DATA DRIVEN DISTRICTS

Turning Data Into a National Driver for Learner Success

data
driven
districts
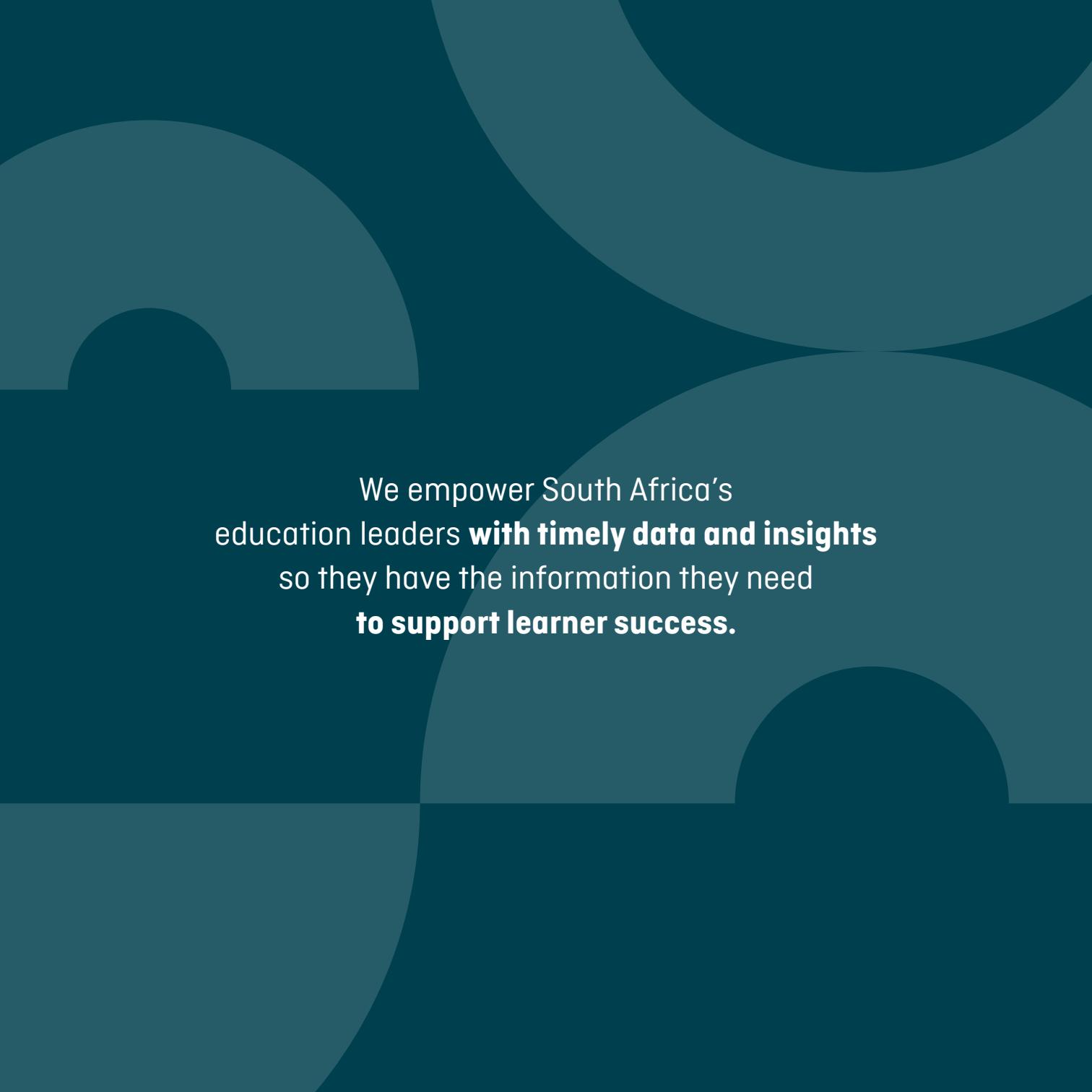
We empower South Africa's
education leaders **with timely data and insights**
so they have the information they need
to support learner success.

Foreword

Harnessing the power of data is essential to improving education in South Africa. The Data Driven Districts (DDD) programme is a key step in this journey, equipping education leaders with real data insights to manage learner outcomes.

As part of our commitment to strengthening the education system, we recognise the critical role of Information and Communication Technologies in enabling access to reliable data. By integrating platforms like SA-SAMS, LURITS, and DDD[1], we streamline information flows, ensuring decision-makers at all levels have the tools to drive meaningful change.

However, data alone is not enough – it must be analysed, interpreted, and applied effectively. Developing internal analytical capacity is vital to transforming data into actionable strategies that improve learning outcomes. Through data-driven monitoring and evaluation, we can assess interventions and refine our approach to better serve learners.

I encourage all stakeholders, both within the public education system and our partners, to embed data-informed decision-making in their daily practices. When used strategically, data has the power to strengthen education leadership, enrich teaching, and ultimately improve learner performance.

Let us embrace this opportunity to shape a future where every learner benefits from informed, evidence-based action.

Mr Hubert Mathanzima Mweli
Director-General, Department of Basic Education, Republic of South Africa

Note: 1. South African School Administration and Management System (SA-SAMS), Learner Unit Record Tracking System (LURITS), and Data Driven Districts (DDD)
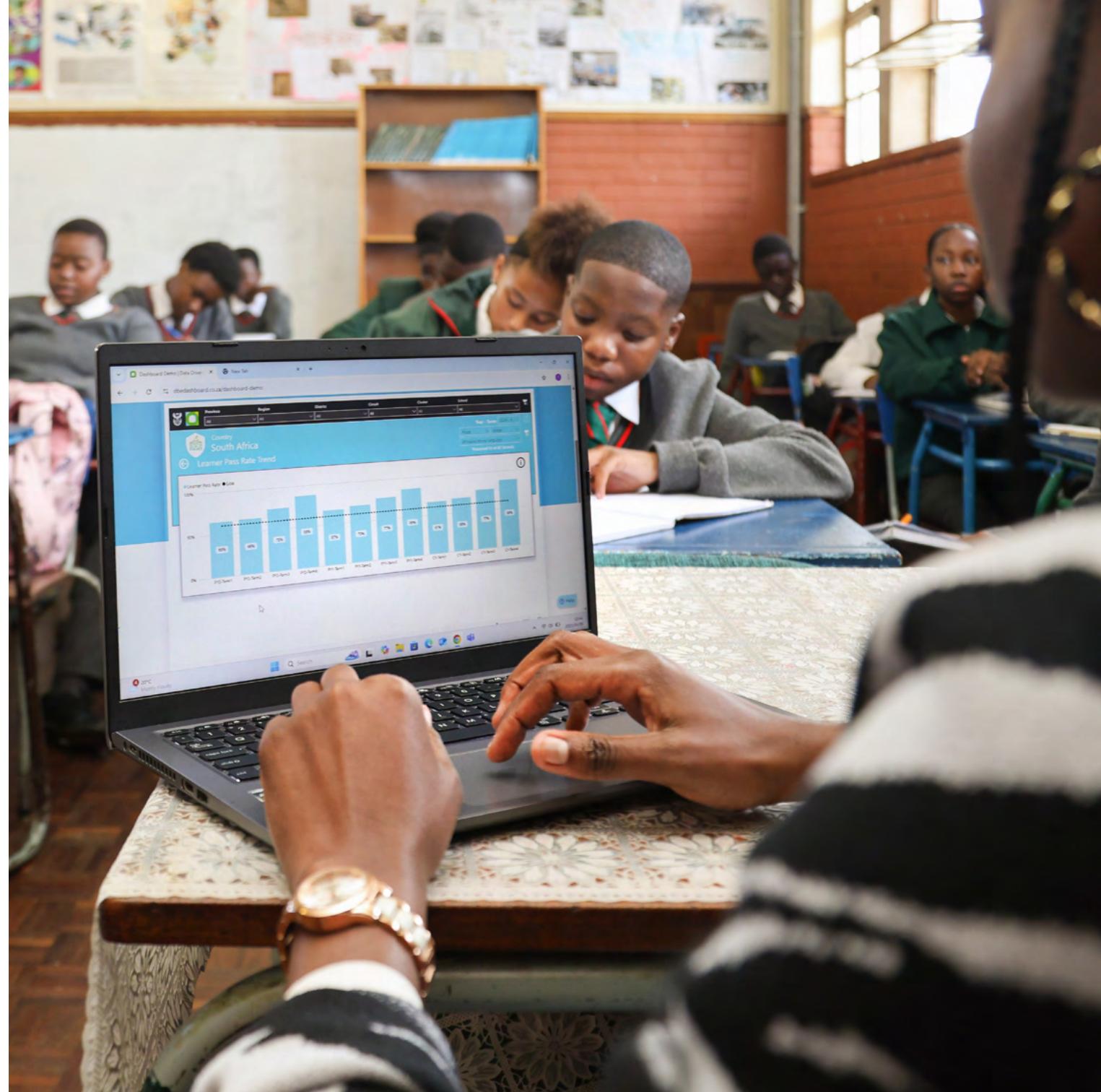
Table of contents

The business case for smart data systems

Competitive businesses run on data. No successful business operates without reliable, timely data. High-performing business leaders rely on external market trends, sales figures, financial reports, and customer insights to make informed decisions.

The most competitive market leaders monitor performance, assess risks, and adjust strategies in real time. Without data, business decisions become guesswork – leading to inefficiency, missed opportunities, and potential failure.

- ✓ **Investment firms** make trading decisions based on real-time market data, using targeted metrics to guide transactions.

- ✓ **Retailers** track inventory, purchase history, and customer behaviour to streamline supply chains and adjust pricing.

- ✓ **Telecom** providers analyse and forecast network demand to optimise bandwidth, prevent outages, and offer personalised data plans.

If businesses deliberately invest in data to maximise value, the case is even stronger in sectors where the stakes are higher.

The transformative power of data in education

Education systems are complex – arguably more so than businesses – and require timely data to support effective leadership.
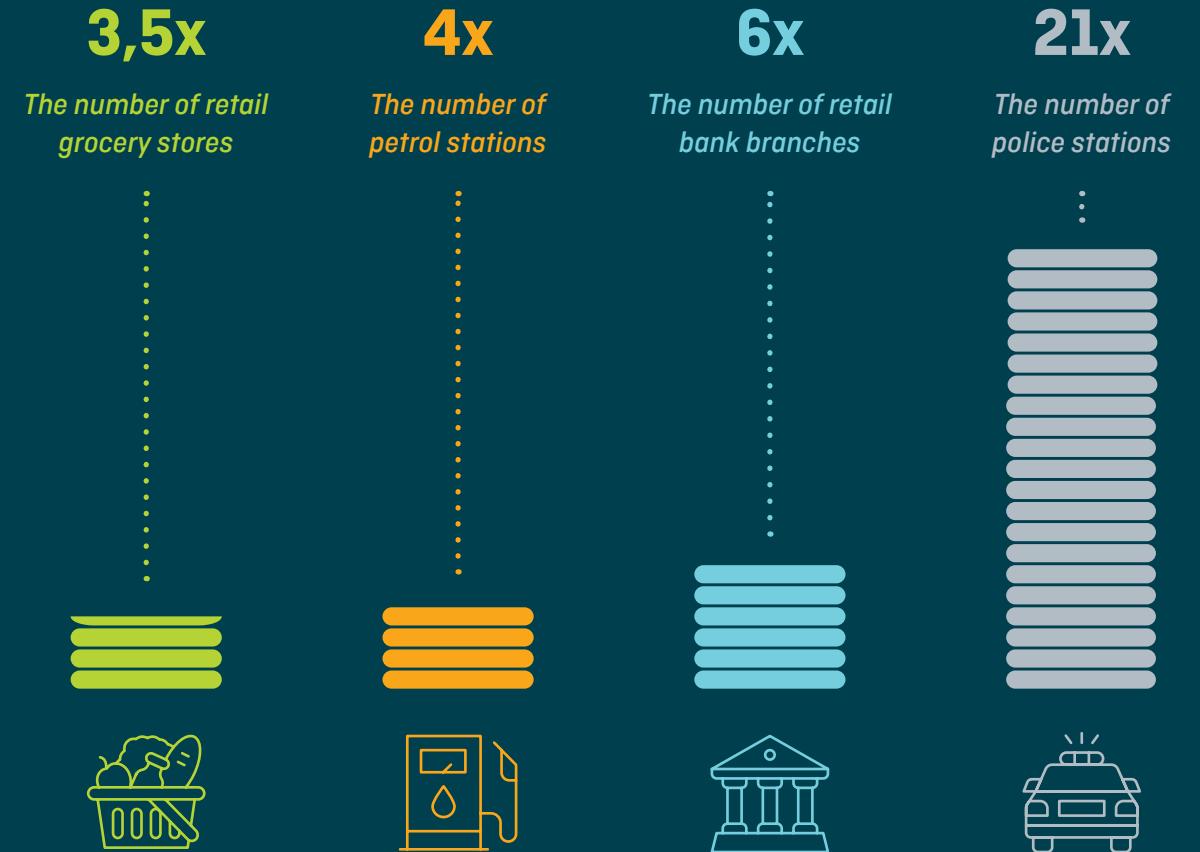
This complexity has many dimensions:

- ✓ **Scale**: South Africa's 24 850 schools employ 460 000 educators across nine provincial departments, accounting for over 6% of the national expenditure towards education.

- ✓ **Contexts**: Schools operate across 75 districts in diverse rural and urban environments, each with its own unique constraints and local contexts.

- ✓ **Change**: 13,5 million learners must be equipped for a rapidly evolving workforce, amid youth unemployment nearing 44%.

- ✓ **Lag:** It can take over a decade to measure what's working (or not), with key indicators only measured when learners reach Grade 12.

Education leaders need real-time data on learner performance, attendance, teacher effectiveness, and resource allocation to identify challenges, target interventions, adjust strategies, and improve outcomes.

Timely, well-synthesised data empowers leaders to act early – enabling proactive decision-making, ensuring every learner receives the right support at the right time.

The footprint of the public school system is:

3,5x
The number of retail grocery stores

4x
The number of petrol stations

6x
The number of retail bank branches

21x
The number of police stations

Even when combined, South Africa's essential service providers don't match the footprint of the public school system – making it the single largest service network in the country.

Leading through complexity, guided by data

Since 2014, the **Data Driven Districts (DDD)** Dashboard has equipped South Africa's education leaders with near real-time data to improve learner outcomes. Tracking data for Grades R–12, the dashboard enables targeted action to close learning gaps and support learner success.

12 Million
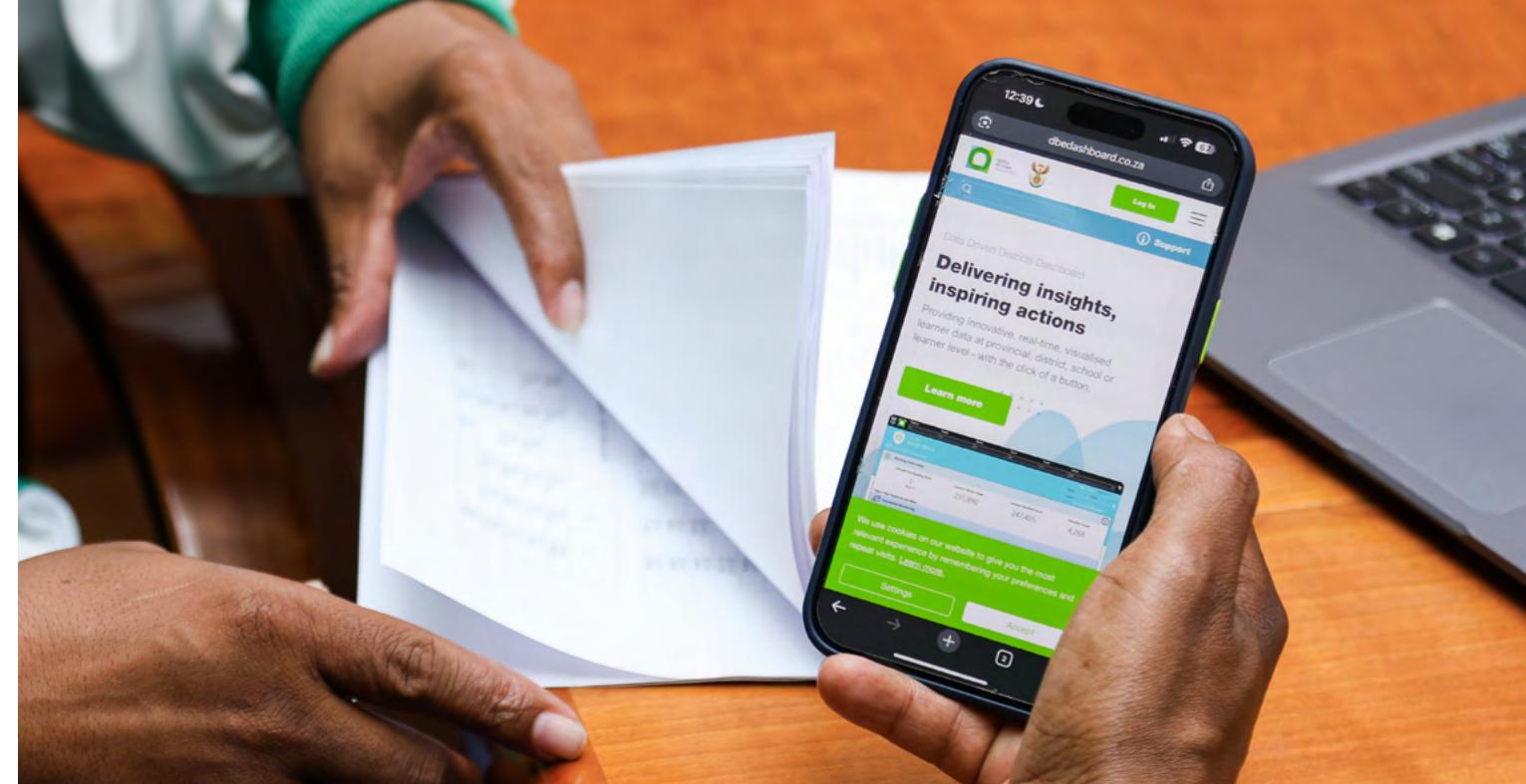*Learners represented on the DDD dashboard*

90%
Of South African public schools represented

44 466
Education officials enabled with access to DDD*

*As of 31 March 2025

How it works

DDD integrates education data into a single, easy-to-use online platform. It provides near real-time insights on attendance, assessment results, and learner progression. By consolidating key metrics, the dashboard enables school, district, and national leaders to monitor trends, identify gaps, and take timely, data-driven action.

What it enables

With timely access to accurate data, education leaders can make informed decisions to improve learning outcomes. Since its inception, DDD has shifted the focus from data collection to data use – empowering school leaders, curriculum supervisors, and policymakers to act earlier, improve instruction, and direct resources to where they are needed most.

> **"**
>
> Submitting school-level data isn't just about compliance anymore – it's a tool for daily decision-making. It drives learner performance, improves outcomes, and fosters a data-driven culture that must be embedded in our sector.
>
> **Ayesha Suleman**
> *Education Management and Information Systems (EMIS) Director,*
> *Department of Basic Education*

> **"**
>
> The Data Driven Districts toolset plays a critical role for managers to compare learner performance across various schools within their jurisdiction. Now, through DDD, we can see learner performance from the Foundation Phase, Intermediate Phase, and Senior Phase, to see how learners are performing and where we need to intervene and provide support timeously. It's a wonderful tool that provides data at our fingertips.
>
> **Bheki Mpanza**
> *Education Management and Information Systems (EMIS) Chief*
> *and Director, Department of Basic Education*

> **"**
>
> DDD is transforming education in South Africa, and equipping thousands of leaders with real-time insights to drive student success. Its impact is clear — and its potential even greater. By deepening data-driven strategies, DDD ensures every learner gets the timely support needed to stay engaged, grow academically, and pursue their goals.
>
> **Janet Mountain**
> *Head, Michael & Susan Dell Foundation*

What DDD enables in practice

✓ **Smarter, faster decisions**

The DDD Dashboard empowers school leaders to use efficient technology to shorten decision-making cycles and improve the impact of their interventions.

✓ **Improved efficiency**

Instead of spending months gathering data from individual schools, education leaders access complete, visualised data within 24 hours of data submission by schools.

✓ **Accelerated intervention**

Weekly and termly data are synthesised into reports highlighting the drivers of learner performance – enabling faster rollout of targeted learner support in schools and districts.

✓ **Actionable insights**

The dashboard's colour-coded visualisations enable education leaders to draw insights quickly from numerous data points without additional analysis.

✓ **Systemwide alignment**

Schools, districts and provincial departments have access to mirrored information – ensuring alignment in strategy, monitoring and support across all levels of the education system.

The data journey – from classroom to dashboard

Scan here for dashboard demo

Step 1: Collection

Leverage data sources including the Department of Basic Education's South African School Administration and Management System (SA-SAMS), through which schools capture and submit key information including attendance, continuous assessment, exam results and progression data.

Step 2: Extraction

Ensure data completeness and consistency through pre-extraction validation using Valistractor – a custom-built technology tool with adaptively managed validation rules that maintain data integrity.

Step 3: Processing

Host data securely and at a cost that supports scale, using cloud infrastructure and custom-built applications with role-based and geographic access controls to ensure both security and usability across the system.

Step 4: Analysis

Compute metrics to allow varied use cases including:

- Attendance
- Promotion prediction
- Learner information
- Educator information
- Continuous assessment analysis
- Exam analysis
- Aggregations and drill downs
- Insights and data downloads

Step: Use

Support data-driven decisions and action by building the capacity of education officials to translate insights into meaningful interventions – enabled through practical, system-level cascade models.

Role-specific insights enable education officials to fulfil unique responsibilities

Using DDD, **EMIS Officials** can ensure data coverage is adequately achieved to answer the complex questions of education officials across their areas and facilitate data access.

Using DDD, **District Curriculum Officials** can analyse performance by school, by subject and by grade, determine which schools or subject advisors need their focus, and craft targeted interventions for schools.

Using DDD, **Circuit Managers** can identify which schools need support and drive informed engagement with school principals on which learner support interventions will have the most impact on outcomes.

Using DDD, **School Principals and Management Teams** can assess learner progress, identify learners at risk, have evidence-based discussions with their teams, and plan their resources.

A decade of progress: scaling DDD to sector-wide impact

Phase 1 (2012 – 2015): Pilot & foundations

The DDD program partnered with the DBE to launch the Success by Numbers study, uncovering new opportunities to turn data into actionable insights. As a result, the dashboard proof of concept was launched in seven districts across two provinces, in partnership with New Leaders Foundation (NLF). The Valistractor tool was built to improve data quality.

Phase 2 (2016 – 2019): Wide-scale rollout

The program expanded nationally – reaching 60 districts, expanding its user base by 80%, and driving a significant increase in the volume of school data submissions. A new research partnership helped guide strategic actions, while a follow-up study deepened data-driven decision-making in schools.

Phase 3 (2020 – 2024): Embedding & growth

An independent evaluation confirmed DDD's impact on learning. Over 17 000 officials adopted the new predictive, cloud-based dashboard. Registered users surged to 44 500. DDD became South Africa's largest education dataset.
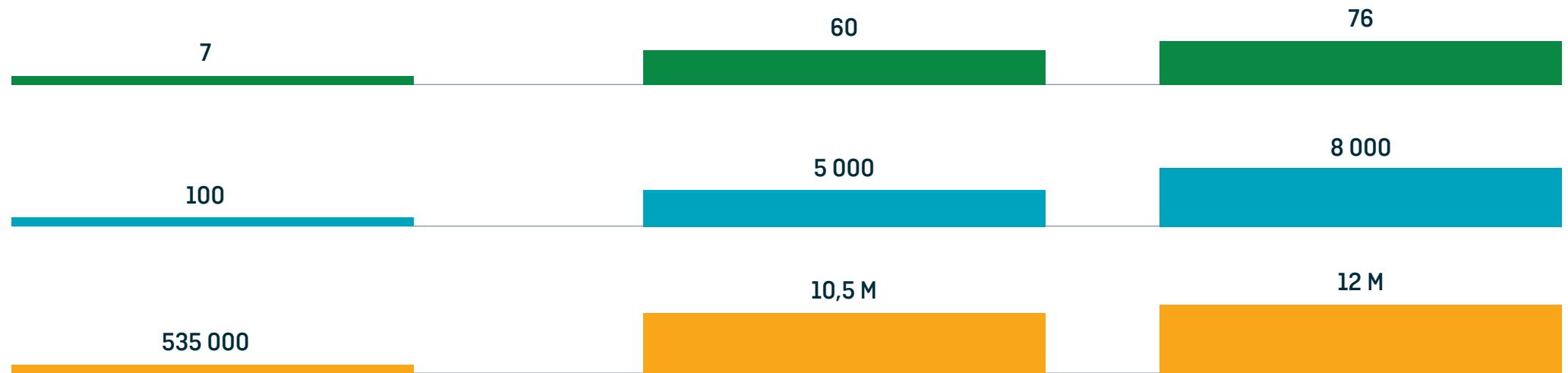

	Phase 1	Phase 2	Phase 3
Provinces		60	76
Districts	7	60	76
Repeat users	100	5 000	8 000
Learners	535 000	10,5 M	12 M

The impact of DDD in numbers

Based on 2024 datapoints

Technology

10,5 B
Rows in data warehouse

Rows of data in the raw data warehouse, processed on Fabric 64 capacity in 16 minutes (down from 59)

10 500
Tickets resolved

Queries received by the DDD Helpdesk, and resolved to enable users to access the data

220
Technical enhancements

Designed, validated with users, and rolled out, showing value of the configurable solution

Users

29 750
Users onboarded

Users who have a DDD account, and have logged in at least once since launch of DDD 2.0 in 2023

13 500
Active users

Peak number of users logged in per school term, with 9,1 average views per active user

8 000
Repeat users

Logged into the dashboard in consecutive terms, with 11,4 average views

24 000
Training attendees

Officials attending live and on-demand webinars, many earning professional accreditation points

Schools

14 600
Weekly submissions

Average number of schools submitting weekly data to DDD in a term (57% of all public schools)

22,000
Termly submissions

Average number of schools submitting termly data in a term (86% of all public schools)

Learners

12 M
Number of learners

Learners with performance data on the dashboard (89% of public school learners)

102 000
Learners in interventions

Grade 12 learners supported through DDD enabled interventions

A case study of data-driven transformation

Once struggling with high staff turnover and limited resources, **Mogalakwena District** has become a leader in data-driven education - going from one of Limpopo's lowest-performing districts in 2019 to the best in the province in under three years.

The challenge

With over 100,000 learners across 251 schools, the district lacked real-time insights to track learner progress and guide interventions. Data submissions were inconsistent, and decision-making relied on intuition rather than evidence.

The turning point

In 2020, an ambitious plan was launched to integrate data into daily decision-making, with the approach focusing on:

- ✓ Training curriculum officials to use DDD insights effectively.

- ✓ Strengthening data submissions in partnership with EMIS teams.

- ✓ Building a culture of accountability, linking interventions to real-time data.

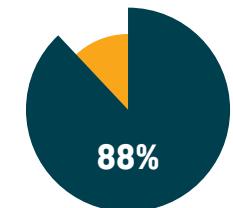## The impact of DDD in Magalakwena District in 2024

99%
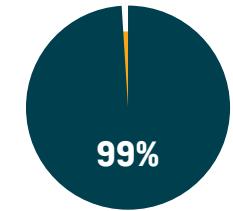
Data submission rate
Increased from 95% pre-2020

40%
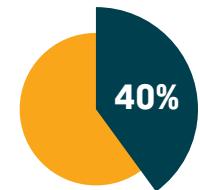
More learners writing NSC exams
Compared to 2020

88%

NSC pass rate
And the highest-performing district in Limpopo province

Independently validated impact

An independent evaluation of DDD in 2020 concluded that:

- ✓ Use of the DDD dashboard creates a **data-driven culture** and drives more effective learning interventions

- ✓ Education **officials find value in the dashboard** and work to overcome contextual barriers such as connectivity and devices

- ✓ **Data use champions have emerged** and are driving quality usage and building data user communities

- ✓ The **DDD training enables effective and efficient use of technology** in the public sector

The rigorous evaluation included input from:

600+
Survey responses from education leaders

73
District officials interviewed

148
School principals or other school leaders inverviewed

21
Subject matter experts interviewed

20 000
Users' dashboard-usage-data analysed

"

The Data Driven Districts programme has been a key innovation in the education sector. By linking various data sets, the DDD programme provides valuable longitudinal information. These datasets have been instrumental in identifying trends, assessing the impact of policies, and informing evidence-based interventions for learner outcomes.

Servaas van der Berg
Professor of Economics, University of Stellenbosch and Lead Researcher, Research on Socioeconomic Policy (RESEP)

Growing impact together

DDD has made significant strides in embedding data-driven decision-making across South Africa's education system. The world-class technology is deployed cost-effectively and rigorously implemented to achieve wide-scale adoption in ~90% of South African schools.

22 000

Of South Africa's schools upload termly data to the DDD dashboard to inform interventions and improve learner outcomes

New avenues for growth:

Unlocking broader analytics

Analytics experts and researchers can support other use cases with the data, to enable education programme implementors.

Vizualising new data sets

Provincial education departments and funder groups can use the toolset to disseminate other data sets such as systemic assessment data.

Growing usage

Funders of basic education programmes can grow data user communities by leveraging data to answer their most pressing education questions.

Creating system capacity

Organisations deeply committed to strengthening education systems can build government institutional capacity to manage data for impact sustainably.

We invite you to explore partnership opportunities

Together, we can drive meaningful impact while creating shared value. We can inform education programmes with data, amplify results, and shape the future of education.

Opportunities include:

Growing sustainable impact: Provide co-funding for core programming to increase data use, embed technology in education sector processes, and strengthen education system capacity to further the effective use of data to impact South Africa's education sector.

Accelerating data application: Partner to accelerate data-informed approaches within partner education programmes and learning interventions, through robust monitoring and evaluation, and by targeting resources.

Creating joint initiatives: Collaborate to leverage the DDD toolset to build new data solutions and enhance education leadership skills that solve education problems with data systems.

Enabled by strong partnerships

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new leaders foundation

✓ **Enabler**: Provides enabling environment and ensures alignment with education sector strategy and policies

✓ **Coordinator**: Supports coordination with Provincial Education Departments

✓ **Integrator**: Maintains school information management system from which data is sourced

✓ **Implementor**: Technology adoption change management and stakeholder management

✓ **Innovator**: User needs research on data insights that drive impactful action

✓ **Supporter**: Trains data users, implements user/customer management strategies and supports learning interventions

Historic funding, implementation, technology and research partners include: Provincial Education Departments, FirstRand Empowerment Foundation, Altron TMT, IntePort, BBD, University of Stellenbosch RESEP Group, Benita Williams, Microsoft

Transforming education through data-driven decision-making is only possible with strong cross-sector collaboration.

Commitment to leveraging data for better learning outcomes has helped build a system that empowers educators, supports students, and strengthens education at scale.

Providing education leaders in South Africa **with timely data and insights** so they have the information they need at their fingertips **to support learner success**.

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