

PUBLIC ECONOMICS CONFERENCE

SPENDING REVIEW

E-Learning programme

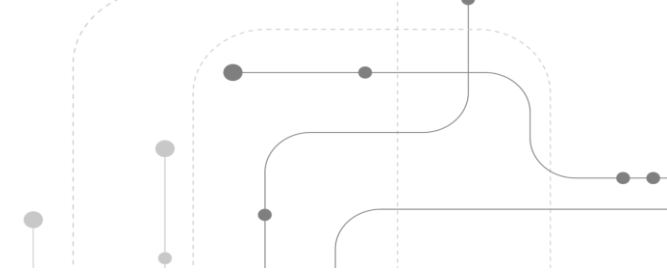
3-5 SEPTEMBER

2024

TECHNOLOGY AND DATA
FOR ENHANCED GOVERNMENT SERVICE DELIVERY



AGENDA / CONTENT



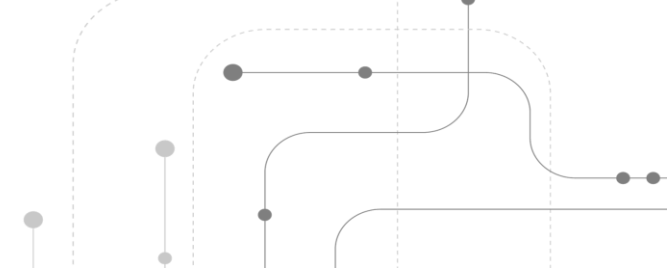
Problem statement and background

Policy response

Analysis and findings

Main takeaways

Problem Statement and Background



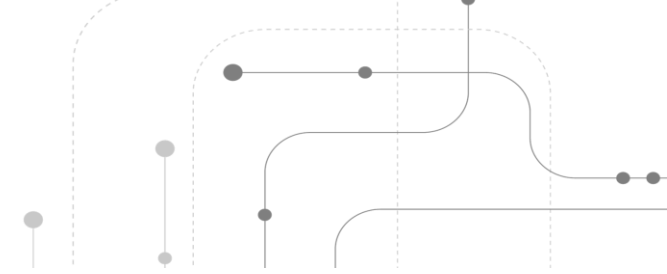
- **Lack of connectivity**
 - Before the broadband programme, schools were often left with dependable internet access. They had to secure internet connectivity by their own means.
 - This challenge of securing internet connectivity was compounded by the high costs of data.
 - Classrooms were not equipped with the infrastructure to embrace e-learning that leverages technology to deliver instruction to learners.
- **Inadequate teaching equipment**
 - Most schools lacked the equipment to teach learners the skills they need for the future world of work such as robotics, AI and coding
- **Teaching approach and pedagogy**
 - Teachers did not have the digital skills to use technology effectively in the classroom
 - Reliance on paper-based lessons and assignments placed significant burdens on teachers.



WCED's policy response and strategy

Rationale for e-Learning

- e-Learning uses digital technology to deliver instructional material to learners.
- e-Learning includes online courses, virtual classrooms, interactive video lessons, and educational games.
- e-Learning offers several benefits to teachers and learners alike:
 - Accessibility
 - Flexibility
 - Personalization
 - Interactive learning
 - Future-proofing skills development

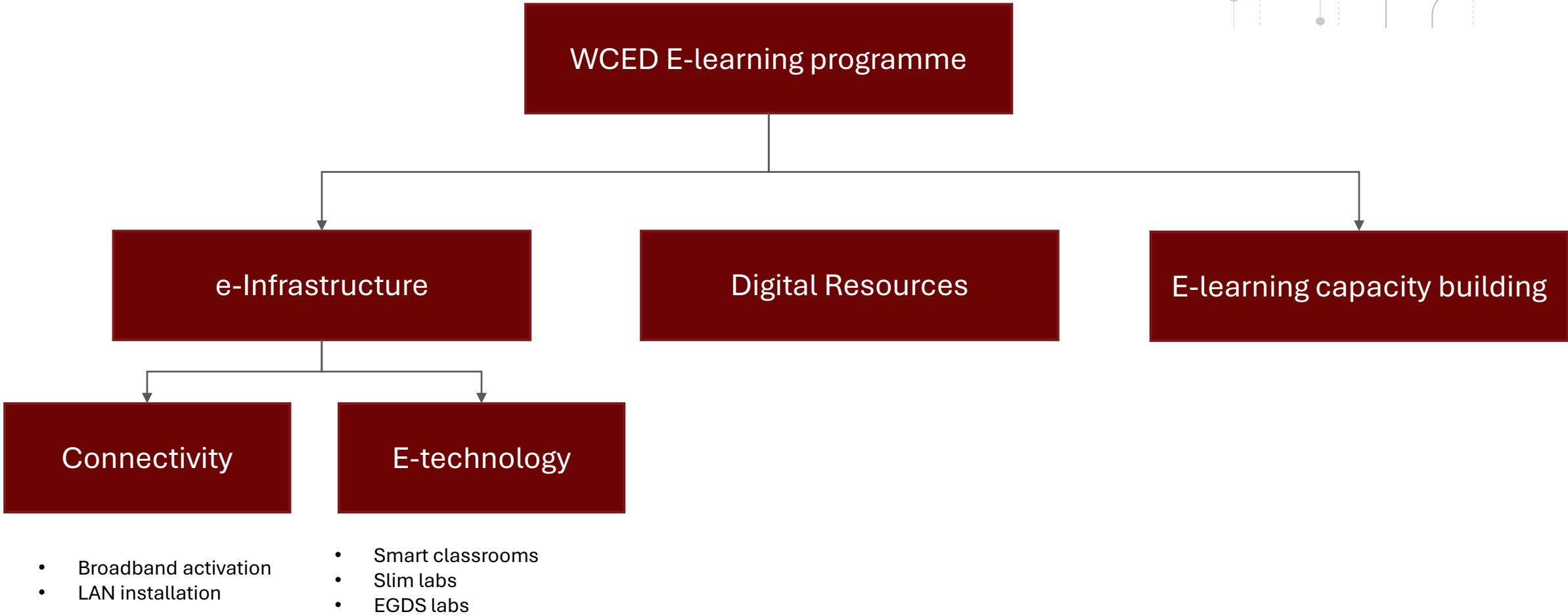
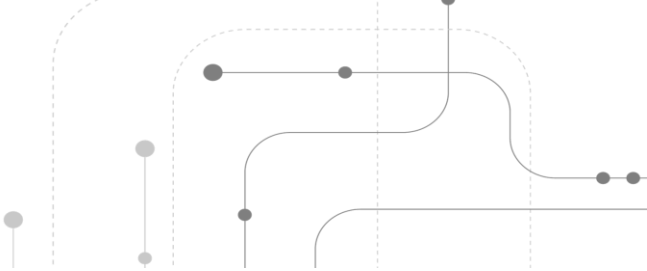


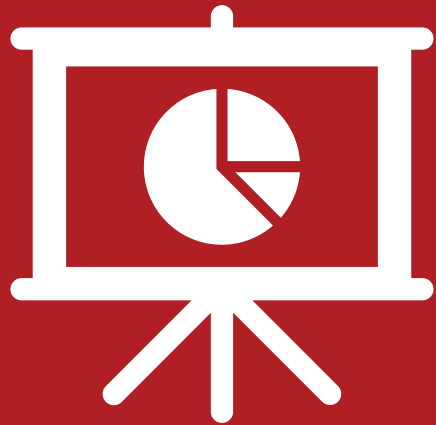
WCED e-vision and Digital Strategy (2020)

Transformed learning	Transformed teaching	Transformed governance and leadership	Transformed technology enablers
<ul style="list-style-type: none">• Access to ICT for the learner at school and home.• Access to quality and rich digital content• Enhancing interaction channels between learner and teacher	<ul style="list-style-type: none">• Involves equipping teaching with the digital skills to use technology as a teaching aid. (Teacher Development)• Ensures that e-content is provided to teachers	<ul style="list-style-type: none">• Improved management skills• Use ICT to train leaders• Close policy gaps that hinder e-learning	<ul style="list-style-type: none">• Internet and intranet connectivity• Appropriate e-infrastructure• Fit for purpose devices



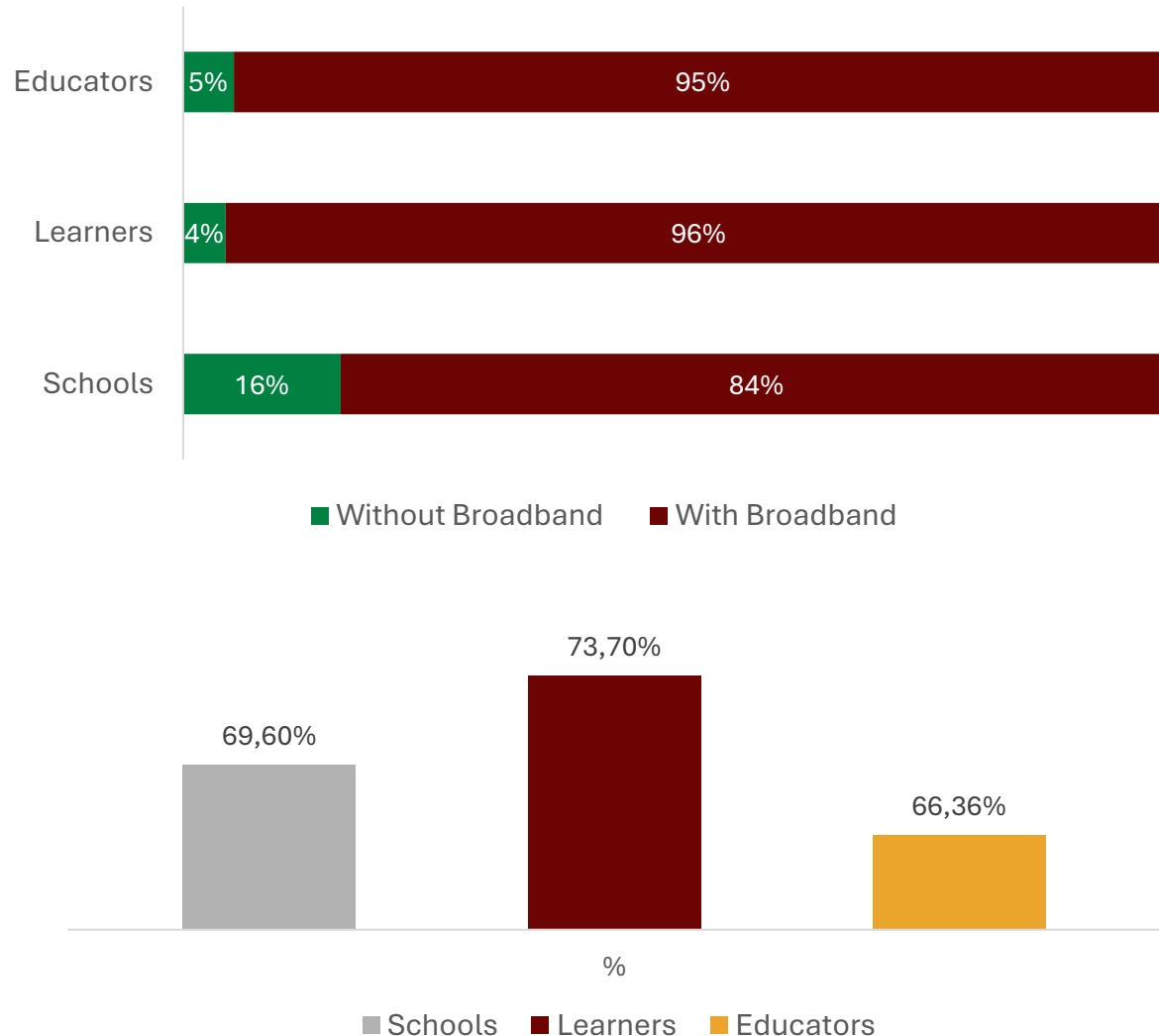
WCED e-Learning programme components





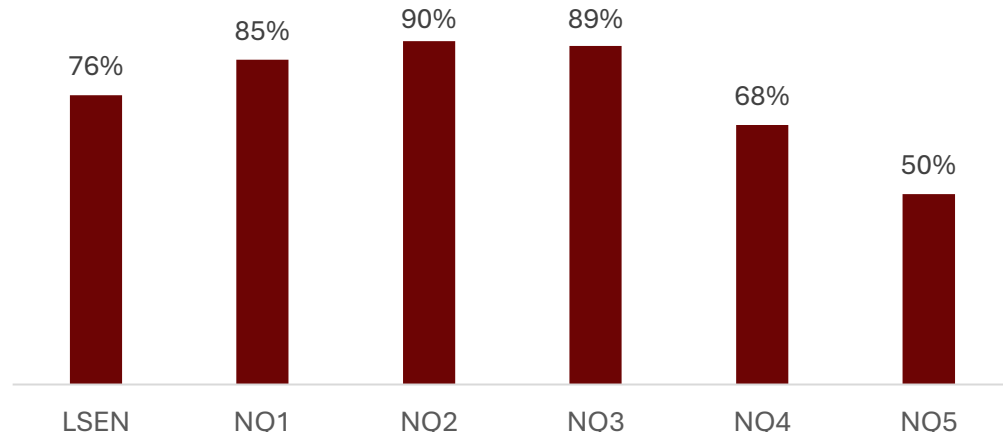
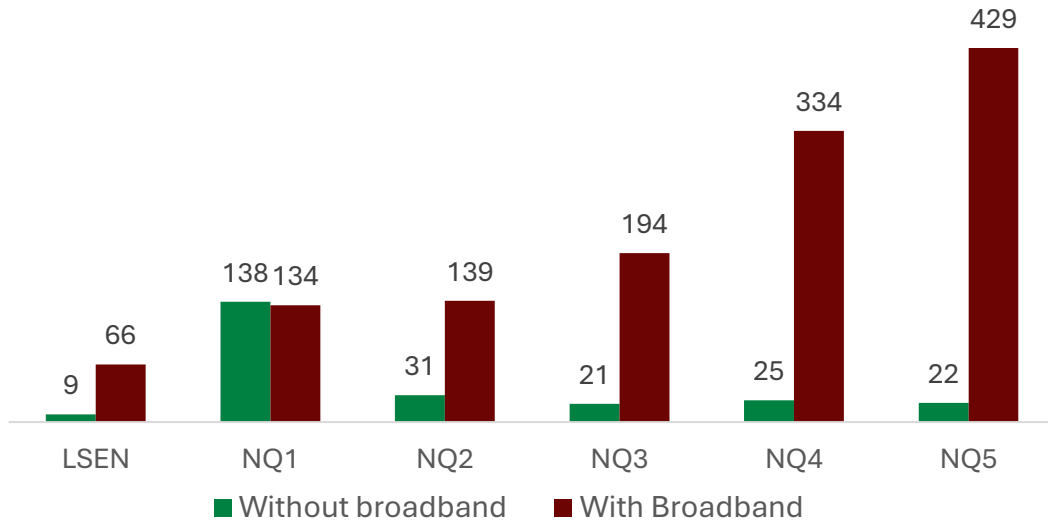
Analysis and Findings

Broadband Activation



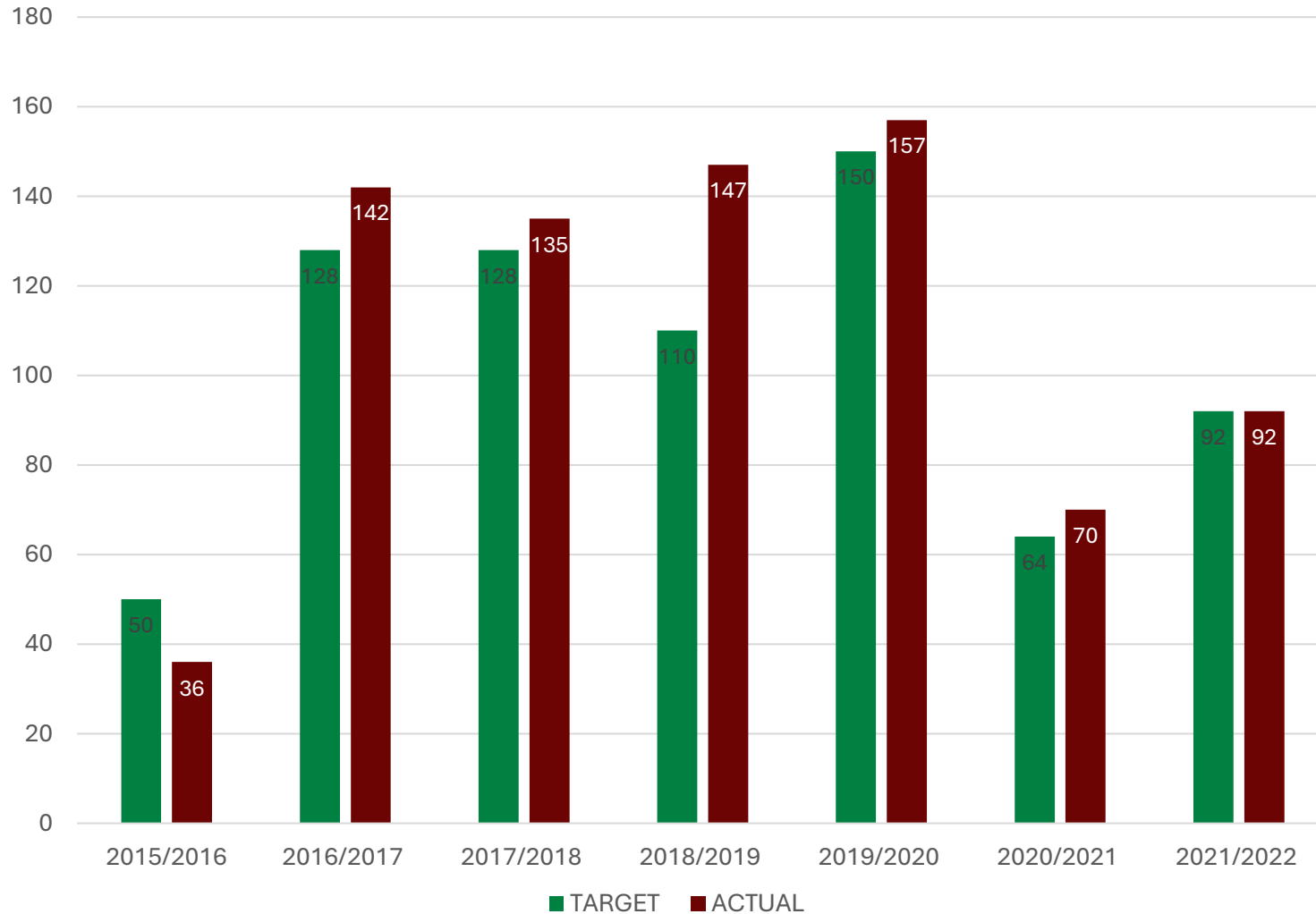
- **Broadband Connectivity:**
 - The responsibility for delivering broadband connections (whether wireless or fibre) to schools lies with the Department of the Premier.
 - Significant progress has been made, with 84% of schools now having achieved broadband activation.
 - Schools without broadband access receive a subsidy from the WCED.
 - Broadband activation provides fast and reliable internet connectivity, crucial for educational activities.
 - Currently, 96% of learners in the Western Cape are in schools with broadband coverage.

Broadband activation by quintile



- Schools are classified into five quintiles based on the poverty levels of the communities they serve. Quintile 1 schools cater to the poorest 20% of the population.
- Broadband activation is lowest among Quintile 1 schools and Schools for Learners with Special Needs.
- Despite the lower overall broadband activation in Quintile 1 schools, the WCED has made considerable efforts to ensure LANs are activated in poorer schools where broadband has been established.
- As a result, LAN activation in Quintile 1-3 schools is among the highest in the province.

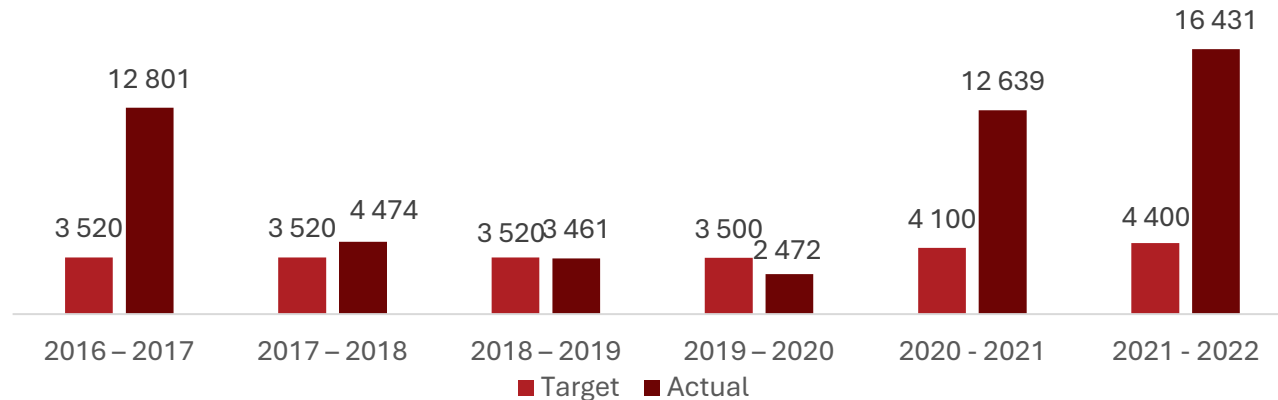
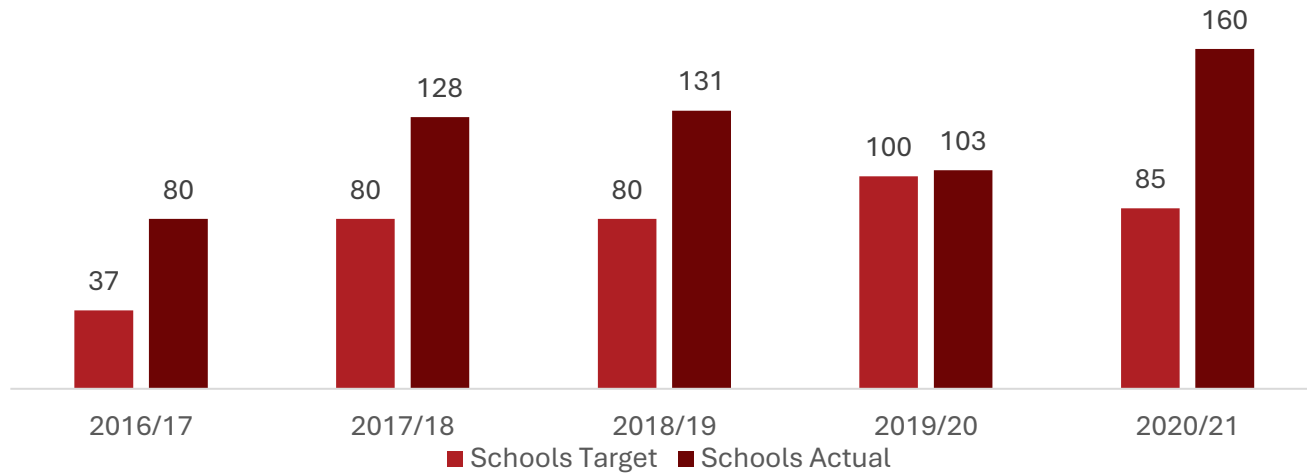
LAN Activation by financial year



- Although LAN activation has progressed more slower explained by budget availability, the WCED has exceeded its targets in nearly all years, (except for 2015/16) over the period.

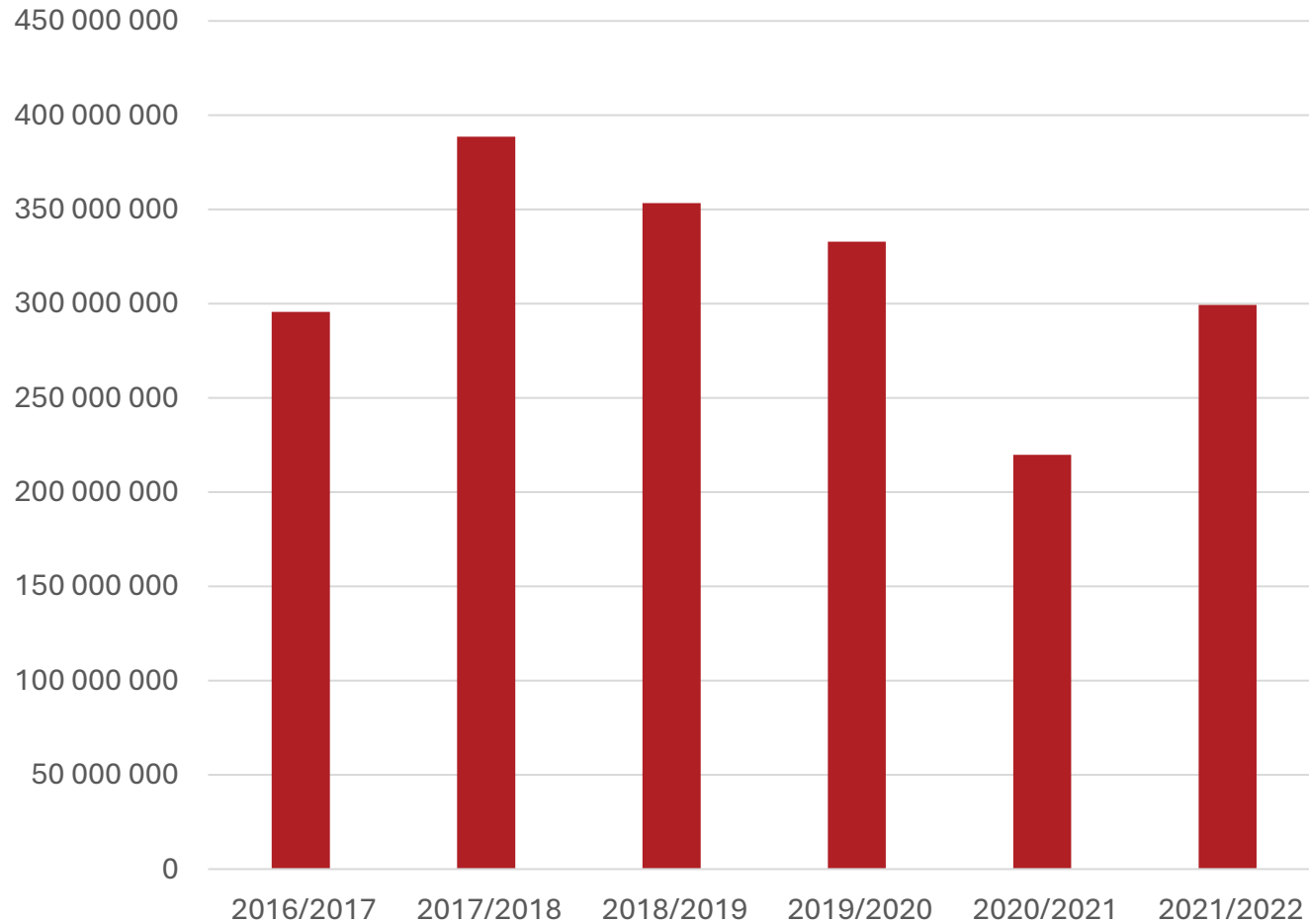
Smart Schools and Training

Smart Schools



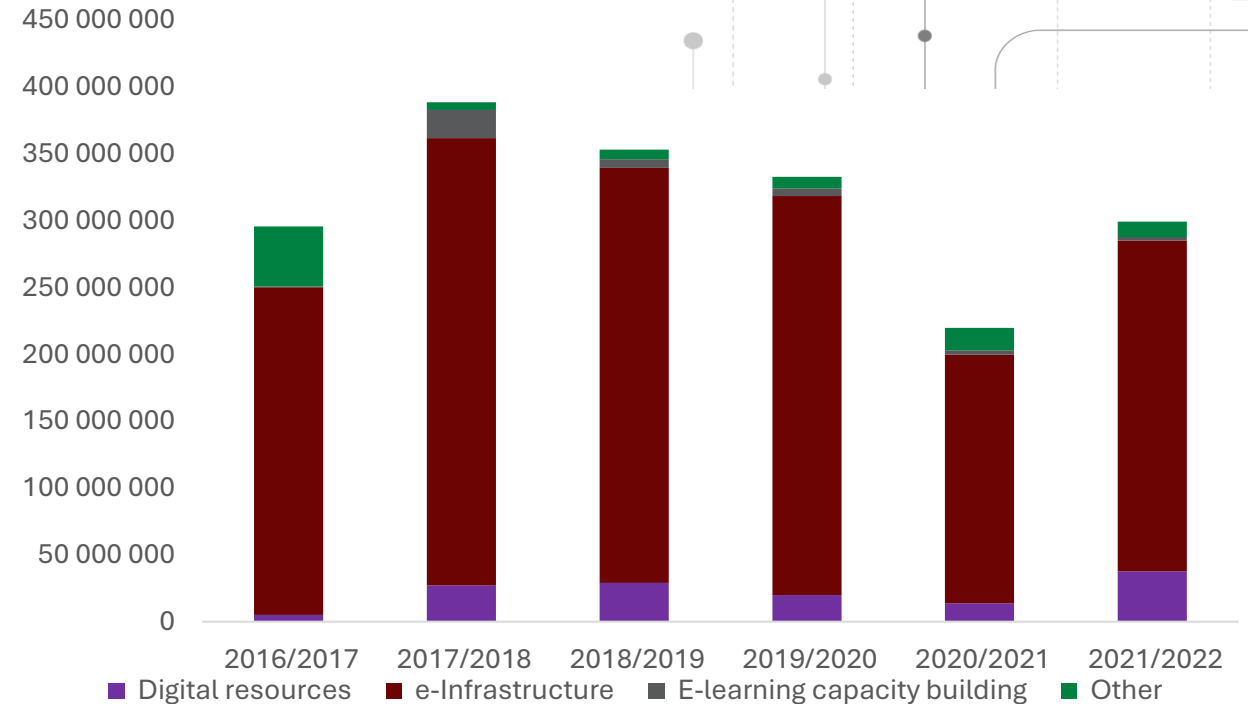
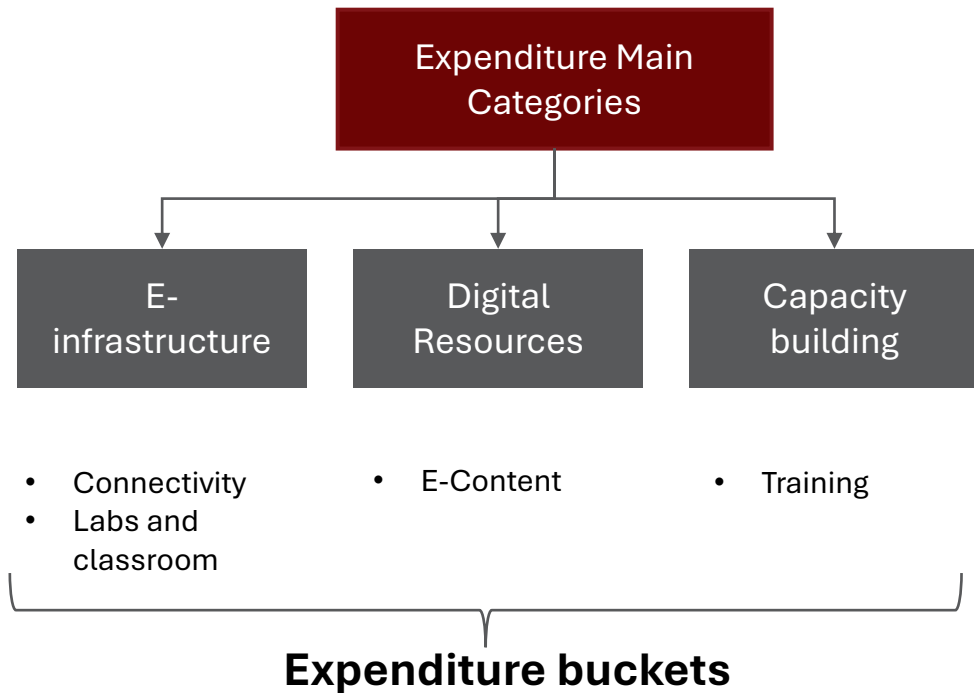
- WCED exceeded its target for the rollout of smart schools in all years
- The Department uses a cascading model where district e-Learning teams train teachers in foundation e-literacy.
- The WCED also partners with companies (e.g., Microsoft) to train teachers in foundational e-literacy. This model also reduces the cost of training.

Trends in spending on e-Learning



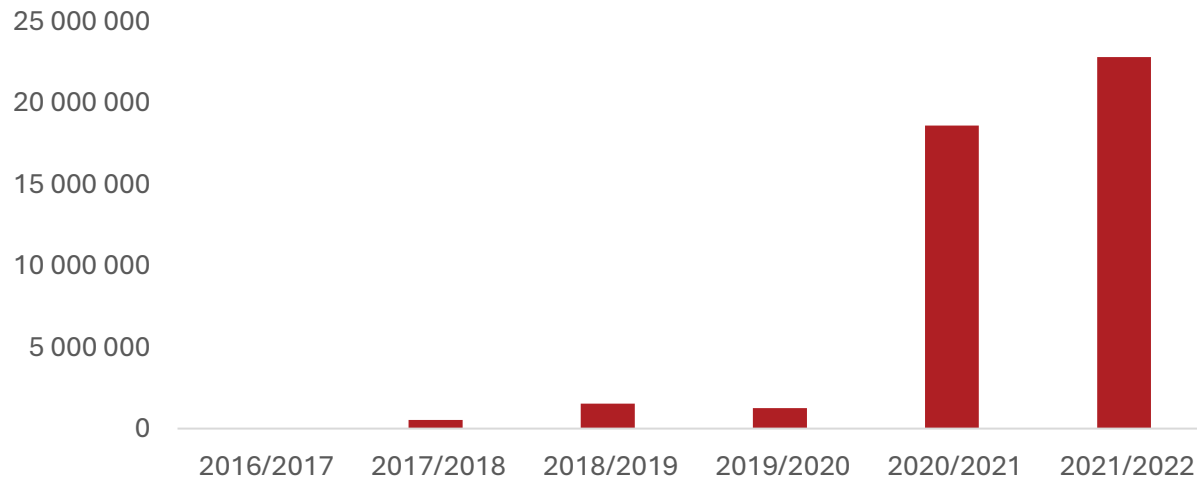
- From 2016/17 to 2021/22, the WCED invested R1.889 billion in the e-learning programme.
- Expenditure peaked at R388.6 million in 2017/18 and has since decreased to R299.4 million.
- As more schools are activated with broadband and equipped with local area networks (LANs), expenditure on the programme has declined.
- The amount spent on e-learning underestimates total spending on connectivity as those schools without connectivity receive a subsidy from the WCED.
- The drop in the 2020/21 financial year is due to the COVID-19 pandemic which curtailed the activation of broadband and installation of LANs.

Main categories of spending



- 86% (R1.62 billion) of the total spending on the e-learning programme between 2016/17 and 2021/22 was dedicated to e-infrastructure. This includes LAN activation in schools and the digitisation of classrooms, such as the development of smart classrooms.
- E-content development, which encompasses content creation for broadcasting (Telematics) and the WCED e-Portal, accounted for 7% of the total spending over the period.
- Capacity building expenses made up less than 2% of the total training expenditure. This is partly due to the WCED’s utilisation of e-learning teams in districts to train teachers, which helps keep training costs low.

Management Fees and maintenance spend



- Management fees grows at an annual average of 48% over the period.
- Management fees include the amounts paid to the main contractor for the management of the LAN rollout.
- Expenditure on LAN maintenance and repairs has increased significantly in 2020/21 and 2021/22.
- The increase in expenditure can be attributed to the rise in the number of schools with LAN installations and the aging infrastructure of existing schools.
- As a result, the WCED should anticipate a further increase in expenditure on maintenance and repairs in the future.

Unit cost - LAN

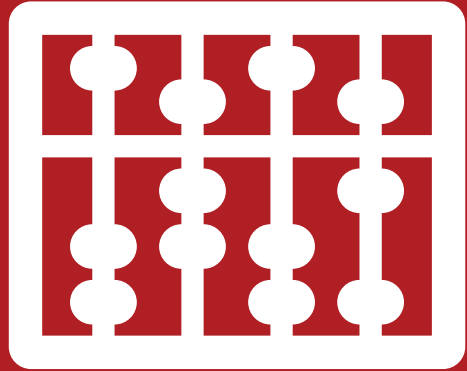
Implementation cost of LAN per school

e-Learning	Total Connectivity cost	Number of LAN Implemented at schools	Cost of LAN activation per school	Yr on Yr increase
2016/17	178 992	143	1 252	
2017/18	176 684	135	1 309	5%
2018/19	224 969	147	1 530	17%
2019/20	271 798	157	1 731	13%
2020/21	163 722	79	2 072	20%
2021/22	212 959	92	2 315	12%

	No of schools	Average Cost per LAN activation	Forecasted expenditure (R'000)
Schools activated for BB but without LAN	394	2 315 000	912 110 000
Schools not activated for BB and without LAN	246	2 315 000	569 490 000
Total required			1 481 600 000

Amount required to achieve activation of LAN in all schools

- The average cost per LAN activation per school in 2021/22 was about R2.3 million.
- The average cost per school has increased significantly from 2016/17 when it cost about R1.2 million per school.
- The price increase is the result of various factors including:
 - Rand depreciation (as many of the LAN components and equipment is imported)
 - Price surges due to global supply chain bottlenecks (especially in 2020/21)
- For those schools where broadband has been activated, LAN installation will require another R912.1 million.
- There are 246 schools in the province that still do not have broadband. Once these schools come online, the province would need another R0.5 billion to complete the LAN activation and achieve full coverage.



Main Takeaways

Main takeaways



There has been significant headway in expanding broadband access to schools throughout the Western Cape. Approximately 84% of all schools have access to broadband, with the understanding that 87% of these schools having access to a 200 mbps connection, which is considered very fast internet.

On the one hand, access to broadband is lower in Quintile 1 schools which account for the poorest 20% of learners. However, LAN activation rates, are highest in Q1-Q3 schools.

The expenditure of the e-Learning programme is driven by connectivity expenditure. During the initial years of the programme, the cost of installing LANs was the main contributor to connectivity costs. However, recently, maintenance costs have increased significantly as the e-Learning programme evolves.

The province will need about R912 million to activate LANs in broadband-enabled schools. They will need another R563 million to expand LANs once all schools have been connected to broadband.

THANK YOU

