grade levels.
- Head teachers have systems in place to monitor and promote teacher and student attendance.
- Senior staff ensure open and transparent communication with teachers and families.



Pedagogical practices

- Teachers balance instructional time between teacher-directed instruction and practice-based learning.
- Teachers and head teachers dedicate more time and resources to ensure all students are learning, particularly those falling behind.
- Teachers demonstrate greater confidence in lesson preparation and subject-matter knowledge.



School climate

- Senior staff facilitate multiple channels for students to express their opinions on school-related matters.
- Schools have strong systems in place for monitoring and responding to issues of violence.



Community engagement

- Schools empower the Parent-Teacher Committee (PTC) to play an active role in school decision-making and promoting the value of education in the broader community.
- Schools collaborate frequently with families through accessible channels.
- Schools engage members of the broader community to support vulnerable learners.



Decentralized administration

- Schools curate targeted support from the District Education Office (DEO) specific to their needs.
- Schools expand their collaboration with the DEO to involve members of the broader community.

Policy recommendations:



School leadership and management

- Promote more strategic allocation of teachers within schools, prioritizing early grades and exam grades, and explore effective teacher allocation mechanisms through further research.
- Support head teachers and their schools to develop systems for managing and promoting teacher attendance and effective use of instructional time.
- Ensure schools have systems in place to manage and promote student attendance.
- Support schools to improve transparent communication on school-related issues, including on budget and resource management, among school staff and with families.



Pedagogical practices

- Encourage and support teachers to balance teacher-led instruction and student-centred practice in the classroom.
- Reduce pressure on teachers to maintain the pace of curriculum (e.g., through adjustments in curriculum, instructional time or other classroom practices) over ensuring that every student is learning.
- Develop and standardize out-of-classroom support and remedial learning programmes for struggling students in all schools.



School climate

- Promote healthy teacher-student relationships by enhancing student consultation channels and supporting teachers to foster more positive learning environments.
- Support schools to develop standardized approaches, in collaboration with community actors, to monitor and address issues of school safety and physical violence.
- Further explore mechanisms and incentives that may influence teacher motivation.



Community engagement

- Strengthen capacity of the PTC to act as an intermediary between school and the community on the importance of education.
- Support schools to restructure traditional channels of communication with families to make them more accessible and less burdensome on families' time and resources.



Decentralized administration

- Enable DEOs to offer a more specialized menu of supports that are targeted to schools' and teachers' specific needs.
- Encourage and support DEOs to better embed other members of the school community, such as the PTC, into their engagements with schools.

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 Zambia together with the Zambian MoE.



1. Introduction

Introduction



1.1 Country context

Quality, relevant lifelong education and skills for all are key priorities of the Zambian Government for advancing human and national development. Although the country has made significant progress in expanding access to education, improvements to education quality have not kept pace. Zambian children are not developing the foundational reading and numeracy skills needed, with 98.5 per cent of children unable to read and understand a simple text by the age of 10 (World Bank et al., 2022). National grade 7 examination results indicate both regional disparities and inequalities across the country, with urban areas favoured over rural areas and private schools favoured over public schools (UNICEF Innocenti – Global Office of Research and Foresight, Ministry of Education Zambia and UNICEF Zambia, 2023). Other challenges include overcrowding, high teacher absenteeism, low instructional time and inadequate supplies of teaching and learning materials (Zambia, Ministry of General Education [MoGE] and Ministry of Higher Education [MoHE], 2017).

The education sector also faces challenges in strengthening its teacher workforce. Over a third of Zambian teachers do not meet the minimum qualifications required to teach at the primary level (UNICEF Innocenti – Global Office of Research and Foresight, Ministry of Education Zambia and UNICEF Zambia, 2023). Furthermore, the supply of teachers in Zambia is insufficient and inequitably distributed, which particularly

affects the secondary level, rural areas, and mathematics and science subjects (Zambia, MoGE and MoHE, 2017; Kabir, 2023). The Directorate of Teacher Education and Specialised Services has collaborated with public and private teacher training colleges, universities and NGOs to provide teachers with continuing professional development, though its impact on teaching and learning appears to be weak (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2016).

Zambia's MoE has embarked on several reforms to address these challenges. In 2022, the Zambian Government removed all fees from public education through its Education for All policy, and additional grants were provided to public schools to cover costs previously financed by such fees. The Zambian Government also embarked on the largest teacher recruitment initiative in the country's history (Syakalima, 2022) and made reforms to pre-service teacher education. Zambia's Catch-Up programme, using the Teaching at the Right Level (TaRL) targeted instruction approach, has had promising results in improving learning outcomes at the primary level (UNICEF Zambia, 2022). Catch-Up operates in over 4,400 public primary schools in eight of the country's 10 provinces (Bakuluma and Zuze, 2023), with a goal to continue scaling nationally.

The Data Must Speak (DMS) research in Zambia aims to support the Government's existing efforts to bolster learning by identifying local solutions used by education actors to address ongoing challenges.



1.2 Data Must Speak research in Zambia

Since 2015, MoE has been implementing the DMS initiative with the objective of strengthening evidence-based decision-making at all administrative levels of the Ministry and improving learning outcomes. DMS has supported the development of district and school profile cards, using Education Management Information System (EMIS) data to support monitoring and improve school performance.

In 2021, the DMS initiative was expanded to include the positive deviance research. The DMS research consists of five stages (see **Figure 1**). In Stage 1, quantitative analysis of administrative data identified contextual factors and school resources correlated with school performance, such as the gender of the principal and teachers, infrastructure, teacher characteristics and class size (UNICEF Innocenti – Global Office of Research and Foresight, Ministry of Education Zambia and UNICEF Zambia,

2023). Stage 2 of the DMS research identified a sample of positive deviant schools, or schools which outperform others in learning outcomes despite operating in similar contexts with equivalent resources, and respective comparison schools. In Stage 3, quantitative and qualitative data were collected from these schools to better understand the behaviours and practices that may drive differences in performance. This report is devoted to the analysis of these practices and behaviours, providing the foundation for Stage 4, which will seek to identify levers to scale such practices and behaviours to more schools in Zambia.

The DMS research is co-created and co-implemented in partnership with Zambian MoE officials and national technical experts. Extensive consultations with key stakeholders in the education sector took place at all stages of the research, including the development of research tools, sampling strategy and data collection, as well as the validation of results and formulation of relevant policy recommendations.



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Figure 1: DMS research stages



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 discusses these findings and presents 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 Zambia varied substantially from one school to another, even after considering the influence of contextual factors, resources and availability of school inputs (UNICEF Innocenti – Global Office of Research and Foresight, Ministry of Education Zambia and UNICEF Zambia, 2023). The selection of positive deviant schools is based on the results of this analysis:

- Sixty public primary schools with higher performance in national grade 7 mathematics and English examinations than predicted by statistical models (see **Table 5** in **Appendix 1**) were selected.
- Sixty comparison schools that had similar characteristics, such as class size and teacher qualifications, and were in close geographic proximity to the positive deviant schools 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 detailed description of the methodology is included in **Appendix 1**.

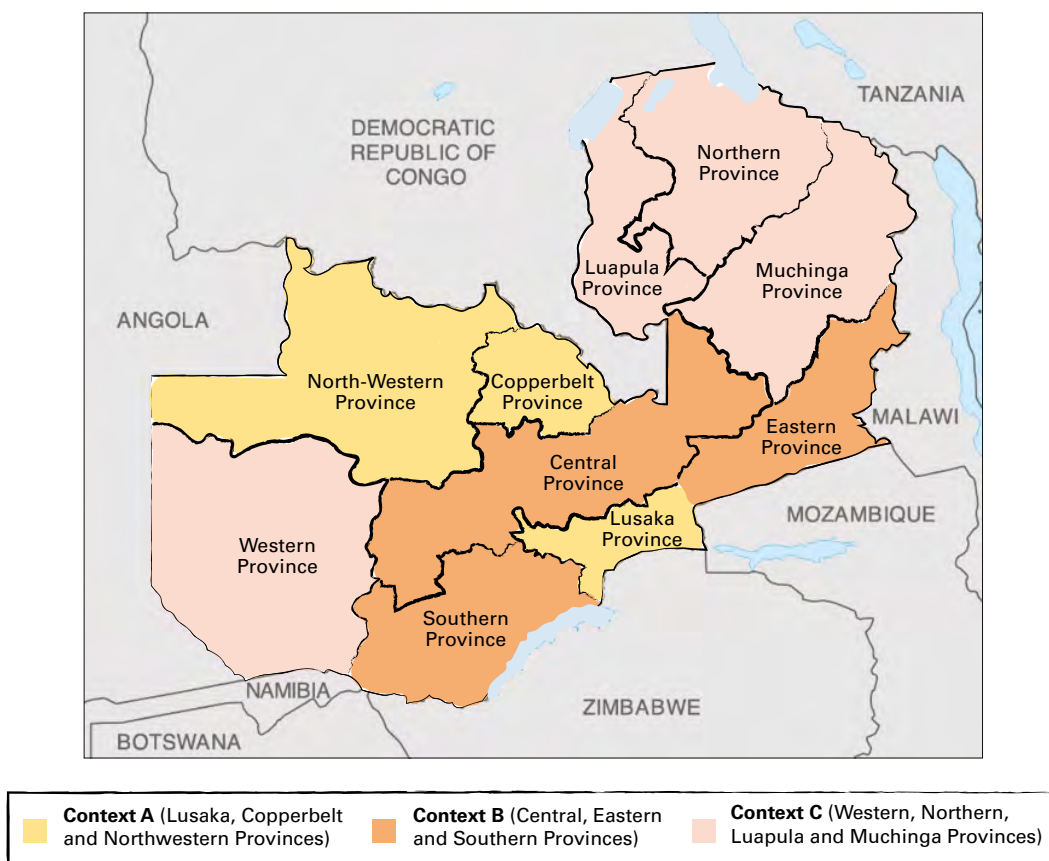
2.2 Contexts chosen for analysis

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 Zambia's Northern Province will not necessarily be the same as for a school in the capital of Lusaka. To ensure the representativeness of the sample and the possibility of generalizing the results to other schools, three contexts in which to select schools were defined, informed by development indicators, contextual factors and consultation with MoE:

- **Context A** (Lusaka, Copperbelt and Northwestern Provinces)
- **Context B** (Central, Eastern and Southern Provinces)
- **Context C** (Western, Northern, Luapula and Muchinga Provinces)



Figure 2: DMS contexts across Zambia's 10 provinces



2.3 Conceptual framework

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 |
| 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 |

| Thematic area | Elements explored by the domain |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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) |

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 quantitative and qualitative questionnaires (further information is provided in **Appendix 2**).

2.4 The mixed-methods approach

Stage 3 of the DMS research used a mixed-methods (quantitative and qualitative) approach adapted to Zambia’s context. Both methods analysed the same thematic areas from **Table 1**. While the quantitative survey measured several factors not reported in the EMIS, the qualitative survey allowed for further exploration of these factors. The triangulation of data from these two sources reinforced the results and provided different angles of analysis from which to explore each of the five thematic domains. Triangulation of responses across the actors included in data collection was also carried out to verify findings.

The quantitative and qualitative data-collection tools were co-created with MoE and relevant education stakeholders (including development partners, civil society organizations, local academic institutions and school-level actors) in August 2022. All data-collection tools were piloted in a smaller subset of schools not included in the final sample. The tools were revised as needed prior to data collection, which took place from February to March 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 and confidentiality to participants.



The quantitative approach

A sample of 120 schools was surveyed, with 60 positive deviant schools and 60 comparison schools. Each positive deviant school was associated with a comparison school according to their contextual

characteristics. All schools in the sample were surveyed; however, one pair of schools was excluded from the analysis due to data integrity issues. All PTC representatives and head teachers of these schools were surveyed. Data from 118 DEO officials out of the 120 planned were collected, in addition to data from 358 teachers and 307 classroom observations out of the 360 planned. More details on the quantitative methodology are included in **Appendix 1**.



The qualitative approach

A subsample of 18 schools was selected from the quantitative sample for the

qualitative survey. Of these, nine were positive deviant schools and the rest were comparison schools. As with the quantitative survey, each positive deviant school was associated with a comparison school similar in context. While all 18 schools included in the sample were surveyed, the same pair of schools excluded from the quantitative analysis was also excluded from the qualitative analysis. Therefore, 16 schools were included in the analysis, with only one teacher who could not be interviewed. More details on the qualitative methodology are included in **Appendix 3**.

Quantitative and qualitative data-collection activities and tools are presented in **Table 2**.

Table 2: Overview of the quantitative and qualitative samples included in the analysis

| Quantitative data collection (n = 118) | | | | | Qualitative data collection (n = 16) | | | |
|-------------------------------------------|------------------------|---------------------|---------------------------------------------|------------------|--------------------------------------|---------------------|----------------------------------------|----------------------------|
| Actor | Sample size per school | Respondents reached | Target classes/individual ¹ | Collection tools | Sample size per school | Respondents reached | Target classes/individual ¹ | Collection tools |
| Head teacher | 1 | 118 | N/A | Questionnaire | 1 | 16 | N/A | Semi-structured interview |
| Teachers | 3 | 352 | Grades 2, 4 and 7 | Questionnaire | 3 | 47 | Grades 2, 4 and 7 | Semi-structured interviews |
| PTC | 1 | 118 | N/A | Questionnaire | 1 discussion with 6–8 PTC members | 96–128 | N/A | Focus group discussions |
| Families | - | - | - | - | 1 discussion with 6–8 caregivers | 96–128 | N/A | Focus group discussions |
| Students | - | - | - | - | 2 discussions with 6–8 students | 96–128 | Grades 5 and 7 | Focus group discussions |
| Classroom observations ² | 3 | 301 | Grades 2, 4 and 7 | Videos | - | - | - | - |
| DEBS (District Education Board Secretary) | 1 | 116 | DESO (District Education Standards Officer) | Questionnaire | 1 | 9 | DESO | Semi-structured interview |

¹ In the rare case that individuals representing target classes were not available to participate in research activities, interviews/questionnaires were conducted with individuals from the nearest available grades. In instances where the DESO could not participate in data collection, interviews and questionnaires were conducted with support from the DEBS or the District Resource Centre Coordinator (DRCC).

² The classroom observations were filmed and then coded according to an analysis grid by a team of enumerators who were trained upon return from the field.



2.5 Limitations

The DMS research has limitations that should be considered. Firstly, results should be interpreted with caution as the analysis does not reveal whether the correlations observed represent causal effect.

The selection of positive deviant and comparison schools is based on grade 7 examination results. While this can be an indicator of a school's education quality, it does not cover the broader set of goals that MoE sets for its education system, such as student health and well-being, socioemotional competencies and access to future professional opportunities. Additionally, the quantitative sample size of 120 schools makes it difficult to detect smaller differences in the practices and behaviours of positive deviant and comparison schools at a statistically significant level.

Both quantitative and qualitative tools use self-reporting of individual experiences from surveys, 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,³ or some participants may have omitted information if they felt it could have negative consequences for them – for example, by criticizing their supervisors (managers, inspectors, etc.). To avoid social desirability 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. 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 have influenced responses.

Additionally, research instruments are subject to measurement bias.⁴ It is possible that differences in observations between positive deviant and comparison schools may be due to one or more unobserved characteristics of participants, such as differences in the backgrounds and home conditions of students and families. Although mitigation of the measurement bias risk was heavily focused on during co-creation with MoE, it remains possible that the following observations were influenced by unseen participant characteristics.

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 (e.g. a positive deviant school that only accepts students if they are high-performing and pass an entrance test), also causing potential selection bias.⁵ 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 MoE.

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

³ 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.

⁴ 'Measurement bias' refers to the distorted measurement of key study variables. This bias could be linked to unobserved contextual factors or observer bias, which impact the results of the study.

⁵ 'Selection bias' refers to a selection process of groups or data for analysis that results in lack of proper randomization. While this primarily applies to quantitative analysis, qualitative researchers are also concerned by selection bias, particularly convenience sampling, notably induced by subjects' willingness to participate (Denzin and Lincoln, 2011).

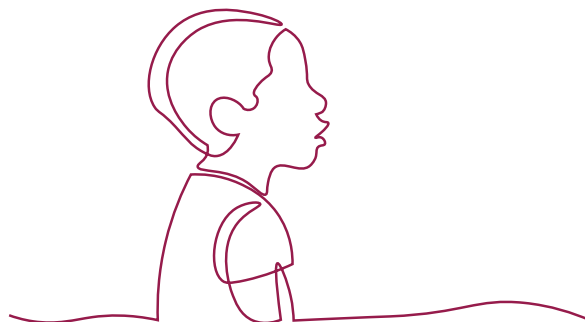


3. Results




Results

The results on practices and behaviours of positive deviant schools presented are derived from both quantitative and qualitative research across the five thematic areas. Statistically significant results from quantitative surveys and classroom observations are presented in **Appendix 5**. These findings were discussed and validated in partnership with MoE colleagues who were engaged throughout the DMS research's design and implementation.



3.1 School leadership and management



The leadership and management of positive deviant schools stand out from those of comparison schools by:

- Supporting teachers to improve their performance and skills in the classroom
- Strategically allocating teachers while considering more crucial grade levels
- Implementing measures to improve teacher and student attendance and effective use of instructional time by teachers
- Enhancing open and transparent communication with teachers and families

3.1.1 Supporting teachers to improve their performance and skills in the classroom

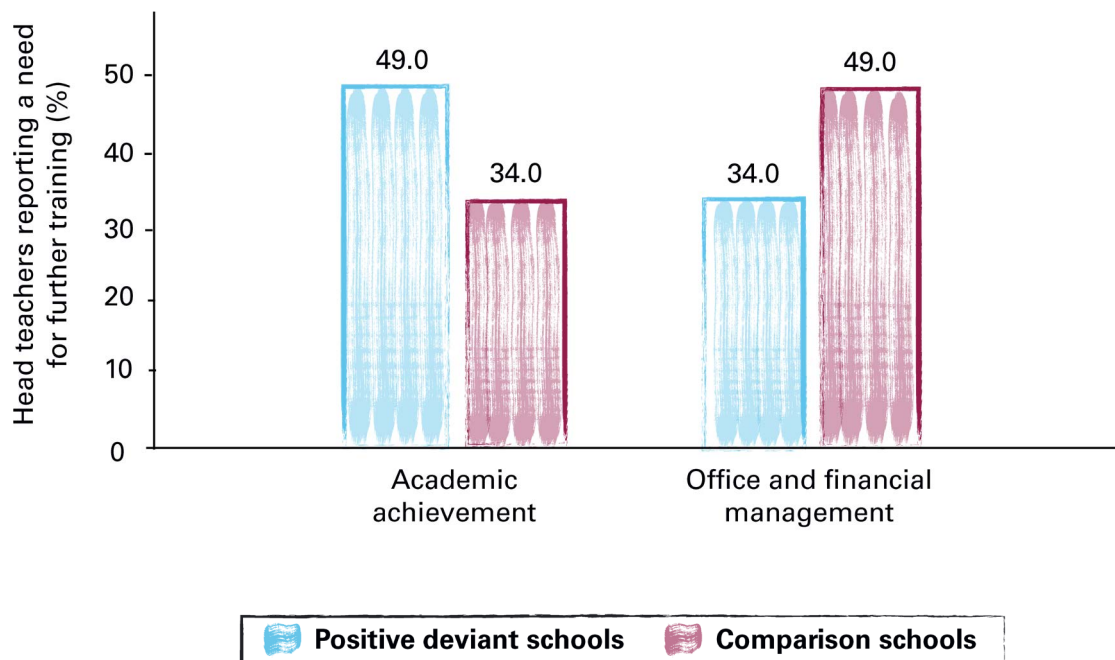
Head teachers in positive deviant schools are more likely to develop initiatives to improve teachers' pedagogical skills and performance compared to head teachers in comparison schools. Qualitative findings

indicate that head teachers in positive deviant schools were more inclined to dedicate time (e.g., by allocating days) and financial resources to support teachers' participation in pedagogical training delivered outside school. In one positive deviant school, teachers reported being encouraged by their head teachers to study in parallel to their employment to

strengthen their instructional skills. **Head teachers in positive deviant schools tend to view their role as that of an instructional leader, placing greater emphasis on supporting what occurs in the classroom than managing administrative tasks.** When asked about their training needs, head teachers at positive deviant schools indicated greater concern with student learning than with more traditional administrative tasks (see

Figure 3). Specifically, head teachers at positive deviant schools were 15 percentage points less likely to report that they needed more training in administrative and financial management and were 15 percentage points more likely to indicate that they required more training related to learning performance. This may indicate that the head teachers at positive deviant schools prioritize academic achievement and instructional leadership as key responsibilities.

Figure 3 : Percentage of head teachers reporting a need for further training, by skill area



Source: Authors' calculations based on quantitative data collected.

Teacher performance monitoring is more frequent and reported to be particularly effective in positive deviant schools. While head teachers and senior staff⁶ at positive deviant schools reported engaging in activities to ensure teachers were improving their teaching skills almost every day, this activity was reported as occurring only weekly in comparison schools.

Qualitative data showed that school staff⁷ at positive deviant schools were more likely to report their frequent participation in various teacher performance monitoring activities, such as in-depth evaluation systems, systems for regular feedback on instructional performance, teacher self-evaluations and co-designing of action plans to improve teachers' performance.

⁶ 'Senior staff' is defined as deputy head teachers and senior teachers.

⁷ 'School staff' is defined as head teachers, deputy head teachers and teachers.

Teacher performance monitoring is more data-driven in positive deviant schools.

Head teachers were 17 percentage points more likely to use student learning data, such as exam scores, when evaluating teacher performance.

Head teachers in positive deviant schools were more strategic when conducting classroom observations. Head teachers were 15 percentage points less likely to report that they conducted classroom observations randomly, and instead prioritized observations for the teachers, classes and subject areas with the greatest need. It is worth noting that in both groups of schools, staff report observing classes at comparable frequencies.

3.1.2 Strategically allocating teachers while considering more crucial grade levels

Positive deviant schools tend to allocate their higher performing teachers to early grades and examination grades. In both positive deviant and comparison schools, teachers' performance was considered when determining teaching assignments. However, several positive deviant schools reported a clear strategy in allocating the most experienced and competent teachers to foundational learning and examination grades, which was not as common in comparison schools.

Head teachers tend to prioritize grades that serve as transitions between education levels for their own teaching assignments. While head teachers in both sets of schools spend approximately the same amount of time teaching, head teachers from positive deviant schools were 7 percentage points more likely to teach Early Childhood Education (ECE) and 28 percentage points more likely to teach grade 9.⁸ While ECE serves as an entry into formal primary education, grade 9 is both an examination year and the transitional grade between lower and upper secondary in Zambia. Head teachers at both positive deviant

and comparison schools are equally likely to teach grade 7, the transitional grade between primary and lower secondary and an examination year in Zambia.

Some positive deviant schools consider a variety of different factors, such as teachers' preferences, class size and prioritization of early grades, when determining class assignments. In Zambia, pupil-teacher ratios tend to be higher in primary grades 1 to 4, where children are expected to acquire critical foundational skills (Kabir, 2023). Although teacher allocation strategies prioritizing early grades, not just exam grades, could contribute towards improving learning, further research is needed on effective allocation mechanisms. UNICEF Innocenti's Teachers for All research is exploring mechanisms of prioritization, including within schools, in Zambia and 13 other African countries, to help governments maximize the efficiency of teacher allocation.

3.1.3 Implementing measures to improve student and teacher attendance and effective use of instructional time by teachers

Learner contact hours are positively associated with exam performance, highlighting the importance of instructional time for learners (UNICEF Innocenti – Global Office of Research and Foresight, Ministry of Education Zambia and UNICEF Zambia, 2023). Reducing teacher absenteeism is one of the most crucial levers for optimizing contact hours. However, the challenge of teacher absenteeism is nationally recognized in Zambia, with 20 per cent of teachers routinely absent from school (Zambia, MoGE, 2017).

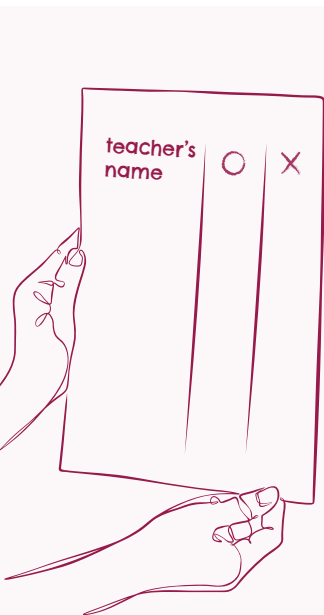
Qualitative data indicates that teacher absenteeism is particularly concerning in Context C (see **Figure 2**), resulting in limited learning time for students in both positive deviant and comparison schools. Across the three contexts, learners also reported

⁸ Both findings are statistically significant at the 0.90 confidence level when controlling for what grades schools provide.

cases where teachers were present at school but not teaching. In rural areas, alcohol consumption by teachers during instructional time was also regularly reported by students. These negative behaviours, highlighted by qualitative results, were more likely to be mentioned in comparison schools.

Most positive deviant schools are more systematic in using different accountability strategies to ensure that teachers are present and teaching while in class.

Qualitative data highlights that most positive deviant schools use random classroom checks to ensure that the teacher is present and facilitating effective instruction. Head teachers at positive deviant schools also task teachers with making up missed lessons in the event of an absence. For instance, in one school, a head teacher highlighted their use of a written monitoring system to track teacher attendance and ensure compensation hours.



“ I will write a chat wheel; there, I will be writing every teacher’s name of the days. I will be crossing. If you are there, I will be painting in a certain colour. If you are out, without permission in a certain colour. So that at the end of the term we see how much time we have lost. You will have to make up for those hours you have not taught.”

– Head teacher at a positive deviant school

Positive deviant schools have also put in place financial practices to dissuade teacher absenteeism. On average, these schools were 8 percentage points more likely to charge teachers when they arrived

late for work. In one positive deviant school, a head teacher reported not paying teachers in the case of unjustified absence.

Head teachers at positive deviant schools were more likely to have received formal training on school management, which often included teacher monitoring as a core topic. On average, head teachers at positive deviant schools were 22 percentage points more likely to have had formal training in school management, reporting that such training focused on topics such as administrative management, strategic planning and teacher monitoring.

Student absenteeism is a major issue in Contexts B and C and is mainly driven by socioeconomic challenges, according to qualitative findings. In rural areas, poverty contributes to high rates of child labour and requires older children to stay at home to watch their younger siblings while their guardians are at work. In these two contexts, the lack of access to basic health services, poor sanitation at schools and significant risk of malaria were reported to lead to frequent rates of student sickness, stopping numerous children from regularly attending school in good health. In addition, religious ceremonies often prevent children from attending school for several weeks, especially in Context C. Finally, early pregnancy is mentioned as one of the main drivers of learner dropout across the country.

To tackle student absenteeism, head teachers, teachers, PTCs and caregivers at positive deviant schools were more likely to report strict control and management of student attendance. Head teachers were 19 percentage points more likely to talk to the caregivers of learners when lateness was an issue. Qualitative findings show that positive deviant schools make extra efforts to reduce absenteeism, including teachers conducting home visits to caregivers, engagement of families in finding solutions for poor attendance, implementation of buddy systems where students commute to school in pairs and hosting of awareness-raising sessions on the importance of education.

Finally, long commutes between home and school were reported as a significant driver for student absenteeism in Context C. Two positive deviant schools in this context constructed sleeping accommodation on their campus or found nearby accommodation for students living far away from school.

3.1.4 Enhancing open and transparent communication with teachers and families

Teachers and PTCs from positive deviant schools highlight that transparent and efficient administrative and management processes were important features of their schools, especially in Contexts B and C. For example, positive deviant schools were more likely to ensure a clear distribution of roles and delegation of responsibilities among school actors.

“When the head is not around, the deputies are in charge; when the deputies are not there, the senior teachers are in charge. They work together as one.”

– PTC representative at a positive deviant school

Additionally, qualitative research found that almost half of all positive deviant schools mentioned **transparency of school budget decisions and resource allocations** as a prominent feature of their school’s management. In one positive deviant school, such transparency was believed to promote accountability and ensure

teachers had access to sufficient pedagogical materials, a crucial component of high-quality teaching.

Head teachers from positive deviant schools were more likely to involve other actors in decision-making. Qualitative findings suggest that the coordination between head teachers, senior staff and teachers is stronger. For instance, teachers from some positive deviant schools reported being regularly involved in decision-making, priority-setting, budget allocation and academic decisions. In one positive deviant school, the head teacher encouraged consensus among school staff before any major decisions were made.

In several positive deviant schools, caregivers indicated they felt more involved in decision-making processes. In some schools, caregivers reported being involved in general decision-making, budget management and issues pertaining to student misbehaviour and school safety. Such behaviour exemplifies that parental engagement in positive deviant schools extends beyond matters that only pertain to their own child(ren). It also suggests that head teachers are more likely to actively involve both school staff and families in decision-making in positive deviant schools.

Head teachers relied on learners’ input to improve school management. In several positive deviant schools, there is a suggestion box for students to submit feedback and comments on school and classroom management. In one positive deviant school, the head teacher also uses this box to monitor teachers’ performance and attendance.

Positive deviant schools were also 10 percentage points more likely to have an updated School Improvement Plan (SIP) in place. This suggests that these schools are more likely to follow an annual planning process, which supports the organization of school actors and the broader community around a shared set of goals.



3.2 Pedagogical practices



The pedagogical practices of positive deviant schools differ from those of comparison schools in the following ways:

- Teachers strike a better balance between teacher-led instruction and student-centred practice.
- Positive deviant schools dedicate more time and resources to learning for all students, including those falling behind.
- Teachers demonstrate more confidence in lesson-planning abilities and subject-matter knowledge.

Interviewed DEO officials **rated the quality of teaching in positive deviant schools** higher than that of comparison schools and indicated that such ratings were based on both learning data and classroom observations (see **Appendix 4** for more information). To better understand **how** the quality of teaching differed between positive deviant and comparison schools, pedagogical practices for both subsets of schools were explored through classroom

observations, in addition to the quantitative and qualitative surveys. Contextual factors, such as class size, grade level, subject and access to learning resources did not differ significantly between the classes observed in positive deviant and comparison schools. Surveyed teachers were also asked to evaluate their needs for further training and capacity-development and report on which aspects of teaching they found most difficult.



3.2.1 Striking a better balance between teacher-led instruction and student-centred practice

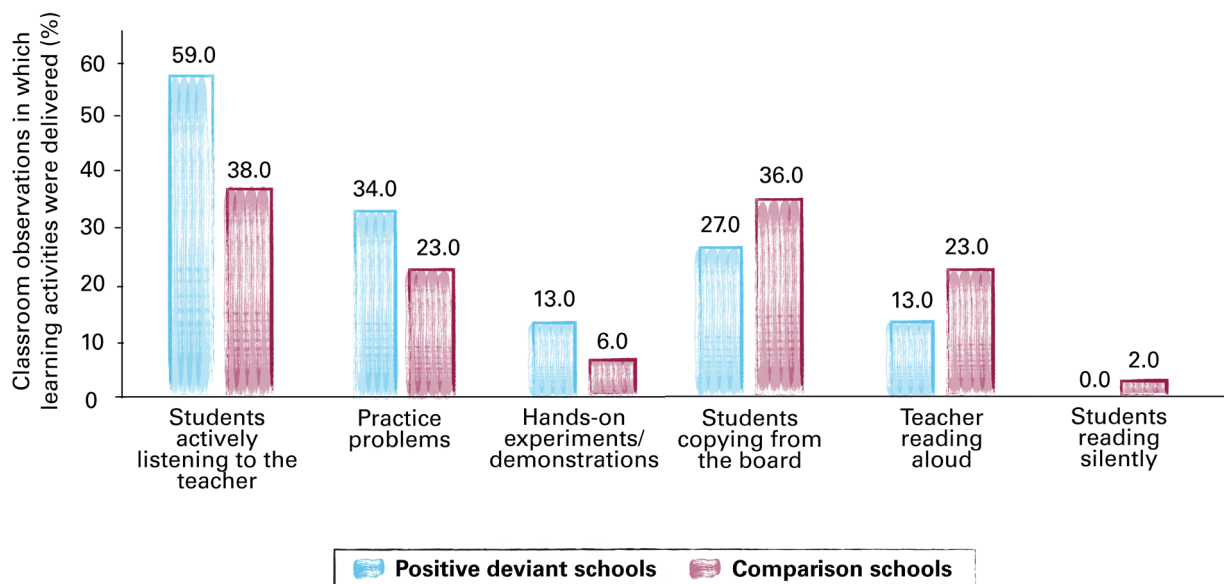
Data from classroom observations indicate that teachers at positive deviant schools achieve a greater balance between both student-oriented learning activities and teacher-led instruction.⁹

Teachers in positive deviant schools were 8 percentage points more likely to engage students in experiments or other hands-on demonstrations and, although not statistically significant, 11 percentage points more likely to engage students in practice problems and assignments. Conversely, teachers in comparison schools tend to still be the primary focus of the classroom. For example, teachers in comparison schools were 10 percentage points more likely to lead instruction by reading aloud from a textbook, a reading book or a set of notes during class (see **Figure 4**). The Zambian

MoE has advocated for greater application of the student-oriented approach within the classroom, moving teachers away from traditional “chalk and talk” lecture methods in which classes are overly teacher-directed and not engaging for student learning (Zambia, MoGE and MoHE, 2017).

Student-oriented learning activities are more likely to be prefaced with teacher-oriented instruction in positive deviant schools. Teachers in positive deviant schools were 20 percentage points more likely to have their students actively listening to them to solve a specific assignment. In both the 2012 and 2015 Programme for International Student Assessment results, a balance of pedagogies in which teacher-directed instruction is the main (but not sole) mode of instruction is positively associated with learning outcomes in mathematics and science (Mourshed et al., 2017).

Figure 4: Percentage of classroom observations in which learning activities were delivered, by type



Source: Authors’ calculations based on quantitative data collected.

Note: Differences in the percentage of classes in which practice problems and students copying from the board were observed between positive deviant and comparison schools were not statistically significant.

⁹ While teacher-directed instruction includes all methodologies in which the teacher acts as the “primary deliverer of instruction”, student-oriented instruction places students more at the focus of classroom instruction, giving them greater agency over not only what, but also how and why they learn (Prater, 2018).

3.2.2 Dedicating more time and resources to supporting learning for all students, including those falling behind

Teachers at positive deviant schools more frequently provide additional support during class instruction to learners who are not making adequate progress. While 66.7 per cent of teachers in positive deviant schools reported giving extra support in every lesson or almost every lesson to students falling behind, only 55.6 per cent of teachers in comparison schools reported the same. The types of in-class remedial supports for struggling students do not differ substantially between the two subsamples of schools. Almost 50 per cent of teachers were observed to substantially adjust their teaching to students' levels, such as by initiating a back-and-forth exchange when a student has a misconception to help them understand. Zambia is currently scaling up the use of targeted instruction in primary schools through the Catch-Up programme, modelled from TaRL (see **Box 1**).

In some positive deviant schools, teachers found other ways to support struggling learners in the classroom. For example, teachers developed additional learning activities for students moving at a faster pace to give more individual support to students who were falling behind. Other practices included frequent checks for understanding during class instruction and other forms of formative assessment.

Teachers in positive deviant schools attach greater importance to ensuring that every student is learning than adhering to the pace of curriculum. In interviews conducted after the classroom observations, teachers from positive deviant schools were 8 percentage points less likely to rate the success of their lesson based on its timeliness or adherence to a curricular schedule. Instead, teachers evaluated their performance in the classroom on whether all students were able to comprehend the lesson's content. In one positive deviant school, teachers reported that they prioritize ensuring all learners understand the material, compared to covering all of a lesson's expected content on time.

“ We don't force ourselves to finish the syllabus because once you (start) rushing to finish the syllabus, then you will be leaving the learner behind. (...) So we just move at our own pace, bit by bit. That is the pace of the children and my pace combined. ”

– Teacher at a positive deviant school



Positive deviant schools also provide more remedial supports outside traditional instructional time. According to the qualitative data, supports for struggling students in positive deviant schools often include extra classes, reading programmes and additional learning materials for at-home remediation.

A key difference between positive deviant and comparison schools lies in the decision-making process for when and how remedial supports are delivered. In positive deviant schools, such supports tend to be more systematized. For example, in one positive deviant school, students who arrive late are automatically supplied with remedial work. Teachers in another school are required to call struggling students to school early for additional lessons. Some positive deviant schools also ensure the engagement of learners' families. In one positive deviant school, teachers made special arrangements with caregivers to meet with struggling learners at home to help them catch up with reading. Other positive deviant schools required caregivers to review and 'sign off' on students' daily homework to engage them in their academic progress.



Box 1

Zambia's Catch-Up programme

Between 2016 and 2017, MoE, with support from UNICEF, piloted Catch-Up, a targeted instruction programme to support children's foundational literacy and numeracy skills. Targeted instruction groups students according to their learning levels for all or part of the schoolday or year, allowing instruction to be more tailored to individual student needs (World Bank, 2023). A common model of targeted instruction, TaRL, has been shown to have moderate success in improving foundational learning (Abdul Latif Jameel Poverty Action Lab, 2018).

Targeted instruction tends to follow three steps:

1. Students are given quick, low-stakes assessments to measure their current learning levels.
2. Students are grouped by learning levels and provided with tailored and interactive learning activities.
3. Students are re-assessed to monitor progress towards their learning goals and re-grouped accordingly.

Catch-Up targets learners in grades 3 to 5, dedicating one hour per day to grouping students by learning levels and small group interactive activities (UNICEF Zambia, 2022). During its pilot, the share of pupils who could read a simple text increased from 22 per cent to 41 per cent (Oba, 2022). National roll-out began in 2018 and focused on provinces with the lowest learning outcomes, with over 20 per cent of primary schools and approximately 240,000 students reached by 2020 (Oba, 2022).

Catch-Up has helped bring more effective pedagogical practices into the classroom. In the DMS sample of both comparison and positive deviant schools in Zambia, 23 per cent were participating in the Catch-Up programme. Teachers in schools with Catch-Up were more likely to

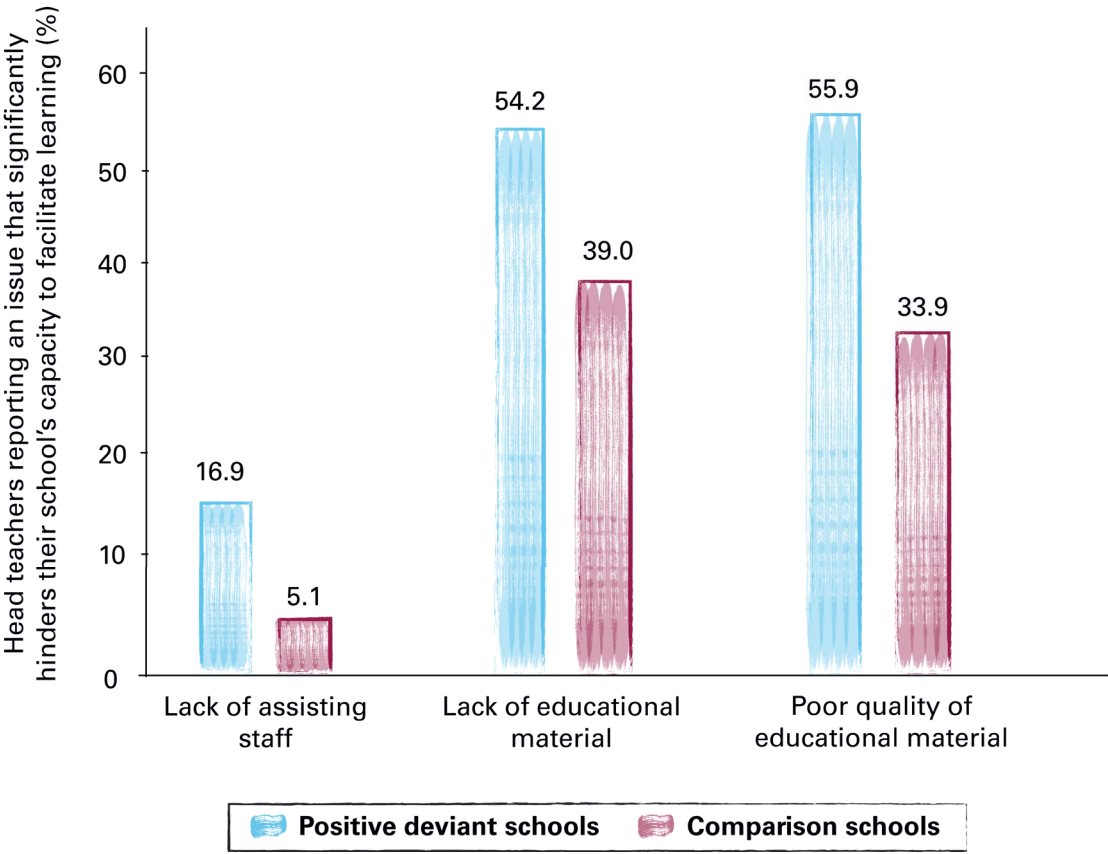
- help clarify students' misunderstandings
- encourage student performance and achievement
- promote students' interpersonal skills
- create space for and encourage students to ask questions

Qualitative findings suggested that schools implementing Catch-Up perceived it as a key strategy to support learners in need. However, these schools were more likely to limit themselves to this initiative than to develop additional strategies to support learners who were falling behind. Additional research could explore the impact of linking the Catch-Up programme with other supports, such as extra classes and reading programmes.

Head teachers in positive deviant schools tended to have more negative perceptions of the educational supports they had access to. For example, head teachers were more likely to cite that student learning was hindered by 1) a lack of educational material, 2) poor-quality educational material and 3) a lack of assisting (non-teaching) staff

(see **Figure 5**). Previous analysis from the DMS research in Zambia has demonstrated a positive relationship between teaching and learning materials, such as textbooks and student exam performance (UNICEF Innocenti – Global Office of Research and Foresight, Ministry of Education Zambia and UNICEF Zambia, 2023).

Figure 5: Percentage of head teachers reporting an issue that significantly hinders their school’s capacity to facilitate learning, by type



Source: Authors’ calculations based on quantitative data collected.

Teachers at positive deviant schools employ greater mitigation strategies to overcome shortcomings in teaching and learning materials. Qualitative data found that teachers more frequently reported adapting lesson plans and their teaching style around the availability and quality of didactic

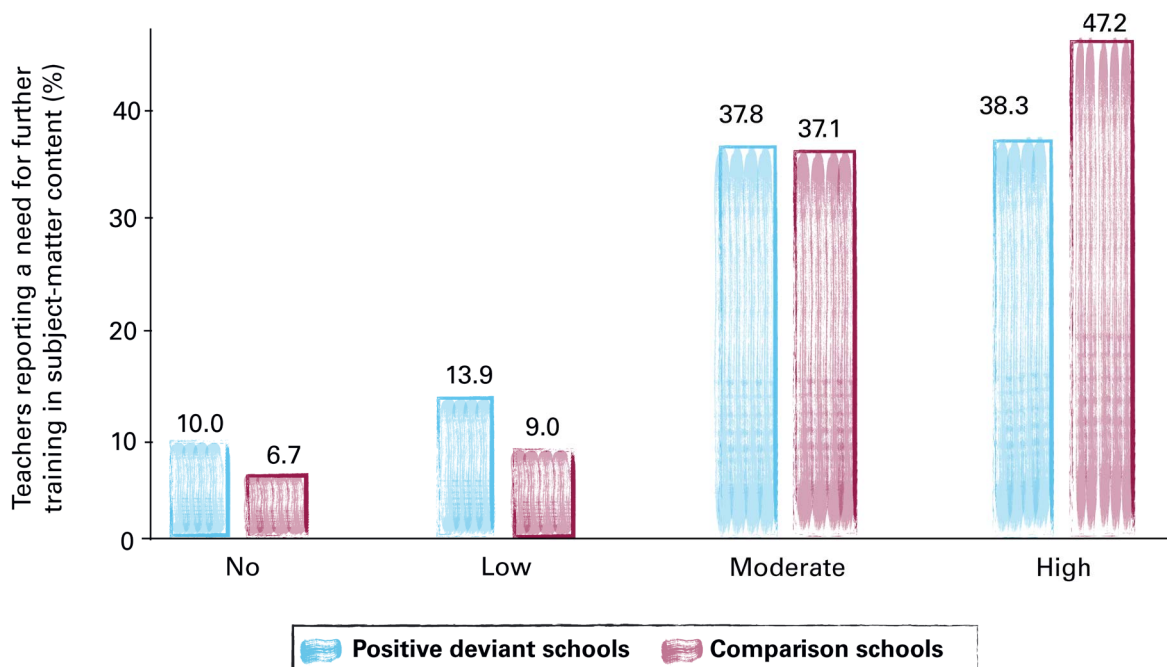
materials, in addition to other contextual factors, such as class size. For example, in one positive deviant school, teachers are encouraged to be innovative and resourceful with their teaching aids, leading to the creation and use of sock puppets by one teacher to support reading lessons.

3.2.3 Demonstrating greater confidence in teachers' lesson-planning abilities and subject-matter knowledge

Teachers at positive deviant schools report being more comfortable and skilled with lesson planning. Across both positive deviant and comparison schools, 94 per cent of teachers reported lesson planning for most or every class. Teachers from positive deviant schools were 9 percentage points more likely to indicate that they had no issues with lesson preparation across all subject areas. Teachers at positive deviant schools were also 7 percentage points more likely to prepare lesson plans individually, while teachers at comparison schools were more likely to discuss lesson plans with their colleagues. Both findings suggest that teachers in positive deviant schools have greater confidence in their ability to independently craft engaging and thoughtful lesson plans.

Confidence in subject-matter knowledge is also higher, with teachers at positive deviant schools reporting an overall lower need for additional training in subject-specific knowledge and content. For example, while 47.2 per cent of teachers in comparison schools reported a significant need for further training in subject-matter content, only 38.3 per cent of teachers in positive deviant schools reported the same (see **Figure 6**). While it is important to note that a significant portion of teachers from both groups of schools reported at least a moderate need for additional training in subject-specific content, this need was, on average, significantly lower for teachers in positive deviant schools.

Figure 6: Percentage of teachers reporting a need for further training in subject-matter content, by level of need



Source: Authors' calculations based on quantitative data collected.

Note: Surveyed teachers were asked to identify if their need for further training in subject-matter content was 'high', 'moderate' or 'low', or if they had 'no' need at all.



3.3 School climate



Positive deviant schools tended to have more positive student-teacher relationships and lower perceptions of school-based violence. Practices that contribute to these differences in the school climate include:

- Providing more opportunities for student expression and consultation
- Developing and maintaining systems to monitor and combat bullying and corporal punishment

Positive deviant schools also benefit from greater well-being and motivation among teachers and head teachers (see **Box 2**).

Evidence has demonstrated positive links between school climate, teacher and student wellbeing, and learning (Bas, 2021; Thapa et al., 2013; Woolf and Digby, 2021). The need for positive and safe learning environments has only increased following COVID-19 school closures, which led to greater rates of mental health issues and risk factors, such as poverty and domestic violence, among children (WHO, 2022).

3.3.1 Providing greater opportunities for student expression and consultation

Positive deviant schools have more positive relationships between students and teachers. While 41.8 per cent of teachers at positive deviant schools strongly agreed that students and teachers usually had positive relationships, only 34.3 per cent of teachers at comparison schools reported the same. Such environments may allow students to feel comfortable coming to class and asking questions to teachers.



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Students have direct and indirect opportunities to express their opinions. In schools with student governance bodies, 63 per cent were reported as being ‘very active’ by head teachers in positive deviant schools, whereas only 44 per cent were reported to be similarly as active in comparison schools. Qualitative findings indicate that students also have access to more indirect methods of consultation, such as suggestion boxes. The existence of both direct and indirect opportunities allows more students to come forward with their concerns and opinions, not only to their teachers but also to other administrative staff.

3.3.2 Developing and maintaining systems to monitor and combat bullying and corporal punishment

Students reported experiencing corporal punishment in both positive deviant and comparison schools, although this practice is less commonly reported in positive deviant schools. Corporal punishment of children was banned in Zambia with the enactment of the Children’s Code, Act No. 12 of 2022. However, 82 per cent of PTC representatives surveyed from both groups of schools reported an incidence of corporal punishment occurring in the last academic year. While perceptions of the frequency of corporal punishment was reported in the qualitative interviews to be lower in positive deviant schools, the difference in the use of corporal punishment was not statistically significant in the quantitative analysis. Parents reported negative consequences of corporal punishment use, such as absenteeism, learning difficulties and a decrease in student motivation, all linked to students’ fear of teachers.

Students experienced less physical bullying in positive deviant schools. Physical abuse between students is 43 percentage points less likely to be reported in positive

deviant schools. Representatives of the PTC were also less likely to report that cases of violence, bullying or harassment were significant problems in their school.

Positive deviant schools have stronger systems to combat physical forms of school-based violence, sometimes engaging the broader school community.

The more effective handling of incidences of violence by school administration may contribute to the lower prevalence of physical abuse between students. Qualitative findings suggest that positive deviant schools are more likely to have systems in place to properly monitor and respond to issues of school-based violence. Some examples of practices in two positive deviant schools include deploying a school-based counselling team or staff member to handle issues of violence, using the student governance body to report issues of violence through written or verbal reports, and discouraging bullying by indicating that students with repeated violent behaviour could be expelled or transferred to other schools.

Families and PTCs are more engaged in issues of school safety in positive deviant schools. For example, qualitative findings indicate that in some schools, caregivers are engaged in the reconciliation process for cases of student bullying or other negative behaviours. In another positive deviant school, caregivers reported teachers checking in with students at boarding facilities at night and communities organizing bicycle rounds on the road to protect children travelling alone to and from school.



Box 2

Teacher and head teacher motivation and satisfaction

Teachers at positive deviant schools were 19 percentage points more likely to be reported as motivated to perform their jobs than teachers at comparison schools. Additionally, head teachers were more satisfied with their working conditions, and were more likely to recommend their school as a positive place to work. School staff well-being is strongly linked to student well-being and therefore to learning (Jennings and Greenberg, 2009; Jennings, 2016; Schonert-Reichl, 2017). Higher rates of staff well-being may support positive deviant schools to provide teachers and students with positive and effective learning environments.

However, specific practices supporting motivation were not evident from the data. Finding the proper levers to influence teacher motivation is often highly complex and context-specific (Martin, 2018). Further research is needed to explore mechanisms and incentives to improve teacher motivation in Zambia.



3.4 Community engagement



Positive deviant schools have richer, more dynamic and more diverse channels of engagement with students' families, the PTC and the broader community. Specifically, the positive practices of these schools include:

- Actively involving PTCs in school decision-making and efforts to reduce student absenteeism
- Collaborating with families more frequently and making engagement opportunities more accessible
- Engaging the broader community to support vulnerable students and learners who are falling behind

3.4.1 Actively involving PTCs in school decision-making and efforts to reduce student absenteeism

In Zambia, the role of the PTC, previously referred to as the Parent-Teacher Association (PTA), is to regularly convene meetings with the school's parent community to discuss concerns and address challenges.¹⁰

On average, positive deviant schools have more active PTCs with a greater sense of the school's needs and challenges. On average, PTCs at positive deviant schools were more active, with comparison schools being 8 percentage points more likely to have not held a single PTC meeting in the previous school year.

¹⁰ All schools surveyed had a functional PTC.

PTC members in several positive deviant schools often go to the school to visit teachers, check the progress of ongoing projects and engage with learners. The PTCs at positive deviant schools also tended to have strong relationships with various actors: the head teacher, families and the DEO. Such a broad coalition allowed PTCs to be more aware of and responsive to school issues.



“ A lot of parents are committed to attend [PTC] meetings compared to other schools. This school is organized and that is why we attend the meetings because even the children(s) performance is good. ”

– Parent of a student at a positive deviant school

PTCs dedicate more time to infrastructure projects and fundraising. PTCs at positive deviant schools were 19 percentage points more likely than comparison schools to engage in fundraising to support school management. Such fundraising may bring additional resources to positive deviant schools that could be allocated to learning. For example, a PTC at one positive deviant school contributed to the construction of a classroom block, latrines, accommodation for teachers and a school garden.

Promoting access and participation is a key focus of PTCs at positive deviant schools. On average, PTC representatives at positive deviant schools were 24 percentage points less likely to strongly believe the PTC could positively influence student learning outcomes, compared to PTC representatives at comparison schools.¹¹ This may explain greater efforts by PTCs in positive deviant schools to engage in initiatives to reduce learner absenteeism. For example, one positive deviant school’s PTC regularly conducted awareness-raising sessions on the importance of education, with aims to reduce child labour in seasonal farming activities, a major cause of student absenteeism in Zambia (OECD and Zambia, MoGE, 2017). The role of this PTC was critical in reaching out to families that were further away from the school’s campus and or families that tended to undervalue the benefits of education.

“ There are some children who sometimes leave the school to go to their parents. We call these meetings to try and encourage the parents to continue supporting their child regardless of the performance. We sometimes notice the performance of our children, and we encourage the parents to engage the teachers who will in turn find out if the child is a slow learner or not so that they know how to handle that child. ”

– PTC representative at a positive deviant school

¹¹ Although not statistically significant, it is worth noting that PTCs at positive deviant schools were 8 percentage points less likely to report that they had taken actions within the last academic year to support student learning directly.

3.4.2 Collaborating with families more frequently and making engagement opportunities more accessible

Positive deviant schools are in contact more with families regarding students’ learning, performance and behaviours. On average, teachers are 5 percentage points more likely to inform caregivers of how their children are doing in school. Such communication with families is focused on discussing the challenges children face and their potential solutions. One positive deviant school was able to reduce the risk of student dropout by discussing with caregivers how to share the financial costs of learners’ learning materials and other school-related costs.

Measures are also taken to reduce the burden on families to engage in their children’s learning. Positive deviant schools use engagement strategies that reduce participation costs for caregivers. For example, positive deviant schools are 21 percentage points less likely to conduct in-person meetings with individual caregivers at school and 8 percentage points less likely to hold ‘open day’ meetings, where all caregivers are invited to the school to meet with teachers and discuss learner results. This may suggest that in-person and

open day meetings held on school campuses are not the most accessible channel of communication with families, who may need to consider transportation and absence from work. Instead, qualitative findings suggest that positive deviant schools use more accessible and less time-intensive avenues for caregivers to engage, such as through home visits (shifting the responsibility of communication from families to school staff). Some positive deviant schools also ensure that they communicate verbally with caregivers as much as possible due to high illiteracy rates.

Caregivers at positive deviant schools also report regularly being invited to school events and activities, such as community awareness campaigns organized by the PTC. One positive deviant school incentivized regular contact with families by requiring caregivers to come to school in person to obtain their children’s examination results, highlighting the diversity of practices for familial engagement that exist in positive deviant schools.

Examples demonstrating the diversity of ways in which positive deviant schools engaged with caregivers are shown in **Table 3**.

Table 3: Cited examples of parental participation in positive deviant school activities and management

| Activities to support student health and safety | Activities to engage with school management and staff | Activities to promote positive student behaviours and habits |
|-------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|
| Supporting school feeding programmes | Attending and observing selected classes | Supporting homework and checking children’s workbooks |
| Improving school safety, e.g., escorting children to school | Visiting new teachers to make them feel welcome | Facilitating reconciliation for student misbehaviour |
| Organizing daily cleaning of school facilities | Participating in school management decision-making | Leading non-academic after-school programmes or classes |

While the home conditions of students did not substantially differ, caregivers in positive deviant schools were less likely to allow children to miss school for work opportunities. Teachers at positive deviant schools were less likely to cite families taking children out of school for work as a major barrier to learning. While 61.7 per cent of teachers in comparison schools reported that caregivers allowing children to miss school for work opportunities was a significant hindrance to their ability to teach effectively, only 50.8 per cent of teachers in positive deviant schools reported the same. This could be driven by a greater awareness of the value of education in positive deviant school communities, potentially linked to the PTC awareness-building activities.

3.4.3 Engaging the broader community to support vulnerable students and learners falling behind

Some positive deviant schools benefit from deeper engagement with other community actors, particularly local leadership. Outside the relationship between schools and student families, some positive deviant schools are also supported by other community members, such as religious groups and village leaders, who play a central role in promoting school enrolment and attendance. For example, in some positive deviant schools, such community members act as liaisons between schools and the wider community regarding messaging on the importance of education or details on upcoming parent meetings. Some positive deviant schools also regularly invite local leaders to PTC meetings to discuss attendance issues.

Support from community members is often responsive to the specific needs of the local student population, with specific attention paid to students at risk of failing classes or dropping out. In one positive deviant school, elders from the community visited individual struggling students at their homes and supported them with their homework, while in another, a community member provided free uniforms to vulnerable students. Similarly, in one positive deviant school located in a rural area, local churches are accommodating students who live far away to enhance student attendance and decrease the risk of dropout due to socioeconomic and climate factors.

“

Elders of the church like New Apostolic church, the Roman Catholic church also helps. They help by accommodating some pupils because they are from villages which are 15 kilometres away, like grade 10s and 11s. Some (...) at the Pentecostal church. Instead of us parents giving them money for renting, they accommodated for free and it's great help. ”

– PTC representative from a positive deviant school.





3.5 Decentralized administration



Positive deviant schools tend to have more productive and collaborative relationships with decentralized administration. Specifically, differences in how positive deviant schools interact with DEOs include the following:

- Curating targeted support from DEOs, often for the professional development of teachers and senior staff
- Expanding collaboration with decentralized administration to include the broader school community

While Zambia's MoE is responsible for development and implementation of national policies, District Education Offices (DEOs) are the main liaison between MoE and schools and are responsible for overseeing educational policies in their respective districts. The DMS research explored the relationships of schools with DEOs, which are staffed by specialized officers who carry out specific roles:

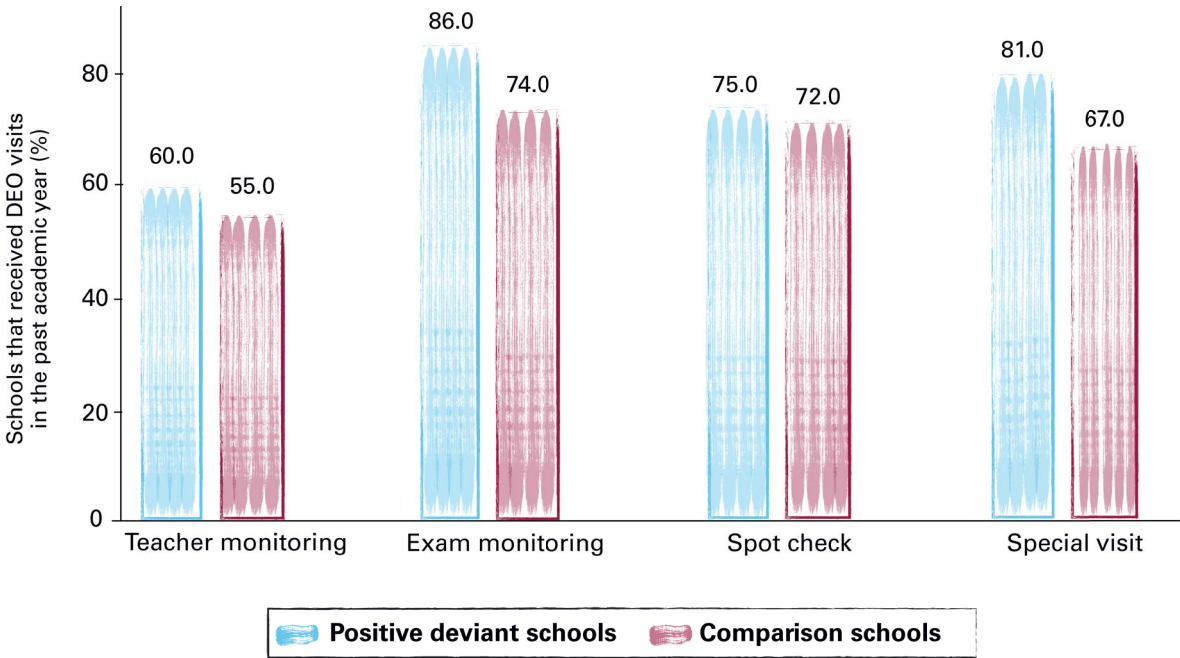
1. The District Education Board Secretary (DEBS), responsible for managing and coordinating all activities of the DEO
2. The District Education Standards Officer (DESO), responsible for ensuring schools are maintaining the standards set by MoE
3. The District Resource Centre Coordinator (DRCC), responsible for managing and coordinating the activities of the District Resource Centre, a repository of educational resources such as textbooks and other teaching materials (Walter, 2018)

While the quantity of interactions between schools and decentralized administration was similar between positive deviant and comparison schools, the quality of these interactions was higher in positive deviant schools. On average, both positive deviant and comparison schools received about two inspection visits from the DESO during the academic year. **Teachers at positive deviant schools were more likely to indicate that feedback from a DESO classroom visit had helped to improve their teaching.** While 54.7 per cent of teachers at positive deviant schools strongly agreed that DESO visits helped improve their teaching, only 42.6 per cent of teachers at comparison schools reported the same. This suggests that DESOs of positive deviant schools focus more on supporting teachers' pedagogical practices. In a small number of positive deviant schools, qualitative findings indicate more positive and richer cooperation and communication with the DEO. This includes, for instance, detailed explanations of new education policies to school staff.

On average, positive deviant schools receive more specialized visits from decentralized administration. Positive deviant schools were 12 percentage points more likely to receive an exam monitoring inspection and 14 percentage points more likely to receive a more specialized visit, such as to provide support and monitor school feeding programmes, infrastructure projects, school safety protocols or girls' education programmes (see **Figure 7**).

3.5.1 Curating targeted support from DEOs, often for the professional development of teachers and senior staff

Figure 7: Percentage of schools that received DEO visits in the past academic year, by visit type



Source: Authors’ calculations based on quantitative data collected.
 Note: Differences between the percentage of schools that received teacher monitoring and spot check visits from DEOs in the past academic year between positive deviant and comparison schools were not statistically significant.

Differences in the types of decentralized administration visits could also suggest that, when directly serving teachers, DEO officials are most helpful to schools when supporting more specialized tasks that may fall outside the day-to-day operations of school staff.

Some positive deviant schools also reported that their cooperation with the DRCC went beyond just management and delivery of resources. For instance, in one positive deviant school, the head teacher reported that the DRCC and the school jointly developed a twenty-question assessment to evaluate learners’ skills. Results were regularly shared with the DRCC office, which would follow up to address learning challenges highlighted by these results. Overall, the findings for positive deviant and comparison schools related to DRCC practices were similar.

3.5.2 Expanding the collaboration with decentralized administration to include the broader school community

DEBs are more likely to have direct communication channels with the wider communities of positive deviant schools, according to qualitative data. Instead of only maintaining the bilateral relationship between decentralized administration and the school itself, the families, PTCs and/or the community also tend to form direct relationships with the DEBSs. In one positive deviant school, the PTC reported organizing several meetings with the DEBS to address specific challenges, resulting in the school receiving more adequate support. More dynamic collaboration between the DEBS, the school and the broader community could be facilitating greater engagement among families in school issues and ensures accountability on behalf of school management.



4. Summary of results



Summary of results

Table 4 summarizes the different positive deviant behaviours and practices identified during **Stage 3** of DMS research.

Table 4: Behaviours and practices of positive deviant schools in Zambia

| Thematic domain | Results | Positive deviant behaviours and practices |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| School leadership and management | Stronger focus on improving teaching skills | <ul style="list-style-type: none"> Head teachers in positive deviant schools are more likely to support teachers' pedagogical skills. Head teachers in positive deviant schools view their role as that of an instructional leader and have less need for further training in administrative management. Teacher performance monitoring is more frequent, linked to learner results and reported to be particularly effective in positive deviant schools. |
| | Strategic teaching assignments | <ul style="list-style-type: none"> Positive deviant schools consider more factors than just teacher preference when making decisions on teaching assignments. Teaching assignments in positive deviant schools allocate the most experienced and competent teachers to foundational learning and examination/transitional grades. |
| | Closer monitoring and promotion of student and teacher attendance, and effective use of instructional time by teachers | <ul style="list-style-type: none"> Positive deviant schools are more systematic in ensuring that instructional time is respected, using different accountability strategies to ensure that teachers are present and teaching while in class. Positive deviant schools practice stricter control and management of student attendance, often engaging families. |

| Thematic domain | Results | Positive deviant behaviours and practices |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| School leadership and management | Open and transparent communication and decision-making | <ul style="list-style-type: none"> ■ Positive deviant schools ensure that different stakeholders are included in their communication streams and decision-making processes. ■ Positive deviant schools ensure administrative processes, such as budget management, are both transparent and efficient. ■ Positive deviant schools are more likely to have a SIP in place. |
| Pedagogical practices | Balance between teacher- and student-oriented learning activities | <ul style="list-style-type: none"> ■ Classes in positive deviant schools dedicate more time to engaging learning activities, allowing students to apply new knowledge through practice. ■ In positive deviant schools, student-oriented learning activities are more likely to be prefaced with teacher-oriented instruction. |
| | Dedicating more time and resources to supporting learning for all students, including those who are falling behind | <ul style="list-style-type: none"> ■ Teachers at positive deviant schools more frequently provide additional support to learners who have fallen behind in class. ■ Positive deviant schools also help struggling students outside the classroom, e.g., through extra classes and reading programmes. ■ Teachers in positive deviant schools place greater importance on ensuring that every student is learning rather than adhering to the pace of curriculum. ■ Decision-making regarding remedial supports in positive deviant schools is more systematized, sometimes also engaging learners' families when students are falling behind. ■ Teachers at positive deviant schools employ greater mitigation strategies to overcome shortcomings in teaching and learning materials. |
| | Higher confidence in lesson preparation and subject-matter knowledge | <ul style="list-style-type: none"> ■ Teachers' confidence in subject-matter knowledge is higher in positive deviant schools. ■ Teachers at positive deviant schools report that they are more comfortable with and skilled in lesson planning. |

| Thematic domain | Results | Positive deviant behaviours and practices |
|-----------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| School climate | More opportunities for student consultation | <ul style="list-style-type: none"> ■ Positive deviant schools benefit from more positive relationships between students and teachers. ■ Students in positive deviant schools have both direct and indirect opportunities to express their opinions. |
| | Systems in place for monitoring and combating issues of violence | <ul style="list-style-type: none"> ■ Positive deviant schools have a lower prevalence of physical violence between students. ■ Positive deviant schools have systems in place to combat physical forms of school-based violence, sometimes engaging the broader school community. |
| Community engagement | More active PTCs, focused on access and participation | <ul style="list-style-type: none"> ■ Positive deviant schools have more active PTCs with a greater sense of the school's needs and challenges. ■ Parental participation in PTC activities is higher in positive deviant schools, and the relationship between families and the PTC structure is reported as positive. ■ The role of PTCs at positive deviant schools is more focused on promoting access and participation than learning. |
| | More frequent and dynamic communication with caregivers | <ul style="list-style-type: none"> ■ Positive deviant schools are more frequently in contact with families regarding students' learning and behaviours and are more frequently invited to school activities and events. ■ Positive deviant schools take measures to reduce the burden on families to engage in their children's learning. |
| | Stronger engagement with the broader community | <ul style="list-style-type: none"> ■ Positive deviant schools benefit from engagement with other community actors, particularly local leadership. ■ Support from community members is often more tailored to the specific needs of the local student population. |

| Thematic domain | Results | Positive deviant behaviours and practices |
|------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Decentralized administration | Higher quality and specialized supports from the DEO | <ul style="list-style-type: none"> ■ Teachers at positive deviant schools were more likely to indicate that feedback received from the DEO helped improve their teaching. ■ Positive deviant schools receive more exam monitoring and other specialized visits from decentralized administration. ■ Some positive deviant schools also reported positive cooperation and communication with the DRCC. |
| | Multi-stakeholder engagement with the DEO | <ul style="list-style-type: none"> ■ DEBS are more likely to have direct communication channels with a wider network of actors in positive deviant schools. |



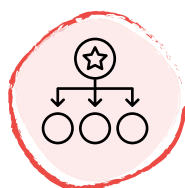


5. Conclusion



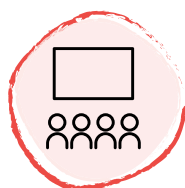
Conclusion

The DMS research reveals numerous differences in the practices and behaviours of positive deviant schools in Zambia.



School leadership and management drives many differences between positive deviant and comparison schools, particularly as it pertains to instructional leadership and decision-making.

Head teachers in these schools act more as instructional leaders, opposed to prioritizing more administrative functions, and more systematically promote regular teacher and student attendance. Stronger teachers are strategically allocated to early grades, crucial for foundational learning, and grades that face examinations and/or serve as transitions to the next level of schooling. Head teachers also tend to promote more transparent communication on school-related issues with teachers and families as it pertains to the school budget and student matters.



The pedagogical practices of positive deviant and comparison schools also differ, with more resources dedicated to equitable learning for all and a greater balance of teacher-oriented and student-oriented instruction in the classroom.

Class instruction in positive deviant schools tends to strike a balance between teacher-oriented and student-oriented learning activities, with classes usually beginning with teacher-led instruction on subject-matter content before students engage in some applicative activity, such as a practice problem or an experiment.

Teachers in positive deviant schools also place greater emphasis on ensuring that all students are learning, rather than prioritizing adherence to curricular expectations or timely lesson completion. Positive deviant schools more frequently and more systematically support struggling students with remedial learning programmes during and outside traditional instructional time. The teacher profile also is slightly different between the two subgroups of schools, with teachers in positive deviant schools being more confident in their subject-matter knowledge and lesson-planning abilities.



Positive deviant schools are characterized by safer learning environments, supported by stronger student-teacher relationships and multiple avenues for student expression.

Teachers and students in positive deviant schools are reported to have more positive relationships, and both teachers and head teachers report higher rates of motivation and workplace satisfaction. Both direct and indirect channels for student consultation are more prominent in positive deviant settings. Positive deviant schools experience lower rates of physical violence between students, and, although their relative rate of corporal punishment compared to comparison schools is unclear, are more likely to have systematized practices for monitoring and addressing issues of violence and safety. Caregivers and other community members are often engaged in efforts to maintain school safety.



Positive deviant schools benefit from richer and deeper connections with families and the wider community. The PTC plays a major role in convening various actors within the community and connecting them with school staff, and frequently supports issues of student access and participation by promoting the value of education and regular school attendance across the community. Positive deviant schools provide caregivers with frequent and accessible channels of communication, allowing them to regularly engage in matters related to individual students, but also in broader school matters. This study also illuminated the value of community actors outside the traditional bilateral school-family relationship, such as local leadership and religious groups, that can offer tailored support for struggling students.



Stage 4 of the DMS research in Zambia 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 Zambia. This stage of the DMS research will result in a co-created scaling plan that can be embedded within existing national strategies and support MoE and relevant education actors in Zambia to take the results from the research forward.



While there are fewer differences in the engagement of decentralized administration with positive deviant schools compared to comparison schools, certain behaviours did emerge. Commonly, the support offered by DEOs was more targeted to the specific needs of schools. Positive deviant schools also benefited from richer, more dynamic relationships with DEOs, with greater engagement with the broader school community.





Appendices



Appendix 1: Selection of positive deviant and comparison schools

Choosing performance indicators

A composite score of average school performance on mathematics and English national grade 7 examinations from 2015–2020 was created to measure the performance of Zambian schools. This indicator was selected as the most appropriate indicator of learning outcomes since the grade 7 examination is the first census-level standardized measure of children’s learning in Zambia. The subjects of mathematics and English were selected to investigate foundational reading and numeracy, the critical skills children must learn in primary school to engage with more advanced learning and skills development. Stage 1 of the DMS research was able to demonstrate the strong correlation of these performance variables with elements of context and school inputs.

Zambia’s examination system is managed by the Examinations Council of Zambia (ECZ). For primary and secondary school education, the ECZ conducts public examinations for grades 7, 9 and 12. The grade 7 exam is administered at the end of seven years of primary education and is used for both certification and placement into grade 8, marking an important milestone in the academic careers of Zambian children. In 2020, average raw exam scores on national grade 7 examinations were 48.1 per cent in English and 48.6 per cent in mathematics.¹²

Sampling strategy

The selection of positive deviant schools and their comparison schools includes only public 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 and outliers were removed from the sample. In total, the selection included 4,118 schools out of 5,081 public schools with EMIS data.

Selection of positive deviant schools

A predictive model of school performance was estimated for each of the three contexts. The choice of independent variables in this predictive model is based on the strong 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 the number of DEBS visits or the frequency of meetings with families.

The predictive model includes the following context variables: overall percentage of repeating students, average age of students, percentage of female students, percentage of students sitting for exams, location (urban or rural) and region. The resource variables of the school are the age, status (permanent or temporary) and qualifications of teachers, pupil-teacher ratio, class size, pupil-classroom ratio, number of desks per pupil, proportion of grade receiving bursary subsidies, presence of a library and number of textbooks per pupil. See **Table 5** for further details.

Then, the predicted composite score for average grade 7 examination performance for a school was compared to the observed composite score for average grade 7 examination performance and the 20 schools with the largest difference between observed and predicted values in each context were classified as positive deviant schools.

¹² The average exam scores are represented as percentages (converted from a scale of 50–150) and all point estimates are weighted by the total number of exam takers. Calculations made by authors, representing an average of averages (average computed from school-level average exam scores).

Table 5: Predictive models of average national grade 7 examination scores, 2015–2020

| Variable | (1) Total | (2) Context A | (3) Context B | (4) Context C |
|------------------------------|------------|---------------|---------------|---------------|
| Urban | 7.263*** | 8.024*** | 14.619*** | -0.468 |
| % of student repeaters | -3.687 | 0.814 | -2.984 | -7.480 |
| Average student age | -1.922*** | 0.814 | -1.829*** | -2.299*** |
| % of female students | 2.008 | -0.953 | 3.050 | 2.769 |
| % of exam-takers | -3.479*** | -2.966*** | -5.342*** | -2.303*** |
| Average age of teacher | -0.116** | -0.166 | 0.007 | -0.218** |
| % of permanent teachers | -4.872 | -9.055 | -6.760* | 0.278 |
| % of teachers with a diploma | 3.541*** | 0.324 | 5.205*** | 3.785* |
| % of teachers with a degree | -1.458 | 7.150 | -1.912 | -4.918 |
| Pupil-teacher ratio | 0.000 | -0.042* | -0.016 | 0.031* |
| Students per class | -0.150*** | -0.153*** | -0.133*** | -0.148*** |
| Classrooms per 100 students | 0.296 | 1.835** | -0.169 | 0.004 |
| Desks per student | 3.289*** | 5.171** | 2.177 | 2.578 |
| % of students on bursary | 4.675 | 4.573 | -1.063 | 9.458 |
| Library | 1.486* | 3.288** | 1.967* | -5.348** |
| Textbooks per student | 1.020*** | 1.463** | 0.305 | 1.166** |
| Constant | 435.836*** | 440.757*** | 428.105*** | 440.026*** |
| | | | | |
| Observations | 17,089 | 3,706 | 6,987 | 6,396 |
| R-squared | 0.162 | 0.187 | 0.107 | 0.143 |

Source: Calculation of authors from Zambian EMIS database.

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

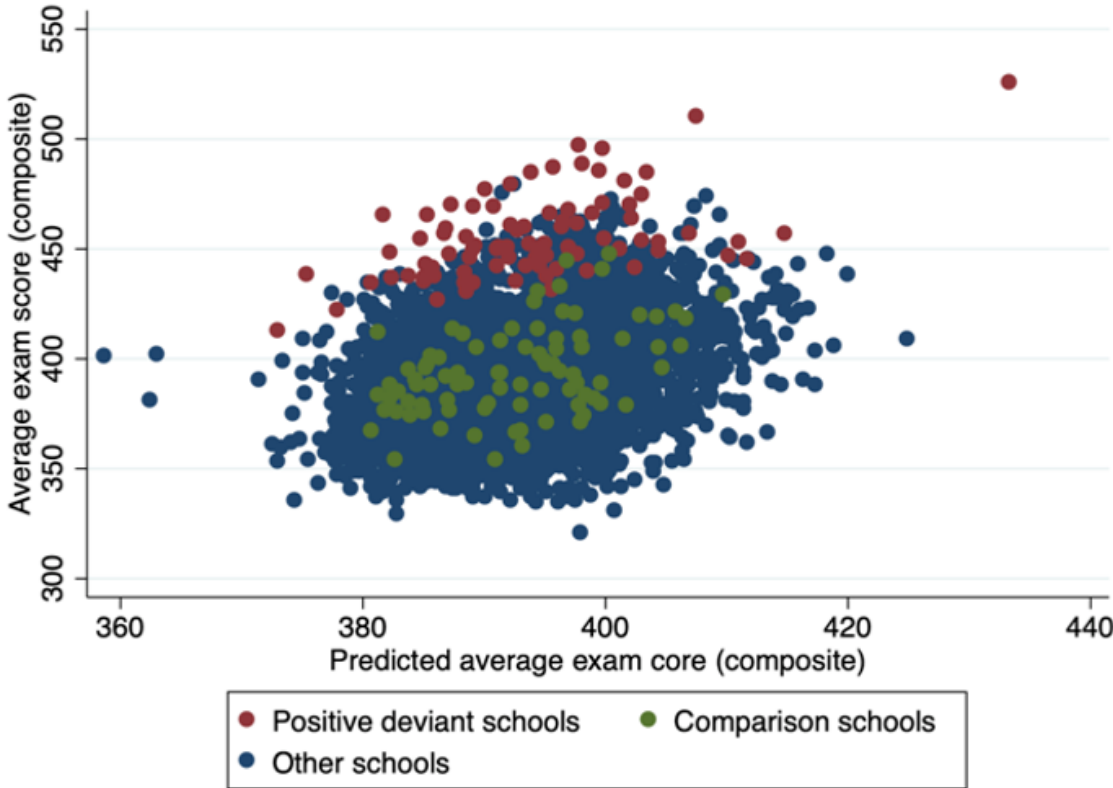
Selection of comparison schools

The final step in selecting the sample was to select the comparison schools. For this, potential comparison schools with composite scores of average school performance on mathematics and English national grade 7 examinations close to the values predicted by the predictive models were selected.¹³ This ensured that the comparison schools were

average-performing schools, neither better nor worse than expected. Then, a comparison school was selected for each positive deviant school. These comparison schools were located in the same district (or region if there was no viable comparison school in the same district) 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.

¹³ These are schools whose standardized residual is between -0.5 and +0.5.

Figure 8: Comparison of predicted versus observed average national grade 7 examination scores in Zambia’s public primary schools, 2015–2020



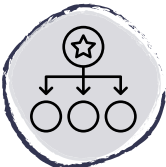
Source: Authors’ calculations based on data from ECZ and EMIS, MoE Zambia, 2015–2020.



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:

the impact of the principal on school performance includes their management of relations with the community (Mzabalazo Advisory Services, 2016).



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,



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.



Appendix 3: Additional details on qualitative methodology

Qualitative subsampling strategy

A subsample of 18 schools for the qualitative survey was selected from the quantitative sample of 120 schools. Of these 18 schools, nine were positive deviant schools and the others were comparison schools. Schools were selected to ensure an even spread across the three defined contexts (six schools in Context A; six schools in Context B; and six schools in Context C). As with the quantitative survey, each positive deviant school was associated with a comparison school similar in context. Several indicators were used when selecting schools to participate in the qualitative data collection and to ensure comparability across school pairs. As previously mentioned, qualitative data-collection tools were co-created with MoE and other national stakeholders to ensure appropriately contextualized formulation of questions aligned with Zambia's priorities.

Coding and analysis

To facilitate the coding process and ensure consistency among researchers, the qualitative data was coded using NVivo analysis software. Deductive and inductive coding 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, sub-level codes that emerged from the data were added. Although data were coded by school, the researcher did not know which schools were 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. A summary document was prepared for each school providing information on the challenges, practices and general conditions of the school, as described by the different respondents.



Appendix 4: Additional information on classroom observations

Differences in pedagogical practices could be one of the factors explaining the better performance of positive deviant schools. While the questionnaires for teachers and head teachers contain many questions about instructional practices, lessons were recorded and analysed in each of the 120 schools included in the quantitative sample to better understand differences in pedagogical practices between positive deviant and comparison schools. Three forty-minute class observation videos were recorded: one for a grade 2 class, one for a grade 4 class and one for a grade 7 class. These classroom observation videos were then coded according to an analysis framework developed

for the purposes of the survey, adapted from different existing classroom observation tools, including the 'Teach' tool developed by the World Bank. Inter-coder reliability was established before classroom observation coding took place.

The classroom observation analysis framework analyses five areas: learning activities, instructional practices, socioemotional skills, general classroom culture and use of learning resources. Statistically significant results of the classroom observations are presented in **Appendix 5**.



Appendix 5: Quantitative data results

Table 6: Statistically significant quantitative results from head teacher questionnaire (n = 118)

| Variable | Total average | Positive deviant average | Comparison average | Difference | P-value |
|--------------------------------------------------------------------------------|---------------|--------------------------|--------------------|------------|---------|
| Head teacher's occupational status is confirmed | 0.61 | 0.69 | 0.53 | 0.17 | 0.06 |
| Which grades do you teach? | | | | | |
| Pre-primary | 0.04 | 0.08 | 0.00 | 0.07 | 0.09 |
| Grade 9 | 0.47 | 0.60 | 0.32 | 0.28 | 0.02 |
| Have you had any formal training in school management? | 0.45 | 0.56 | 0.34 | -0.22 | 0.01 |
| Which subject(s) do you teach at this school? | | | | | |
| English | 0.48 | 0.38 | 0.59 | -0.24 | 0.04 |
| Mathematics | 0.58 | 0.43 | 0.76 | -0.34 | 0.00 |
| Have you had any formal training in school management? | 0.45 | 0.56 | 0.34 | -0.22 | 0.01 |
| Which sections/grades does this school have? | | | | | |
| Pre-primary | 0.31 | 0.24 | 0.39 | -0.15 | 0.08 |
| Grade 9 | 0.51 | 0.59 | 0.42 | 0.17 | 0.06 |
| Which programme(s) has your school been involved in? | | | | | |
| Supporting Teacher Education for Early Learning | 0.06 | 0.12 | 0.00 | 0.11 | 0.05 |
| How do you decide which teachers to observe in the classroom in a term? | | | | | |
| I carry out random observation visits | 0.45 | 0.37 | 0.53 | -0.15 | 0.10 |

| Variable | Total average | Positive deviant average | Comparison average | Difference | P-value |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------|--------------------|------------|---------|
| Please indicate how frequently you, your deputy head teacher or a senior teacher engaged in the following activities in the past 2 weeks* | | | | | |
| Actions to ensure teachers are improving their teaching skills | 2.47 | 2.27 | 2.68 | -0.41 | 0.04 |
| What do you do when a teacher arrives late for work? | | | | | |
| Charge the teacher | 0.08 | 0.12 | 0.03 | 0.08 | 0.09 |
| How do you deal with learner lateness? | | | | | |
| Counsel the learners | 0.66 | 0.56 | 0.76 | -0.20 | 0.02 |
| Talk to the learners' parents | 0.42 | 0.51 | 0.32 | 0.19 | 0.04 |
| Is your school's capacity to provide instruction hindered by any of the following issues?* | | | | | |
| A lack of assisting (non-teaching) staff | 1.82 | 2.00 | 1.64 | 0.36 | 0.08 |
| A lack of educational materials (e.g., textbooks, IT equipment, library or laboratory material) | 3.05 | 3.31 | 2.80 | 0.51 | 0.01 |
| Inadequate or poor-quality educational materials (e.g., textbooks, IT equipment, library or laboratory material) | 2.93 | 3.29 | 2.80 | 0.36 | 0.08 |
| What factors influence your assessment of a teacher's performance? | | | | | |
| Assessment of learners' knowledge | 0.27 | 0.36 | 0.19 | 0.17 | 0.10 |
| To what extent do you agree or disagree with the following statements on a scale of 1 (strongly disagree) to 5 (strongly agree)?* | | | | | |
| Teachers at my school are motivated to perform their jobs | 4.11 | 4.20 | 4.02 | 0.19 | 0.08 |
| How involved was the School Management Committee with activities in your school last year?* | 2.75 | 2.65 | 2.85 | -0.20 | 0.03 |
| What other channels do you use to engage parents? | | | | | |
| In-person meetings with individual parents | 0.24 | 0.13 | 0.34 | -0.21 | 0.01 |
| What types of violence incidents occurred in your school? | | | | | |
| A student physically abused another student | 0.48 | 0.29 | 0.69 | -0.43 | 0.03 |
| How active is the student governance body at your school?* | 2.50 | 2.63 | 2.36 | 0.28 | 0.10 |
| To what extent do you agree or disagree with the following statements on a scale of 1 (strongly disagree) to 5 (strongly agree)?* | | | | | |
| I would recommend my school as a good place to work | 4.28 | 4.39 | 4.17 | 0.22 | 0.05 |
| If you could access training to help you perform your job better, what are up to three areas in which you require the most training? | | | | | |
| Academic achievement | 0.42 | 0.49 | 0.34 | 0.15 | 0.08 |
| Office and financial management | 0.42 | 0.34 | 0.49 | -0.15 | 0.09 |
| Promoting collaboration among teachers (e.g., joint lesson planning, teachers observing each other, etc.) | 0.05 | 0.02 | 0.08 | -0.07 | 0.10 |

Table 7: Statistically significant quantitative results from teacher questionnaire (n = 352)

| Variable | Total average | Positive deviant average | Comparison average | Difference | P-value |
|------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------|--------------------|------------|---------|
| How many School Programme of In-service Training for the Term (SPRINT) activities did you attend in the last academic year? | 6.09 | 5.53 | 6.63 | -1.14 | 0.08 |
| What topics were covered in the SPRINT activities you attended? | | | | | |
| Gender-responsive pedagogy | 0.11 | 0.07 | 0.14 | -0.07 | 0.04 |
| Please indicate the degree to which you need more training in the following topics to successfully do your job* | | | | | |
| Subject-matter knowledge | 3.16 | 3.08 | 3.25 | -0.17 | 0.10 |
| Gender-responsive pedagogy | 2.87 | 2.72 | 3.01 | -0.29 | 0.01 |
| Teaching students with special needs | 3.53 | 3.41 | 3.66 | -0.24 | 0.01 |
| Which grades are you teaching in this school? | | | | | |
| ECE | 0.04 | 0.02 | 0.06 | -0.04 | 0.05 |
| Why were you absent in the last term? | | | | | |
| Attending to personal issues | 0.14 | 0.17 | 0.10 | 0.07 | 0.10 |
| If the English/literacy syllabus is not completed, why were you unable to complete the syllabus? | | | | | |
| Learners are slow to copy lessons from the board | 0.11 | 0.15 | 0.06 | 0.07 | 0.10 |
| Which subjects are challenging to prepare a lesson plan for? | | | | | |
| None | 0.22 | 0.27 | 0.18 | 0.09 | 0.08 |
| How often do you use the following teaching and assessment strategies?* | | | | | |
| I give extra support to learners who are not progressing well | 1.62 | 1.51 | 1.73 | -0.21 | 0.01 |
| To what extent do the following affect your ability to effectively teach learners?* | | | | | |
| Guardians taking children out of school for work (e.g., seasonal farm work) | 3.24 | 3.14 | 3.34 | -0.20 | 0.10 |
| To what extent do you agree or disagree with the following statements on a scale of 1 (strongly disagree) to 5 (strongly agree)?* | | | | | |
| In this school, teachers and learners usually get on well with each other | 4.29 | 4.37 | 4.22 | 0.15 | 0.06 |
| The DESO visits helped me improve my teaching | 4.34 | 4.45 | 4.23 | 0.22 | 0.07 |
| Do you hold open day meetings with parents of your learners to talk about learner results? | 0.15 | 0.11 | 0.19 | -0.08 | 0.06 |

Table 8: Statistically significant quantitative results from classroom observations (n = 301)

| Variable | Total average | Positive deviant average | Comparison average | Difference | P-value |
|------------------------------------------------------------------------------------------|---------------|--------------------------|--------------------|------------|---------|
| What worked well in this lesson? | | | | | |
| The lesson was completed in time | 0.26 | 0.22 | 0.30 | -0.08 | 0.08 |
| What didn't work as well in this lesson? | | | | | |
| The lesson exceeded the allocated time or could not be finished | 0.06 | 0.08 | 0.03 | 0.05 | 0.07 |
| What steps or actions, if any, did you take to prepare for this lesson? | | | | | |
| Discussed or got input/ feedback from a colleague for the lesson | 0.06 | 0.02 | 0.09 | -0.07 | 0.00 |
| Learning activities taking place in second snapshot | | | | | |
| Teacher reading out loud | 0.08 | 0.04 | 0.11 | -0.07 | 0.05 |
| Hands-on experiment/ demonstration | 0.04 | 0.06 | 0.02 | 0.04 | 0.09 |
| Learning activities taking place in third snapshot | | | | | |
| Class completing practice problems | 0.10 | 0.14 | 0.06 | 0.07 | 0.05 |
| Frequency of learning activities across all lesson snapshots | | | | | |
| Teacher reading out loud | 0.18 | 0.13 | 0.23 | -0.10 | 0.06 |
| Students reading silently | 0.01 | 0.00 | 0.02 | -0.02 | 0.10 |
| Students actively listening to the teacher to solve a specific assignment | 0.49 | 0.59 | 0.38 | 0.21 | 0.04 |
| Hands-on experiment/ demonstration | 0.10 | 0.13 | 0.06 | 0.08 | 0.05 |
| Learning activities not applicable to any lesson snapshots | | | | | |
| Teacher reading out loud | 0.82 | 0.86 | 0.78 | 0.08 | 0.07 |
| Students reading silently | 0.99 | 1.00 | 0.98 | 0.02 | 0.08 |
| Hands-on experiment/ demonstration | 0.90 | 0.86 | 0.94 | -0.07 | 0.05 |
| Proportion of students on task in second snapshot* | 2.66 | 2.59 | 2.73 | -0.15 | 0.07 |
| Students volunteer to participate in the classroom* | 3.09 | 2.99 | 3.21 | -0.22 | 0.04 |
| Teacher responds to students' needs* | 2.86 | 2.60 | 3.14 | -0.59 | 0.01 |
| Teacher does not exhibit gender bias and challenges gender stereotypes in the classroom* | 3.20 | 3.09 | 3.32 | -0.21 | 0.09 |
| Learning activities not applicable to any lesson snapshots | | | | | |
| Manipulatives | 0.11 | 0.06 | 0.16 | -0.10 | 0.04 |

Table 9: Statistically significant quantitative results from the PTC questionnaire (n = 118)

| Variable | Total average | Positive deviant average | Comparison average | Difference | P-value |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------|--------------------|------------|---------|
| PTA representative is female | 0.19 | 0.12 | 0.25 | -0.14 | 0.06 |
| If your child/children is/are enrolled in this school, which grade(s) are they in? | | | | | |
| Grade 3 | 0.28 | 0.37 | 0.19 | 0.18 | 0.05 |
| Who decides when to call general PTA/PTC meetings? | | | | | |
| Other individuals | 0.03 | 0.00 | 0.05 | -0.05 | 0.08 |
| How often were general PTA/PTC meetings held in the last school year (2022)? | | | | | |
| Never | 0.08 | 0.03 | 0.12 | -0.08 | 0.08 |
| What school management activities does the PTA/PTC (or do parents) at this school engage in? | | | | | |
| Fundraising | 0.48 | 0.58 | 0.39 | 0.19 | 0.04 |
| Does the school have a SIP? | 0.08 | 0.14 | 0.04 | 0.10 | 0.07 |
| To what extent do you agree or disagree with the following statements on a scale of 1 (strongly disagree) to 5 (strongly agree)?* | | | | | |
| The views and priorities of parents are well represented in the SIP | 4.38 | 4.24 | 4.54 | -0.29 | 0.09 |
| The PTA/PTC has the ability to influence learning outcomes | 3.91 | 3.75 | 4.07 | -0.32 | 0.09 |
| In your view, what were the significant problems in your school last year? | | | | | |
| Shortage or insufficiency of classrooms | 0.76 | 0.69 | 0.83 | -0.14 | 0.08 |
| Cases of violence/bullying | 0.03 | 0.00 | 0.05 | -0.05 | 0.08 |
| Which problems did the PTA/PTC (or parents) address or take action on in the last school year? | | | | | |
| Learner absenteeism | 0.25 | 0.32 | 0.19 | 0.14 | 0.09 |
| Do teachers inform parents of how their child is doing in school? | 0.97 | 1.00 | 0.95 | -0.05 | 0.08 |
| What, if any, services are available to parents at this school who may be struggling to keep their children in school or support their learning? | | | | | |
| School meals programme | 0.19 | 0.14 | 0.25 | -0.12 | 0.10 |

Table 10: Statistically significant quantitative results from DEBS questionnaire (n = 116)

| Variable | Total average | Positive deviant average | Comparison average | Difference | P-value |
|---------------------------------------------------------------------------------------------------------------------|---------------|--------------------------|--------------------|------------|---------|
| Was this school visited for an inspection in the last academic year (2022) for: | | | | | |
| Exam monitoring inspection | 0.20 | 0.26 | 0.14 | 0.12 | 0.09 |
| Special visits (including COVID preparedness) | 0.27 | 0.34 | 0.19 | 0.14 | 0.08 |
| Please rate the quality of teaching in this school from 1 (not at all satisfactory) to 5 (extremely satisfactory) * | 3.65 | 3.76 | 3.53 | 0.22 | 0.10 |
| What are the reasons for your rating of the quality of this school's leadership? | | | | | |
| SIP | 0.09 | 0.14 | 0.05 | 0.09 | 0.10 |
| Other | 0.18 | 0.24 | 0.12 | 0.12 | 0.09 |

Note: Designated variables (*) were based on an ordinal scale, in which data are arranged in a specific order in comparison to each other and assigned a unique rank. Therefore, the difference between such variables is not quantitative. An example of an ordinal variable in the DMS quantitative instruments is that the Likert scale questions asked head teachers to rate the extent to which they would agree that their teachers were motivated to perform their jobs well on a scale of 1 to 5. To detect statistically significant differences in the responses of positive deviant and comparison schools, quantitative values were assigned to variables and average 'scores' were calculated for both subsamples. Only ordinal variables with statistically significant differences in these average 'scores' between positive deviant and comparison schools are included in the report, unless otherwise stated.



References

References

- Abdul Latif Jameel Poverty Action Lab, 'Teaching at the Right Level to Improve Learning', Evidence to Policy Case Study, J-PAL, Cambridge, M.A., 2018.
- Armstrong, Thomas, *The Best Schools: How human development research should inform educational practice*, Association for Supervision and Curriculum Development, Alexandria, 2006.
- Bakuluma, Andrew and Linda Zuze, 'Africa Learning Together: Helping students to Catch-Up in Zambia', Africa Learning Together Knowledge Series no. 1, Association for the Development of Education in Africa, Abidjan, 2023.
- Bergen, Nicole and Ronald Labonté, "'Everything is Perfect, and We Have No Problems": Detecting and limiting social desirability bias in qualitative research', *Qualitative Health Research*, vol. 30, no. 5, 13 December 2022, pp. 783-792.
- Bas, Gokhan, 'Relation between Student Mental Health and Academic Achievement Revisited: A meta-analysis', ch. 2 in *Health and Academic Achievement: New findings*, IntechOpen, London, 2021, pp. 7-22.
- Denzin, Norman K. and Yvonna S. Lincoln, eds., *The SAGE Handbook of Qualitative Research*, 4th ed., SAGE Publications, Thousand Oaks, 2011.
- Elmore, Richard. F., 'Getting to Scale with Good Educational Practice', *Harvard Educational Review*, vol. 66, no. 1, Spring 1996, pp. 1-26.
- Jennings, Patricia A. 'CARE for Teachers: A mindfulness-based approach to promoting teachers' social and emotional competence and well-being', ch. 9 in *Handbook of Mindfulness in Education: Integrating theory and research into practice*, 1st ed., edited by Kimberly A. Schonert-Reichl and Robert W. Roeser, Springer, New York, 2016.
- Jennings, Patricia A. and Mark T. Greenberg, 'The Prosocial Classroom: Teacher social and emotional competence in relation to student and classroom outcomes', *Review of Educational Research*, vol. 79, no. 1, 1 March 2009, pp. 491-525.
- Kabir, Mabruk, 'Teachers for All: Improving primary school teacher deployment in Zambia', Innocenti Research Report Series, UNICEF Innocenti – Global Office of Research and Foresight, Florence, 2023.
- Martin, John, 'Putting the Spotlight on Teacher Performance', UNICEF Education Think Piece 4 on Teacher Performance, UNICEF Eastern and Southern Africa Regional Office, Nairobi, 2018.
- Mourshed, Mona, Marc Krawitz and Emma Dorn, *How to Improve Student Educational Outcomes: New insights from data analytics*, McKinsey & Company, London, 2017.
- Mzabalazo Advisory Services, *"We are the architects of our own destiny!": Study of positive deviant schools in Namibia, Zambia*, Ministry of Education, Arts and Culture, and UNICEF Namibia, Windhoek, 2016.
- Oba, Arisa, 'Catch Up Learning Programme Improving Foundational Learning in Zambia', United Nations Children's Fund Zambia, 27 June 2022, <<https://www.unicef.org/zambia/stories/catch-learning-programme-improving-foundational-learning-zambia>>, accessed 19 February 2024.
- Organisation for Economic Co-operation and Development and Zambia, Ministry of General Education, *Education in Zambia: Findings from Zambia's experience in PISA for Development*, MoGE, Lusaka, 2017.
- Prater, Mary A., *Teaching Students with High-Incidence Disabilities: Strategies for diverse classrooms*, SAGE Publications, Thousand Oaks, 2018.

- Schonert-Reichl, Kimberly A. 'Social and Emotional Learning and Teachers', *The Future of Children*, vol. 27, no. 1, January 2017, pp. 137–55.
- Snilstveit, Birte, et al., 'The Impact of Education Programmes on Learning and School Participation in Low- and Middle-income Countries: A systematic review summary report', Systematic Review Summary 7, International Initiative for Impact Evaluation, London, 2016.
- Syakalima, Douglas M., 'Zambia: Unprecedented teacher recruitment follows free education', *The Africa Report*, 8 April 2022.
- Thapa, Amrit, et al., 'A Review of School Climate Research', *Review of Educational Research*, vol. 83, no. 3, 1 September 2013, pp. 357–385.
- Twaweza East Africa, *Positive Deviance in Primary Education: Schools and teachers making an outstanding contribution to learning in Eastern Uganda*, Kampala, 2019.
- UNICEF Innocenti – Global Office of Research and Foresight, Ministry of Education Zambia and UNICEF Zambia, *Data Must Speak: Unpacking Factors Influencing School Performance in Zambia*, UNICEF Innocenti, Florence, 2023.
- United Nations Children's Fund Zambia, 'Improving Early Grade Reading and Numeracy through 'Catch-Up', a Remedial Learning Programme', Education Case Study, UNICEF Zambia, Lusaka, 2022.
- United Nations Educational, Scientific and Cultural Organization, *Zambia Education Policy Review: Paving the way for SDG 4 – Education 2030*, UNESCO, Paris, 2016.
- Walter, Torsten F., *State Management of Education Systems and Educational Performance: Evidence from a management survey at district education offices in Zambia*, International Growth Centre, London, 2018.
- Woolf, Penelope and Jane Digby, 'Student Wellbeing: An analysis of the evidence', Oxford Impact Study, Oxford University Press, Oxford, 2021.
- World Bank, *Learning Recovery to Acceleration: A global update on country efforts to improve learning and reduce inequalities*, Washington, D.C., 2023.
- World Bank et al., *The State of Global Learning Poverty: 2022 update*, World Bank, United Nations Educational, Scientific and Cultural Organization, United Nations Children's Fund, Foreign, Commonwealth, and Development Office, United States Agency for International Development and Bill & Melinda Gates Foundation, Washington D.C., Paris, New York, London and Seattle, 2022.
- World Health Organization, 'Mental Health and COVID-19: Early evidence of the pandemic's impact', Scientific Brief, WHO, Geneva, March 2022.
- Zambia, Ministry of General Education and Ministry of Higher Education, *Education and Skills Sector Plan 2017–2021*, MoGE and MoHE, Lusaka, 2017.

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For more information

UNICEF Innocenti – Global Office of Research and Foresight

Via degli Alfani, 58

50121, Florence, Italy

Tel: (+39) 055 20 330

Email: innocenti@unicef.org

Social media: @UNICEF Innocenti on Facebook, Instagram, LinkedIn, Twitter and YouTube

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