

e-Learning in the Gauteng Province

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TECHNOLOGY AND DATA
FOR ENHANCED GOVERNMENT SERVICE DELIVERY



Discussion points



Rationale for the e-Learning programme in Gauteng



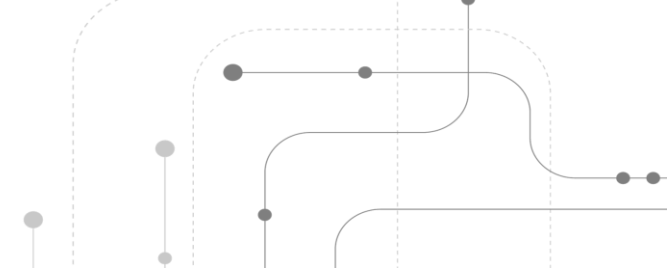
Gauteng e-Learning Strategy



Spending trends, patterns and insights

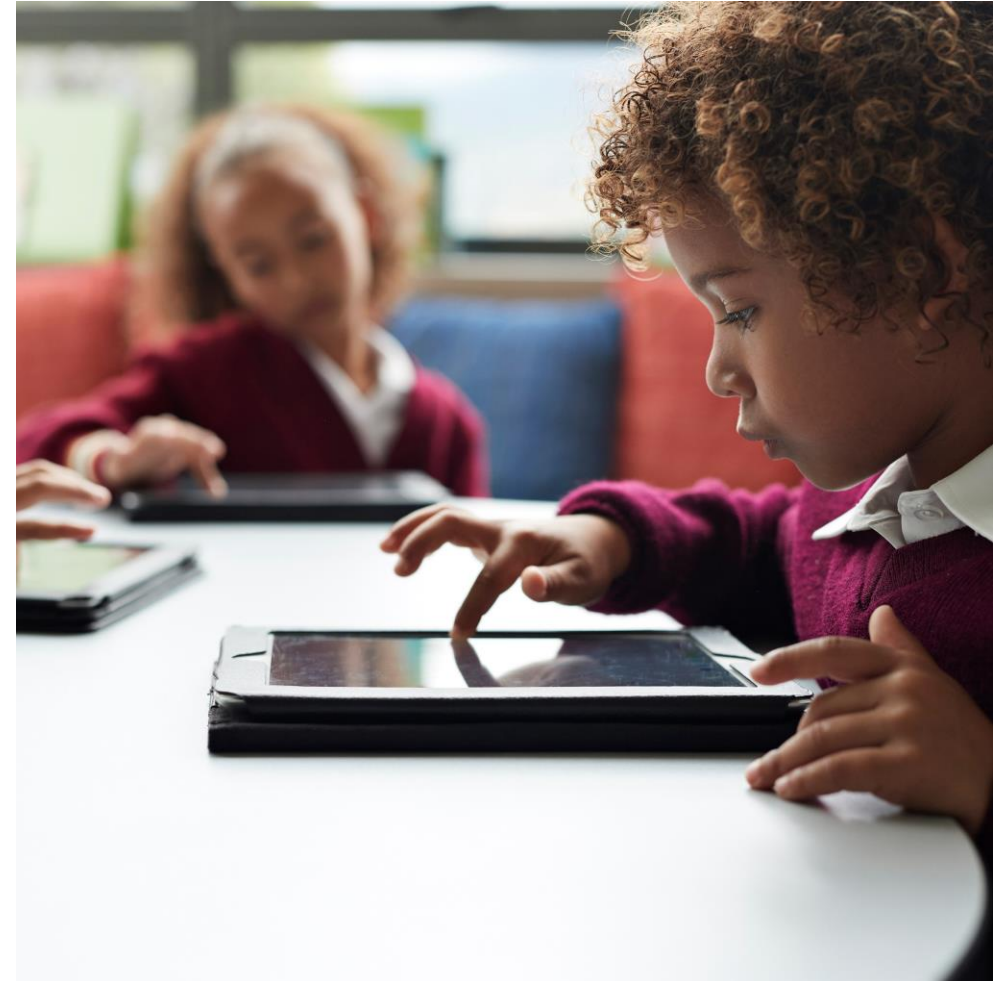


Conclusions

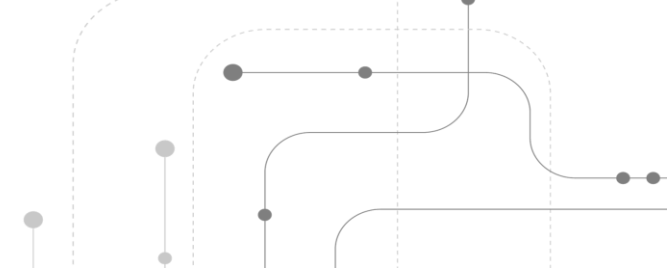


Rationale for the e-Learning programme in GP

- Schools in Gauteng are increasingly overcrowded, with learner-teacher ratios continuing to rise due to ongoing migration within the province.
- There is a considerable disparity in access to technology between learners from affluent and low-income backgrounds in Gauteng.
- A significant portion of the province's older teaching workforce lacks sufficient computer literacy, hindering the integration of technology into teaching methods.
- As the economic hub of South Africa, Gauteng faces a growing demand for a technology-literate workforce equipped for the 4th Industrial Revolution.



Components of the Gauteng e-Learning Strategy



1



Infrastructure

2



Devices

3



**Connectivity and
maintenance**

4



e-Content

5



**Professional
development**

6



Security

7

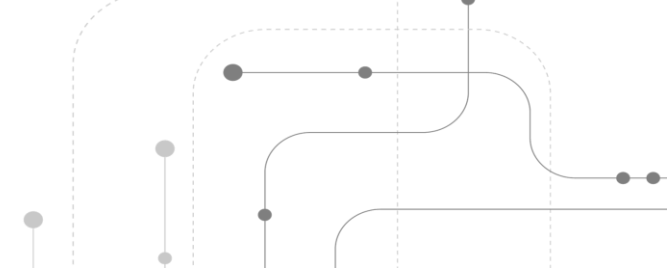


**Research, knowledge
management and innovation**

Gauteng implementation strategy

Phased Implementation

- The programme began as a pilot in 7 schools covering 100 classrooms in 2014 – completed.
- Phase 2: Targeted Grade 12 no-fee paying township schools, covering 1,800 classrooms – Completed.
- Phase 3: Targeted Grade 11 no-fee paying township schools, covering 2,300 classrooms – Completed.
- Phase 4: Covered Grade 11 and 12 fee-paying township schools, covering 956 classrooms – Completed.
- Phase 5: Includes Grade 10 township schools, covering 3,100 classrooms – 30% Completed.
- Phase 6: Covers Grade 9 township schools, with over 3,000 classrooms.
- Phase 7: Develops a content platform to facilitate the 'bring your own device' model.

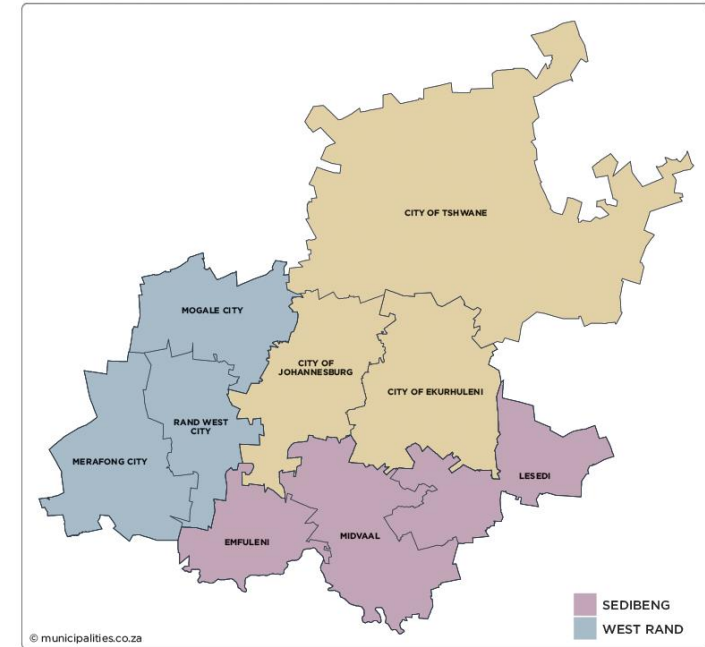


Deployment Strategies

FULL ICT DEPLOYMENT - classroom technology (smart boards) in **all** classrooms, tablets provided to all learners in schools and teachers supplied with laptops.

PARTIAL DEPLOYMENT – Phase-in approach rollout in secondary schools where classes have been converted to smart classrooms, installed with LED boards & learners in certain grades (e.g. Gr 10-12) provided with devices.

BRING YOUR OWN DEVICE – Learners in Quintile 4 & 5 bring their own devices to schools and can access the GDE Online Content.



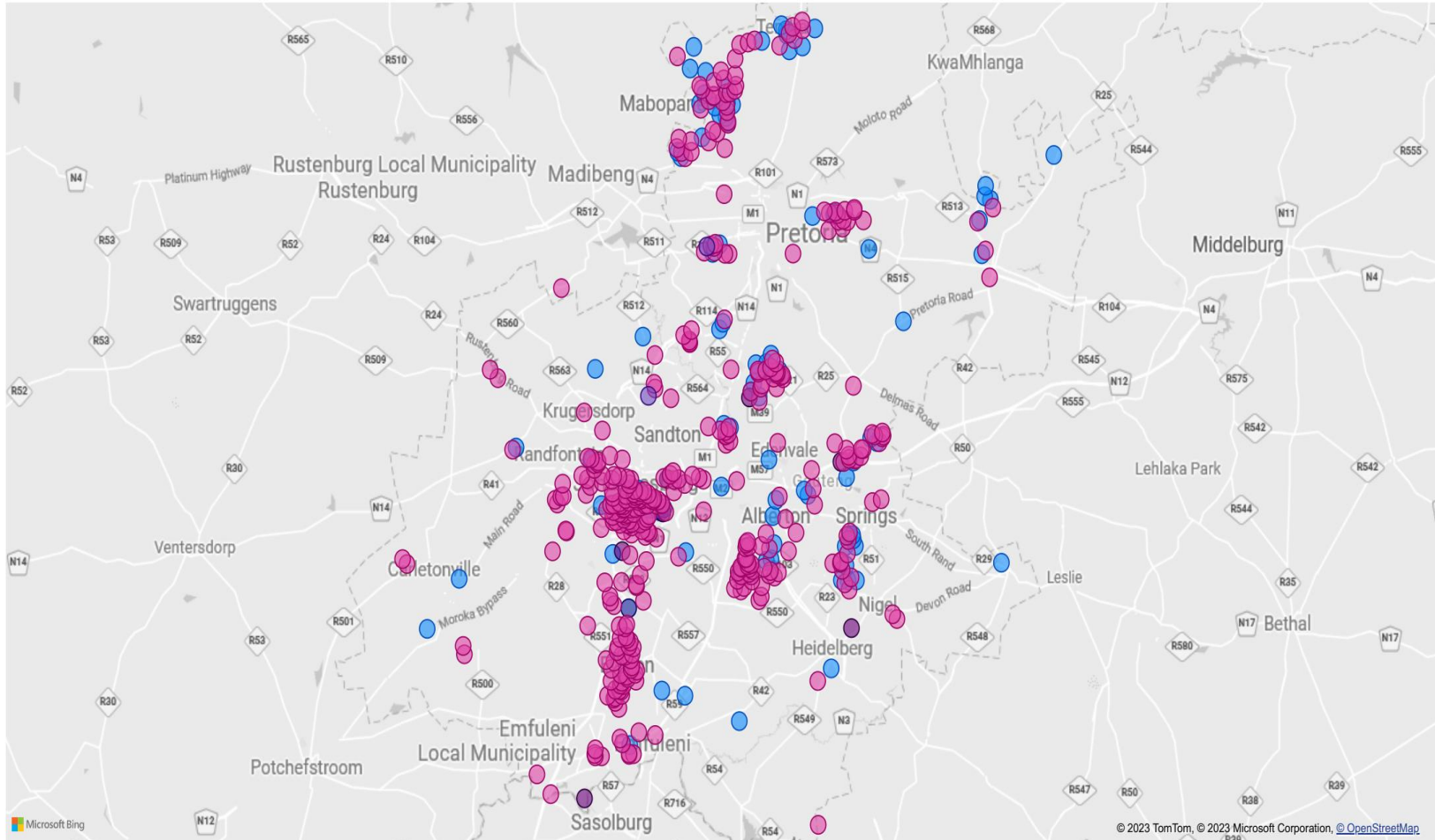
26% of all schools in Gauteng are ICT schools with one of these deployment packages

Network Infrastructure

< Back to report

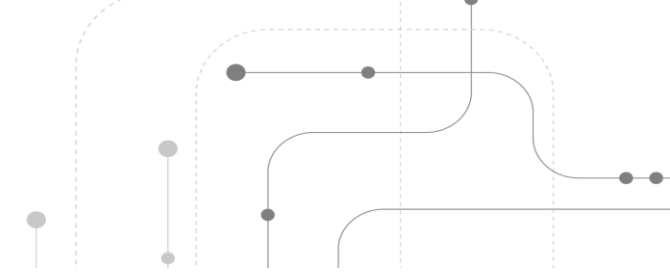
WAN, LATITUDE AND LONGITUDE

NETWORK INFRASTRUCTURE ● APN ● FIBER ● ROUTER ● WAN ● WIRELESS

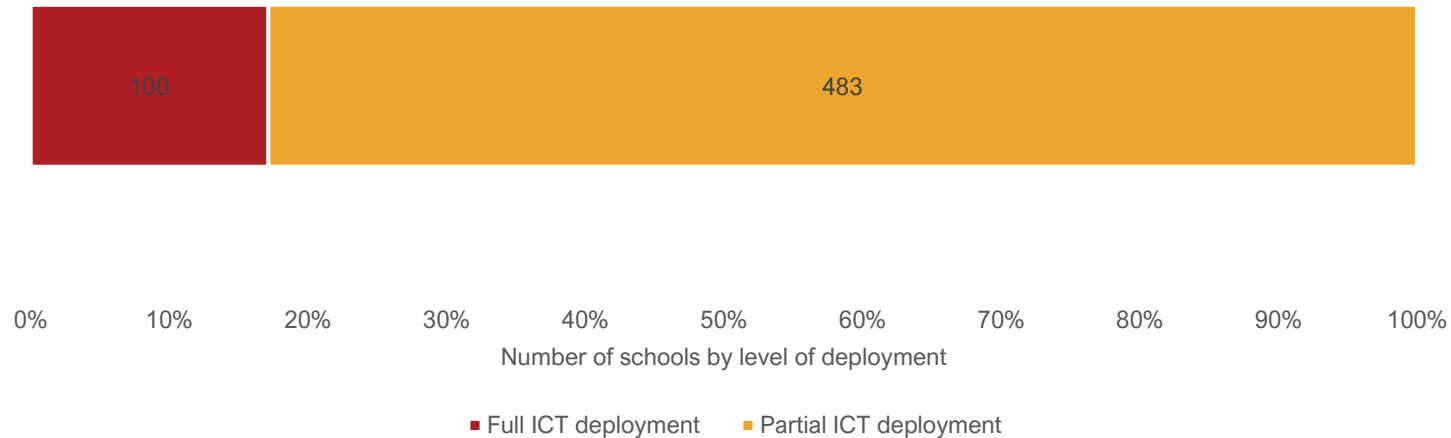


- Ability to use technology in teaching and learning is dependent on access to high-speed internet.
- 21% of all schools in Gauteng have access to network infrastructure
- Schools in highly urbanised areas are more likely to have access to WAN, as these areas are easier to connect due to existing infrastructure.
- While this approach is understandable, it could potentially exacerbate inequalities in educational outcomes.

Deployment Strategies: Full vs Partial

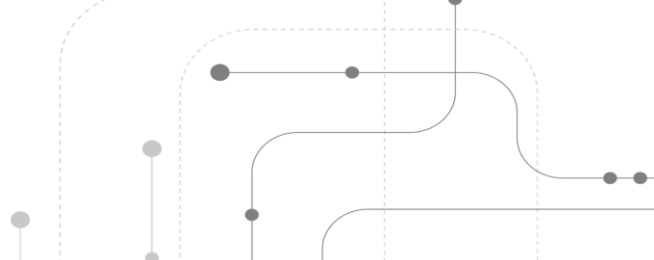


Schools with full versus partial ICT deployment

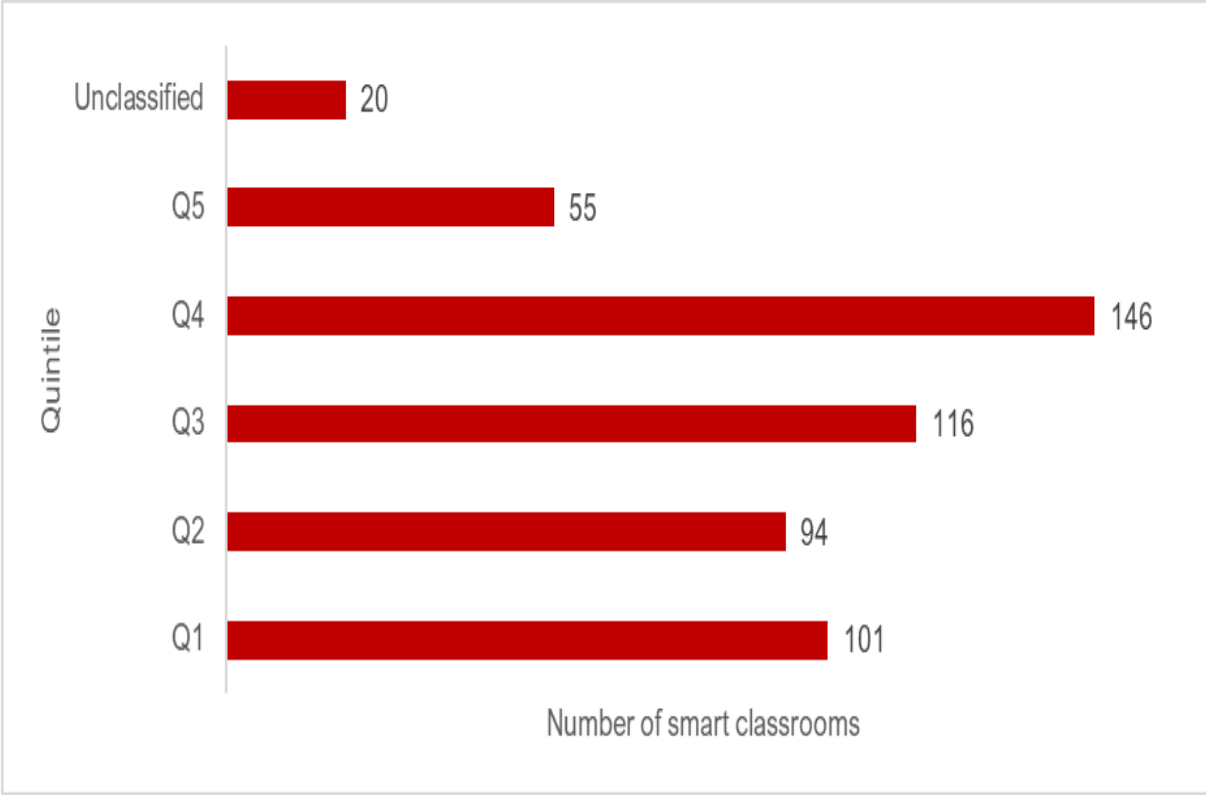


- Once a school is connected, the e-Learning programme deploys a technology package.
- There are two types of technology deployment possible:
 1. Full ICT deployment
 2. Partial ICT deployment
- The province has approximately 100 full ICT public schools out of 583 ICT schools, with the remaining 483 schools having a partial ICT deployment.
- Partial deployment is **more cost-effective** per school and expands reach of the e-Learning programme.

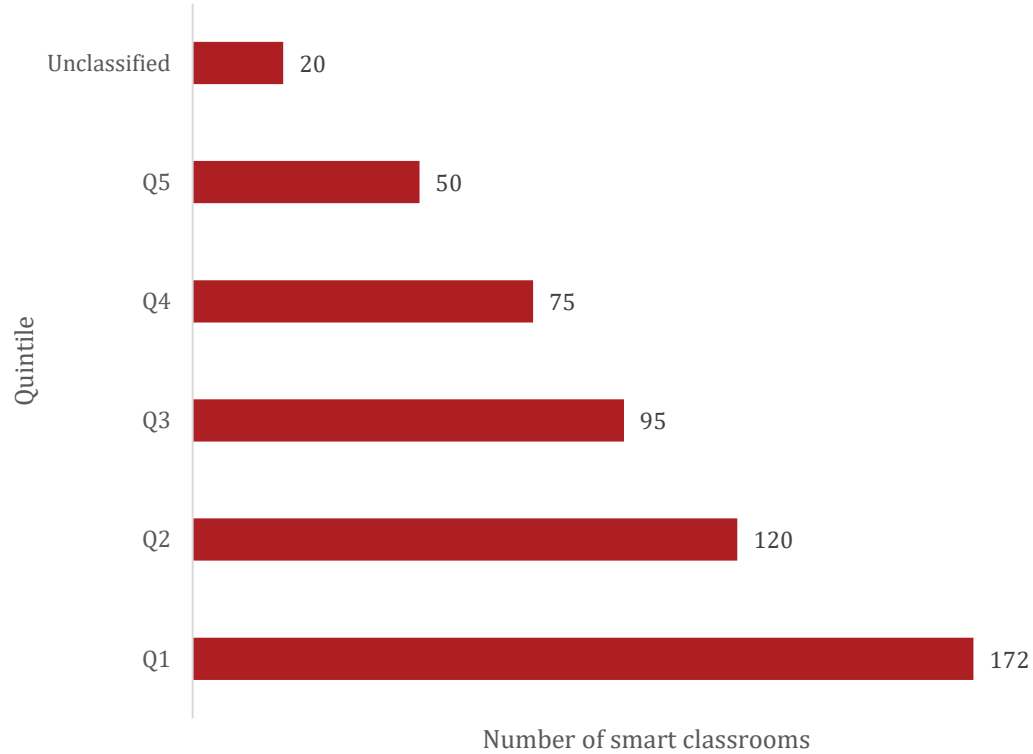
SMART CLASSROOMS BY QUINTILE



Smart classrooms by quintile

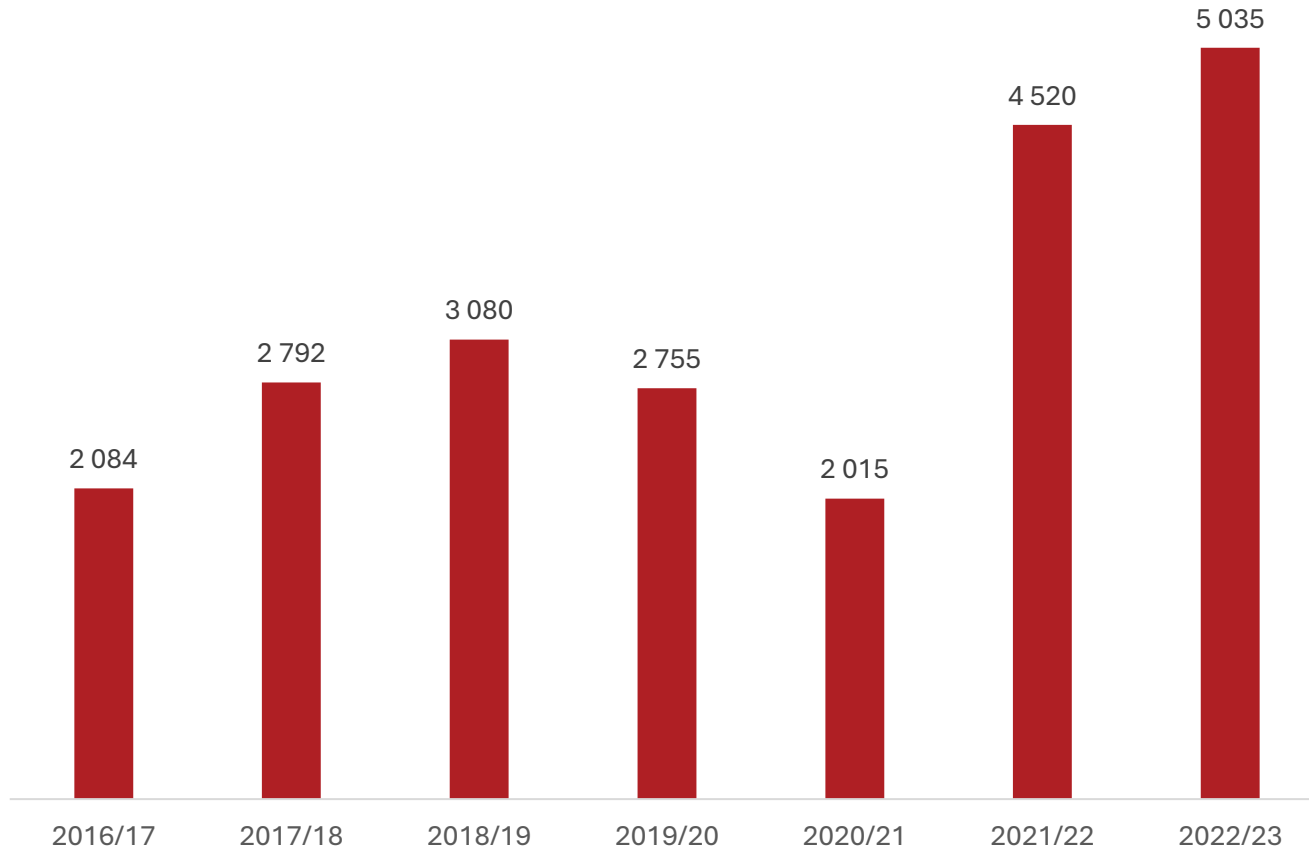


Proposed smart classrooms investment by quintile



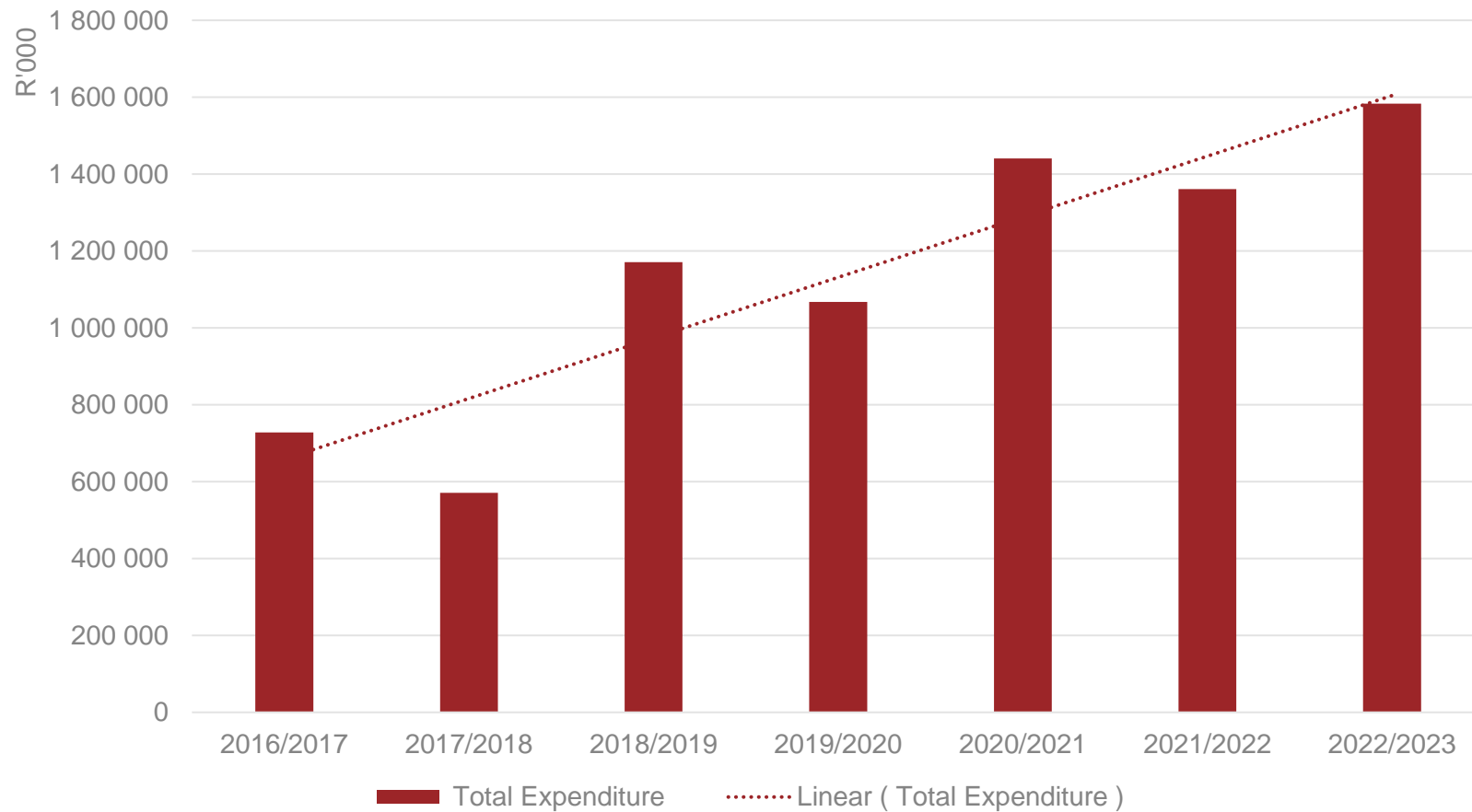
TEACHER TRAINING

Teachers trained to use technology in the teaching and learning



- Teacher training to enable e-learning has accelerated since the COVID-19 pandemic.
- This growth encompasses not only an increase in the number of teachers participating but also an expansion in the variety of courses offered by the Matthew Goniwe School of Leadership.
- In 2022, the MGSoL extended its reach to 5 035 teachers out of a total of 68 560, equivalent to approximately 7% of educators in public schools.

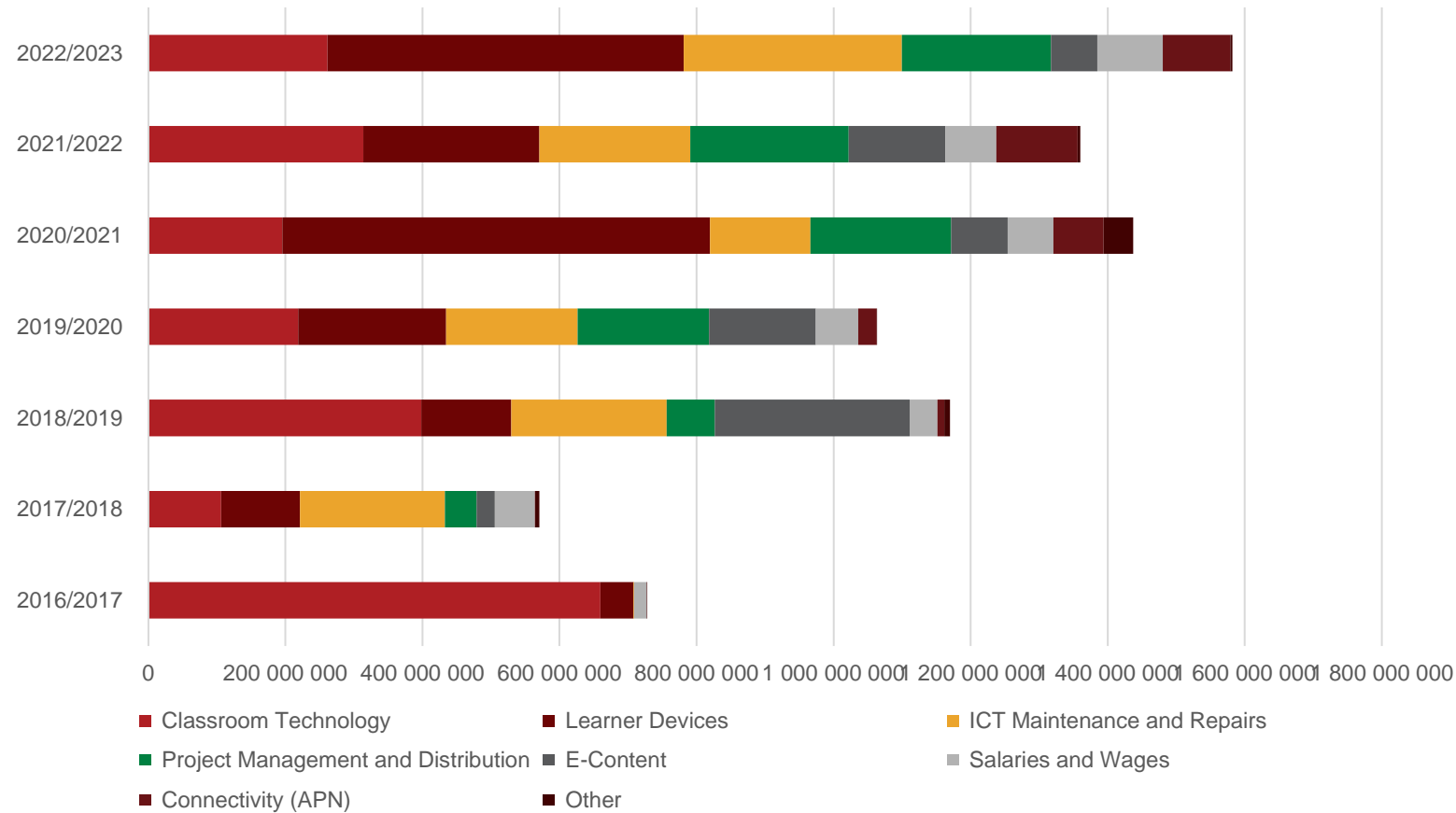
Expenditure on the e-Learning programme, 2016/17-2022/23



- Between 2016/17 and 2022/23, the GDE has allocated a total of R7.9 billion to the e-learning programme.
- Overall, the data indicates a consistent increase in spending on e-learning throughout the period.

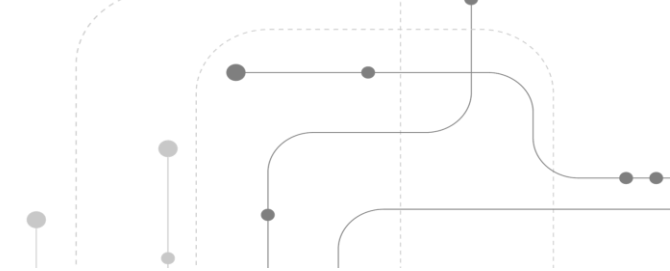
Spending on e-Learning by category

e-learning expenditure per category, 2016/17-2022/23



- There has been a noticeable rise in spending on Classroom Technology and Learner Devices, particularly from 2020/2021 onwards which suggests that the GDE is focused on enhancing digital learning infrastructure.
- As the programme gathers pace there has been a marked increase in expenditure on ICT Maintenance and Repairs, suggesting a growing focus on sustaining and upgrading existing technology assets.
- Spending on e-content as declined since 2018/19, with more emphasis on open-source content.

Procurement of good and services



GDE relies on a project management and procurement agency to implement its e-Learning programme. While this approach allows for efficient and timely execution, there are issues about value for money., specifically in relation to pricing premiums over and above market rates on certain items.

Item	Specifications	Premium or discount over market price	Interpretation
LED Boards	65-inch, simultaneous touch interaction	26%	Premium over market price
Teacher Laptop	Intel Core i5, 8th generation 32GB RAM	22%	Premium over market price
Tablets (2 in 1)	Intel Atom Celeron Chipset,256 GB SSD	-4%	Below market price

Key takeaways



- The e-Learning programme has advanced the ICT and E-education Strategy, with approximately 26% of public schools now connected to network infrastructure and 21% equipped with LANs.
- That said, there is a significant variation in the distribution of ICT-equipped schools across different districts.
- Schools in Quintile 4 appear to have received a larger share of benefits from the e-learning programme, likely due to the greater availability of WAN connections provided by the GBN in these areas.
- A substantial 94% of the total expenditure is allocated to goods and services, primarily managed by a project management and procurement agency. However, concerns have been raised about the value for money.

The main lesson from Gauteng's experience with the e-learning programme is the importance of balancing **equity, efficiency** with **value for money** in the e-Learning programme.

THANK YOU

