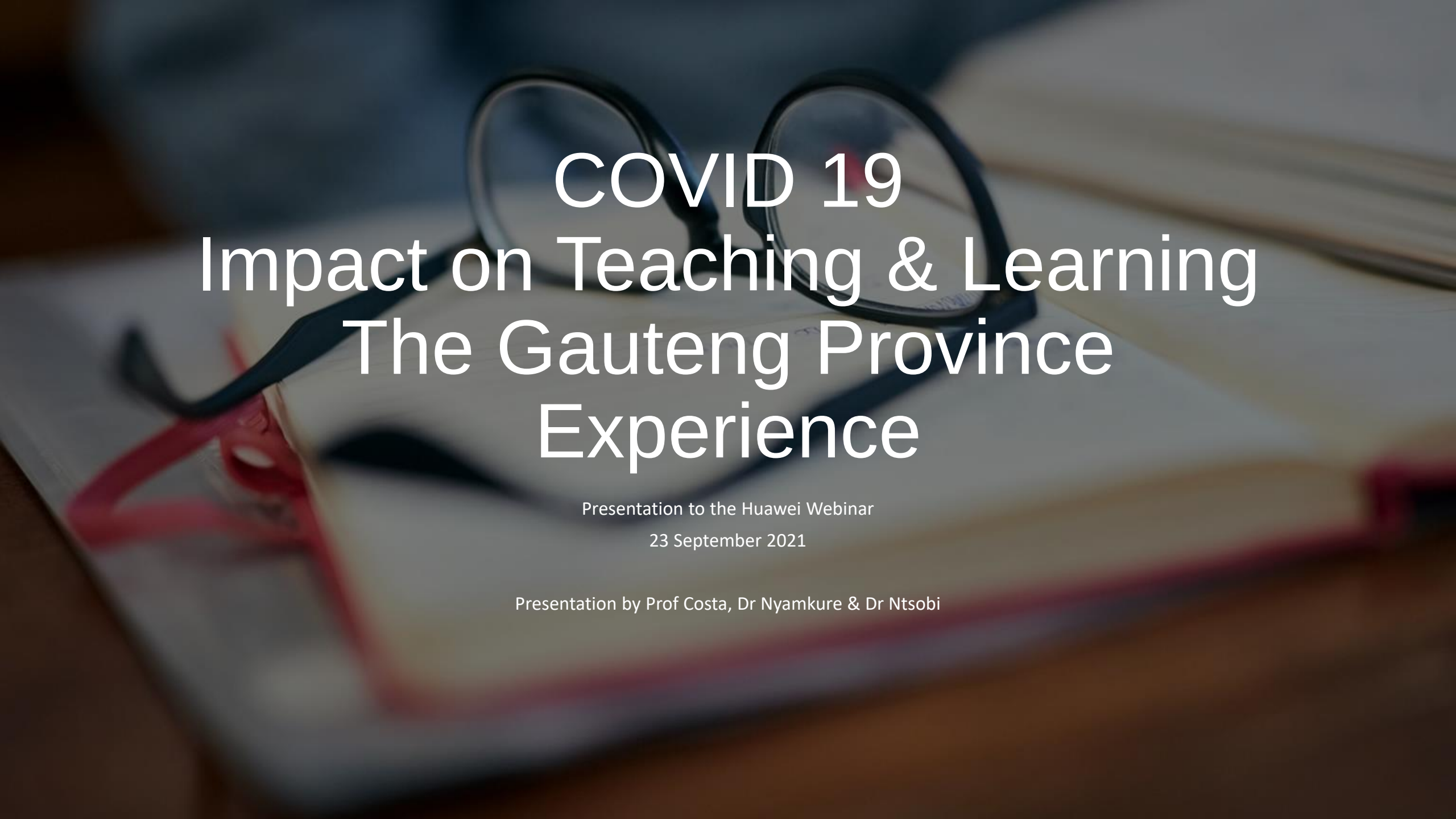

COVID 19
Impact on Teaching & Learning
The Gauteng Province Experience

Presentation to the Huawei Webinar

23 September 2021

Presentation by Prof Costa, Dr Nyamkure & Dr Ntsobi

Content

1. Background
2. The GP Education ICT/eLearning Solution
3. Repositioning of the classroom based solution to support Virtual Learning.
4. Three year rollout plan (2021-2024)
5. Lessons learnt
6. Challenges and recommendations

Background

- The effect of Covid19 has forced many institutions to rethink their delivery models. The GDE was compelled to adjust to the new normal to prevent disruption to teaching and learning by unlocking efficiencies emanating from the existing **ICT**, **multi-media** as well **as broadcasting resources.**

"Curriculum constitutes the core of teaching and learning therefore when teaching and learning cannot take place, the essence of schooling is not achieved." **(DBE, Curriculum Recovery plan 2020)**

- Technology provides for **an alternative platform for curriculum delivery** with more agility and adaptability to address the educational needs of the learners more specifically and on point. The GDE had to leverage on existing ICT Projects which were government funded and some through corporate social investment initiatives.

A Case for ICT in Gauteng Schools

- ❑Improving educational outcomes
- ❑Increasing learner performance
- ❑Improving learner engagement
- ❑Changing the classroom experience

- ❑Introducing new skills for curriculum delivery
- ❑Unlocking administrative efficiency
- ❑Preparing learners for the 4th Industrial Revolution
- ❑Changing the face of the township education by fast-tracking school infrastructure rollout
- ❑ Ensuring data-driven decision making

ICT Support for Stakeholders

- **Develop teachers**
  - Curriculum knowledge
  - Pedagogy and technique
- **Help teachers teach better**
  - Improved lesson delivery
  - Tailored learner insights
  - Portfolio of additional material

Provide access to engaging material

- Interactive and adaptive material
- Comprehensive quantity
- **Provide access to teaching**
  - Independent learning
  - Remedial lessons
- **Increase social cohesion**
  - Bridging the socio-economic gap between learners

- **Enhance performance management**
  - Learner and teacher transparency
  - Analysis and insights
- **Improve administration**
  - Timetable scheduling
  - Human Resources
  - Finance
- **Strengthen "Centre" support to schools**
  - Identification and prioritisation of problem areas
  - Coordinated delivery of targeted improvement initiatives

Elements of the Strategy

1. **Infrastructure** – minor refurbishments to convert classrooms into smart classrooms.

2. **Devices** – provisioning for classroom, teacher and learner devices.

3. **Connectivity and maintenance –** providing connectivity on wide area network (WAN), local area network (LAN) and APN.

4. **e-Content –** static and non-static content including eBooks and multi-media content.

5. **Professional Development –** Training for educators, learners and parents stakeholders

6. **Security-** physical security, electronic security, tracking, recovery and mobile device management (MDM).

7. **Research, Knowledge management & Innovation –** Recording implementation, conducting impact assessment and knowledge discovery.

Approach

An audit of all the existing investments was been conducted with a view to identify the gaps, consolidate, repackage and respond with a virtual classroom solution in preparation for a worst-case scenario.

The current ICT investments predominantly provide for a classroom solution with limited configuration to cater for virtual learning which is mostly needed under the prevailing conditions.

The enhanced solution sought to cater for an eventuality where the learners and the educators may not be under one roof because of lockdown complications.

The **Virtual Classroom Model** was therefore conceptualised leveraging on the existing infrastructure .

The Virtual Classroom Model **strikes a balance** between ensuring that learners and teachers are well resourced, whilst at the same time creating a conducive environment for virtual learning.

Existing ICT and Multi-media Resources within the GDE

Gauteng Online

- 1600 schools benefited through the installation of computer laboratories between 2008 and 2013.

GBN

- The Gauteng Broadband Network has been installed in all GDE offices as well as 500 schools with GBN Wide Area Network.

E-Content

- Over 602 ICT implementing schools have been provided with e-books and GDE multi-media content.

Virtual Classroom

- The Telkom Foundation has proposed training of teachers in Microsoft Teams to facilitate virtual and remote learning.

Paperless Classroom

- The project has benefited over 602 schools with tech-enabled resources such as LED boards , micro servers , teacher laptops and learner tablets.

Broadcasting

- GDE and Sci-Bono have partnered with the SABC to broadcast lessons through radio and television. GDE owned broadcasting studio being built in collaboration with Sci-Bono.

Broadcasting solution

- The studio will have High Definition (HD) capability.
- It will allow for group activities to take place.
- It will be able to conduct physical science experiments, showcase coding and robotics etc.
- Stream live through a You-Tube Channel.
- Virtual classrooms will also be done and streamed live through smartboards in ICT Enabled schools and Full ICT schools and enable interaction during the lessons.

Visuals of the studio

Using ICT Investment to respond to COVID 19 challenges

- Most of the successes currently observed in schools arise from the gains that were realized through the ICT and e-Learning rollout in the 5th administration and early 6th administration, but prior to COVID-19.

- Many schools have had some exposure to an ICT and e-Learning curriculum prior to COVID, though the major limitation was that it was primarily focused on classroom-based teaching.

- Teachers and learners have had some exposure to digital learning technologies, although the extent to which the curriculum substantively integrated digital content for the different subjects would have varied by school, depending on capacity.

- Teacher training had already started to incorporate e-Learning as a paradigm shift that would become mandatory for all teachers and irreversible going forward.

- Gauteng had already established a basis for implementing innovative ICT solutions, with proven implementation capacity, which became critical in mobilising the kind of sponsorships which GDE had in the ICT space with broadcasters and mobile providers.

Using ICT Investment to respond to COVID 19 challenges

- Access to broadcast media, online platforms, zero-rated sites which were facilitated through our engagement with partners, has contributed to expanding access to relevant curriculum content for teachers and learners.

- Despite some limitations, COViD-19 has accelerated the shift toward digital platforms and remote teaching and learning in Gauteng.

- There is a general acceptance by stakeholders that e-Learning is not just the future but is the ‘new normal’. Parents are stretching budgets to facilitate learner access to online learning, etc.

- Some independent schools proposing to offer an almost 100% online model, which whilst needs to be tested, suggests there is a growing appetite for e-Learning amongst Gauteng parents and learners.

Challenges posed by COVID

- COVID-19 has had a differential impact on learners. Poor learners have been disproportionately affected. The biggest challenge remains household/learner access to connectivity, and to devices to some extent, especially in poor households.
- The shift to a blended learning approach, with focus on remote teaching and learning, needs to be accelerated.
- This shift is complicated by the current focus on curriculum recovery to make up for learning losses - it means curriculum approach, including curriculum materials, teacher development, etc. have to be adjusted for both digital learning and an adjusted curriculum.
- This complexity extends to the teacher development Programme.
- Due to delays in infrastructure delivery under COVID-19 restrictions, conversions to smart classrooms was also delayed, which affected the overall rollout in this Programme.
- COVID-19 has highlighted challenges for ICT governance, which is all the more urgent now, as we shift from a project approach to a whole system approach.
- Parents and caregivers expected to support remote teaching and learning, but assistance is relegated to schools.
- ICT may become source of inequality as schools have different capacities. Need comprehensive minimum package of support to parents.
- System for schools and stakeholders to reliably report on ICT usage. Reliable usage starts to be generated and used as part of planning for e-Learning and curriculum rollout.
- System for schools and stakeholders to reliably report on actual usage for curriculum purposes, nature and extent of usage to be strengthened.

Next Steps

- Accelerate the Grade 10, 9 & 8 classrooms to complete the township fee and no fee schools.
- Enhance the Content Platform with relevant content for all the Grades starting from the foundation phase.
- Complete the building of the GDE studio.
- Continue with the content , connectivity and device rollout for the Full ICT schools and prioritised grades based on the GDE ICT strategy.

Next Steps

- ❑ Strengthen change management practices.
- ❑ Support the Teacher Development Programme to cover the remaining grades.
- ❑ Professional Development to cover:
  - Orientation
  - Advanced training
  - Onsite support
  - Content development
- ❑ Monitoring and evaluation to be strengthened.
- ❑ Research and innovation to inform future rollout plans.

Teacher Development Plans

- Teacher Development plans on the introduction of ICTs in schools focused on capacitating teachers on the use of digital resources for teaching and learning with three key indicators being adoption of ICTs, utilization and purposeful integration of ICT into teaching and learning.

- Head Office and District support programs focused on collaboration and how officials may support the integration of ICTs in schools.

- A target of 14 000 teachers was set for the FY2015-2019 and a total of 10 189 (verified) teachers were trained between Grade 10-12.

- The UWESU (2016) report on the pilot conducted for 5+2 schools recommended a differentiated approach into teacher and stakeholder development.

- The Wits E-Readiness report (2017) suggested that training content should focus on ICT integration as opposed to device oriented training which was done away with towards the end of the 5th Administration.

- The ICT impact study was commissioned in (2019) to evaluate the implementation of ICT Teacher Development.

Repositioning of Professional Development

- **Challenges**
- The Lockdowns resulted in the **reprioritization** of Professional Development programs and revision of targets downwards.
- This has resulted in **over subscription** in certain programs.
- **Internet access** was a challenge for remote and online training programs.
- The top up system for data has proven to **be expensive** in schools where there is no internet access.
- **Self directed** professional development is **new** and most teachers struggled with tethering problems

Successes

- 90% of the planned PELRC programs have **been implemented**.
- Preliminary findings from the Teacher Development impact study report indicate that Teachers have a **positive perception** of training interventions provided.
- Remote and online training has been **positive** despite tethering challenges in the initial stages of implementation

In Progress

- Teacher Professional Development is currently offered remotely and online.
- Development of SSIP Instructor video for content based training.

Learning Management System

- There is a need for the Province to **establish digital learning** through commissioning **Learning Management Systems *(designed specifically to manage and facilitate teaching and leaning)*** for individual schools.

- This will enable schools to **institutionalize** teaching and learning through **LMS platforms.**

- Enable teachers to facilitate teaching & learning online through the **development of online learning content and uploading assignments and learning resources.**

- To achieve this a **multi-stakeholder approach** is required in the form of a **cloud, platform licences, digital learning devices**

- The **coordination** to be done through the District and the School Based ICT Committees **to support of this intervention**

- A **maturity model *(evaluation Model)*** will be **developed** to measure the impact of digital teaching learning.

Research, Monitoring & Evaluation

- The Policy evaluation will center it's focus to support the development of Theory of Change of the Virtual Learning Program in order to ensure that intended outcomes are achieved as desired tallying these with overall legislatives mandate of ICT in the Department.

- The importance of a properly designed Theory of Change will ensure the following:
  - Conduct Formative evaluation of the Implementation of the Program
  - Conduct Summative Evaluation to measure the Impact of the Programme

Research, Monitoring & Evaluation

- GDE will utilize the identified key three focus areas of Whole School Evaluations when conducting External WSE.

- For schools that participate in the virtual classroom, the following will play a key role monitoring & evaluation:
  - ✓ Evaluation of **Quality of Teaching & Learning and Educator Dev**.to assess how teaching & learning is taking place inside a virtual classroom
  - ✓ Evaluation of **Learner Achievement**, to assess how successful learners are learning in the virtual classroom including assessments & improvement of learners scores
  - ✓ Evaluation of **Curriculum Provisioning & Resources**, to assess how these resources are utilised maximally in the virtual classroom
  - ✓ Evaluations include the support that both district & H/O is providing to these schools

- The end product of each School evaluation will be a comprehensive report for that will provide feedback to the project.

- The report containing findings & recommendations on the three focus areas will be compiled for interventions by various directorates & stakeholders.

Sustaining ICT in Schools

Key factor	Proposed solutions and recommendations
Replenishment and sustenance - lifespan of an ICT gadget is two to three years	• Extend the lifespan between 48 and 52 months; • Consider other procurement models such as rental and lease; • Bring own devices; • Reconsider the current specifications and opt for cheaper but equally compatible and durable technology
Lack of ownership of ICT project by schools	• Decentralize the ICT project to schools to take ownership. • Support from principals and parents is necessary for the institutionalization and longer-term sustainability management of ICT facilities
High costs implications	• Viable financial model is required to sustain the project. • Measures to minimise the costs should be considered • Building strong partnership with stakeholders to supplement the ICT project. • Search for low cost solutions
Security solution to safeguard the investment made	• Physical Security Security Cluster activation • Electronic Security Tracking • Community Mobilisation to care and ensure the security of the device provided to the learners
Training and Support Solution	• Continuous capacitation of all participates at different levels to ensure sustainability.

Impact

- Improvement in learner attainment in gateway subjects.
- Acceleration of infrastructure refurbishment.
- Less Admin = More teaching Time.
- Improved teaching methods/ Versatility and link between preferred learning preferences through the use of technology.
- Improved content and pedagogical knowledge.
- Improvement in the culture of teaching and learning. (Improved engagement and attitude)
- Improved ICT usage by both learners and educators.
- More township schools now have connectivity used for teaching and learning.
- e-Content is now made available bringing about excitement in the classroom experience. Improved Attendance.
- Improvement in the ICT skills among educators and learners equipping skills for the future.

Benefits

1. **Working towards achieving the goals of TMR**
   - Creating job and entrepreneurial opportunities for township-based enterprises.
   - Modernising the classroom and using technology for curriculum delivery.
   - Creating production and assembly plants to save on import duties.

2. **Changing the face of township education**
   - Sizable reduction of infrastructure improvement backlog in township schools.
   - Managing the residual overcrowding in public ordinary schools and the influx in former model C schools.

3. **Bringing about change in the classroom experience**
   - Innovation , creativity and excitement.
   - Interactive classes and unlocking efficiencies on lesson delivery.
   - Time spent in class and material enhancing learning.

4. **Reduction in LTSM spent**.
   - Reduction after capital input.
   - Developing own content to distribute through content platform.

Pedagogical Gains

- Improved educational outcomes
- Improved Grade 12 learner performance in Full ICT Schools between 2017 and 2020 academic years
- Changing the classroom experience
- Introducing new skills for curriculum delivery
- Preparing learners for the 4th Industrial Revolution

Project Success

- The successes of the project during the previous phases are worth noting include amongst others the following:

  - Functional School and District-based ICT Committees.
  - Peer–to–peer coaching taking place in some surveyed schools.
  - Successful implementation of ICT integrated matric revision programme.
  - Skills transfer to district officials in training and material development in ICT.
  - Change of learner and teacher behaviour.
  - Easy access to e-Content.
  - Revamped and renovated schools to keep up with the technological revolution.

Recommendations

- Need to accelerate shift in strategy from ICT projects/interventions (targeting specific grades, etc.) to whole school/systems approach. This shift has implications for resourcing both short and long-term.

- Enabling remote teaching and learning as a long-term strategy, regardless of how COViD-19 behaves. Poor households most will be mostly affected.

- Parent/Care Giver support - Comprehensive package of support needed for parents: guidelines, training, support platforms, data packages, device packages.

- Need to explore even more innovative solutions through partnerships - preferential rates to parents e.g. discounted fibre to the home, data and devices packages.

- National to set strict targets and follow up on Universal Service Access Obligations.


LSM
Network
Digital Content
Portal
THANK YOU