Education Policy
For Inclusive Economic Growth During Fiscal Consolidation

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2024.10.03

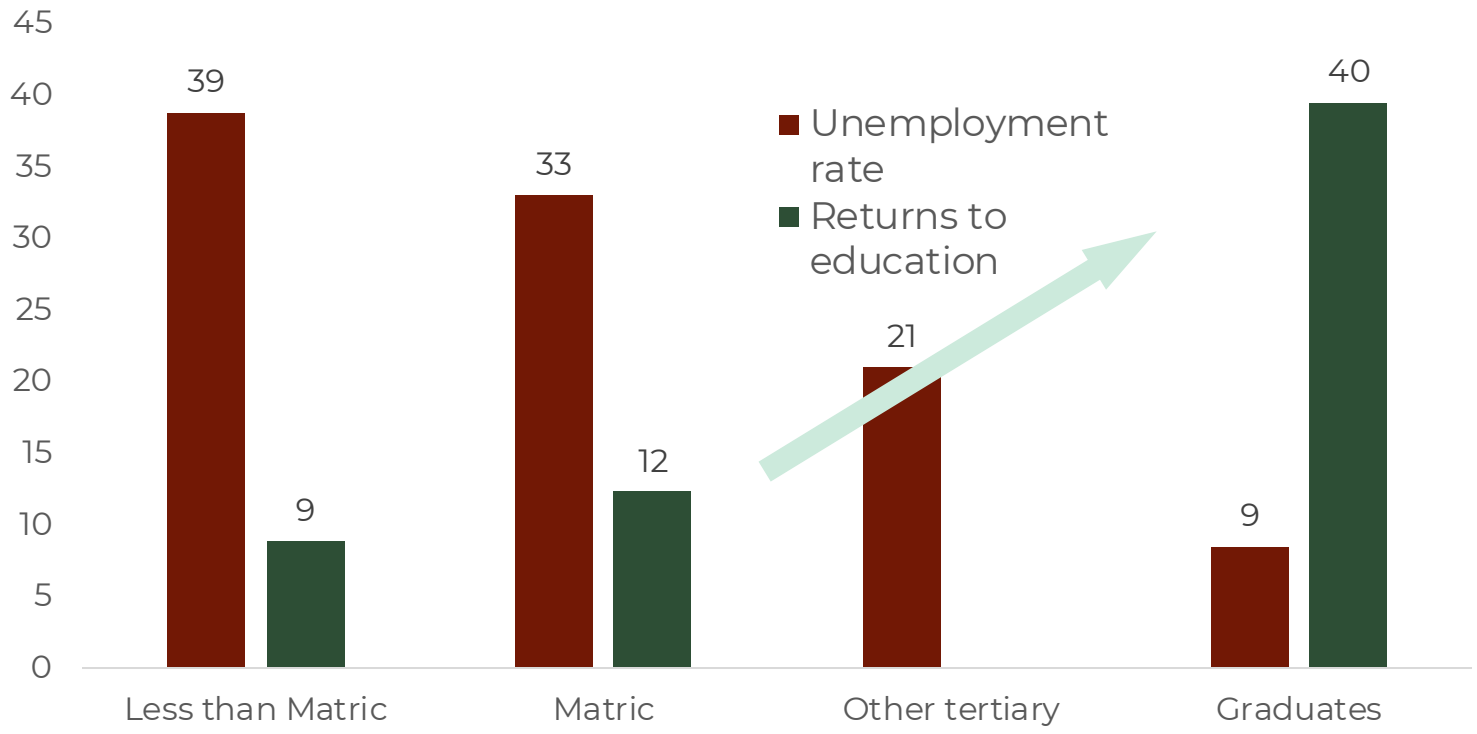
Presentation goals

- Overview the State of Education
- Propose a marginal additional tax-payer approach to education policy for growth
  - The focus should be on learners who will enter university but not complete.
  - This requires focus on foundational numeracy and literacy, as these effects likely compound.
- Highlight the report's nine education policy for growth recommendations
  - Derived from the DBE & DHET's policy documents and local & international research.

Part 1: State of Education in South Africa

Steeply convex returns to schooling & the marginal approach to ed for growth

Unemployment rate & return to education by education level



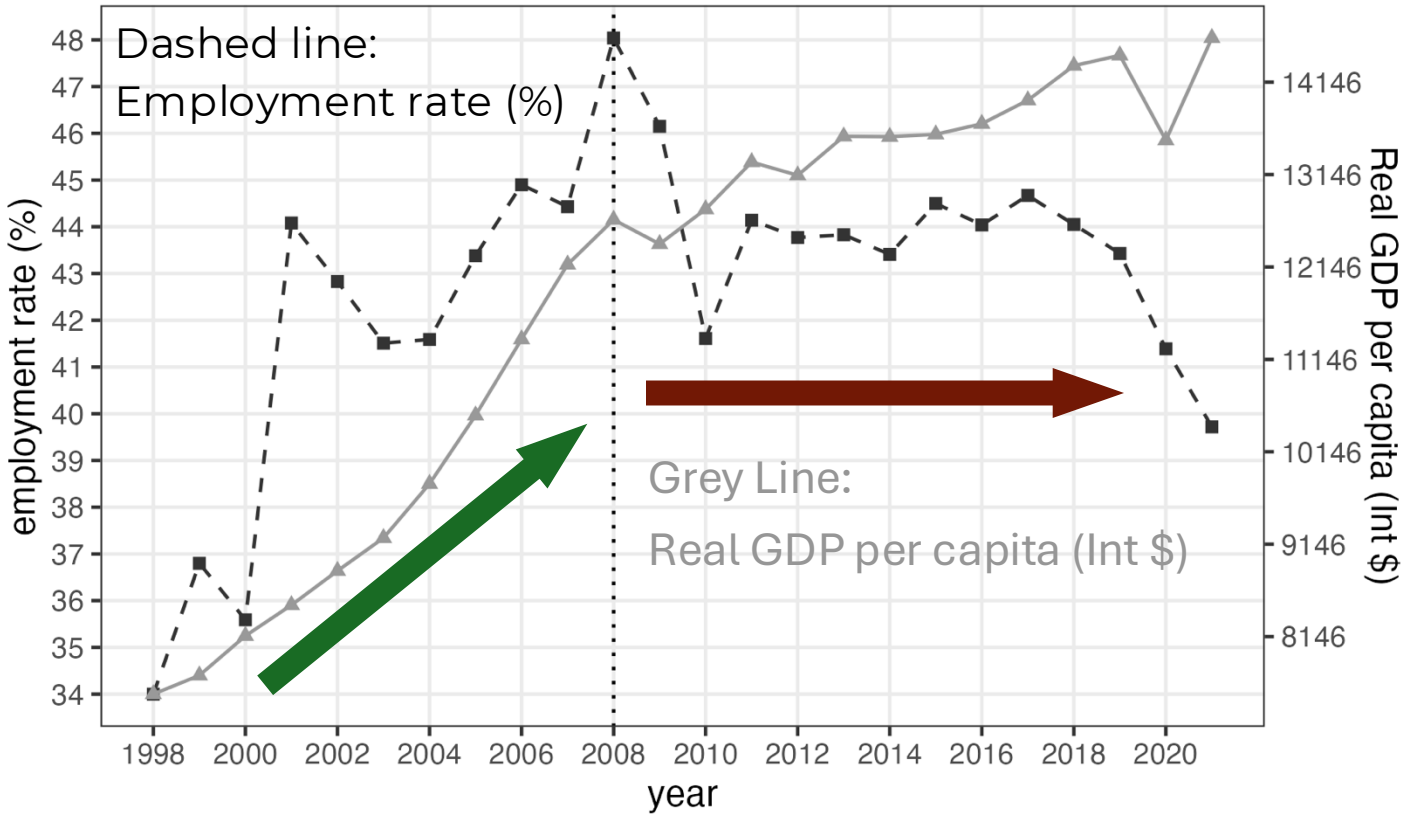
Source: Author from StatsSA QLFS 2023 & Montenegro & Patrinos (2014)
Returns to education are calculated as the percent income increase on no education only amongst the employed

Implications

- Increasing employment should be the central goal of education policy.
- There are no employment or income returns to a year of schooling without completing matric (Broekhuizen, 2013).
  - The GEC might change this .
- The employment and income returns to a university degree are substantially greater than a matric certificate.
- Increasing the tax base and the sustainability of education requires a reorientation towards those who are at the margin of receiving a degree but do not.
- Economic returns to education in South Africa are in the top 5 globally (Montenegro & Patrinos, 2014).

It is a myth that South Africa experienced jobless growth

SA has only experienced job growth during rapid GDP growth



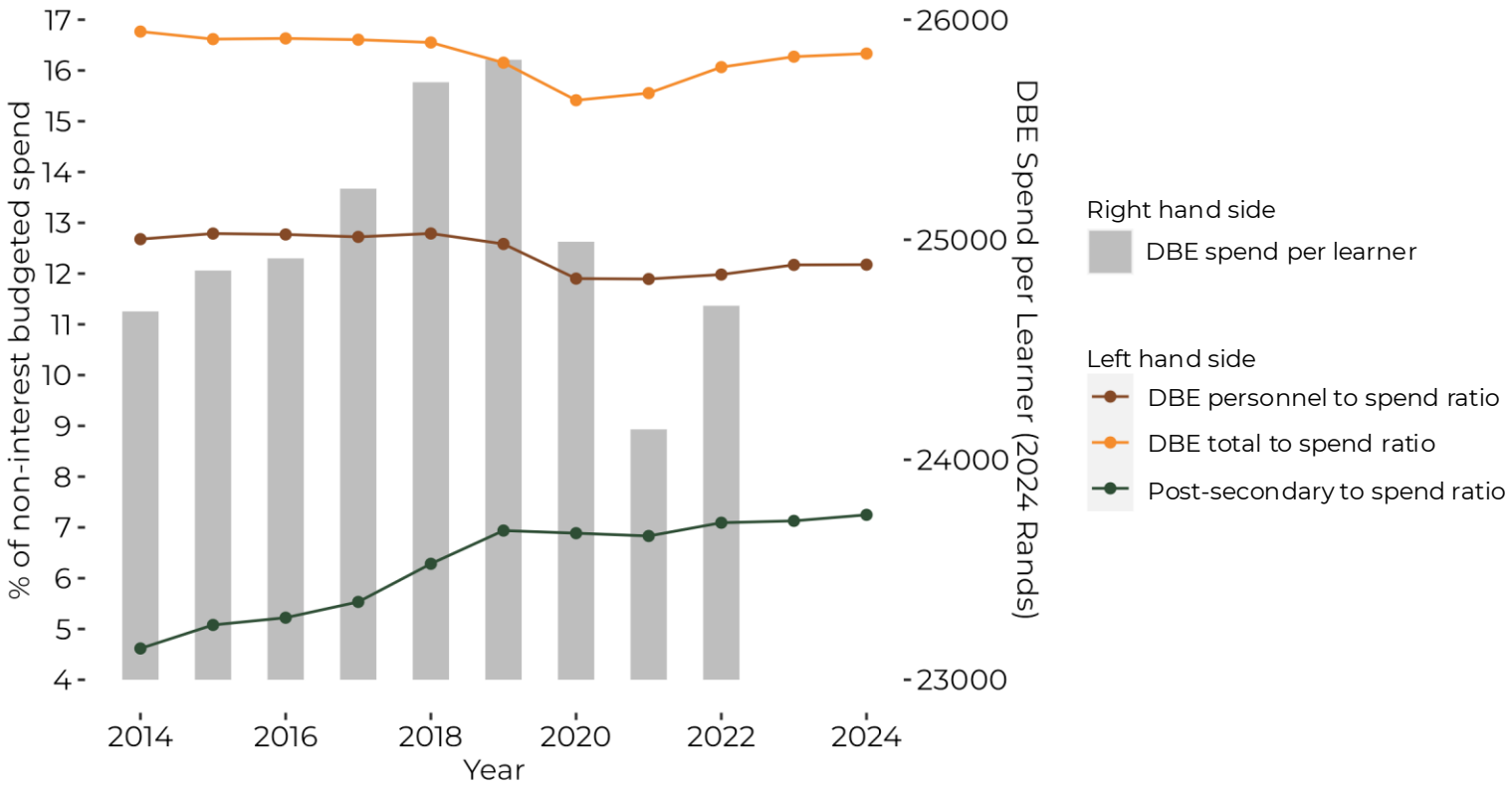
Source: Author from Statistics South Africa National Estimates
World Development Indicators database, World Bank
2021 International Dollar, Eurostat-OECD PPP

Implications

- Growth-oriented policy is often dismissed as not being sufficiently inclusive.
- However, South Africa's only period of real employment growth happened during our period of rapid GDP per capita growth (1998 – 2008). (See also Burger et al., 2016).
- Focus on an education system that is self-sustaining through future employment and taxation is critical for the welfare of the average South African.
- That human capital is the primary driver of long-run growth is becoming widely accepted (Hanushek & Woesman, 2021).

Shift in budget: slight decline in basic education, increase in post-secondary

National education expenditure overview 2014 - 2024



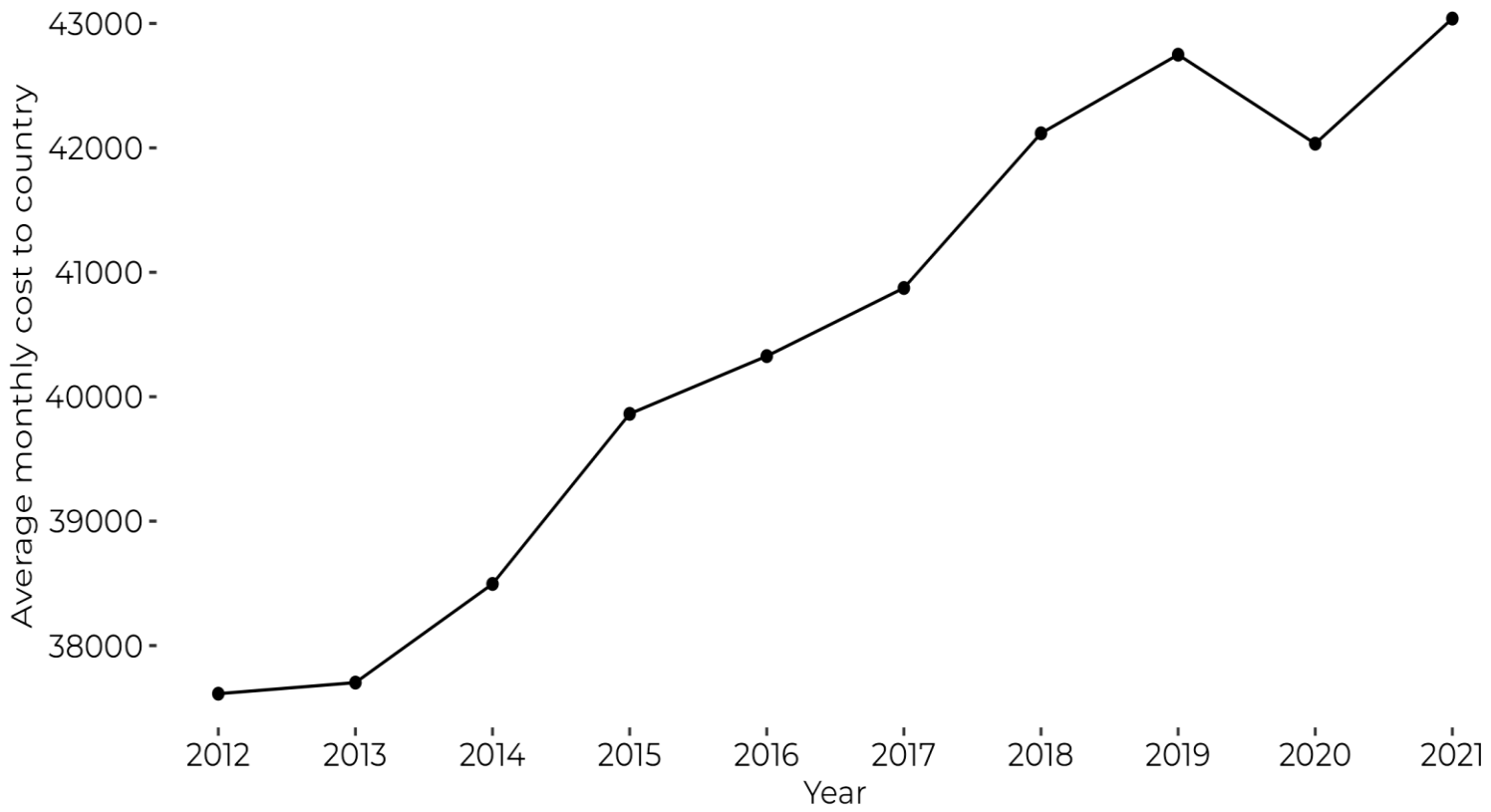
Notes: 2023 and 2024 learner enrolment numbers are not yet available.
Unbudgeted wage bill negotiations are not accounted for in the figure.
Source: Author from National Treasury (2014-2024) & DBE (2015-2023)

Description

- Basic education budget allocation has declined modestly from 16.8% to 16.3% of non-interest expenditure.
- Post-secondary education budget allocation has increased from 4.6% to 7.2% of non-interest expenditure, **a 56% increase.**
- In 2022, expenditure per learner returned to its 2014 real value of R25000 (in 2024 Rands), in part due to ECD funding handover **(?).**
- South Africa spends 30% more on education as a fraction of total expenditure than the average Upper Middle-Income country (UNESCO, 2022).

Educators are well paid by international standards

Cost to country of South Africa's educators (2021 Rands)



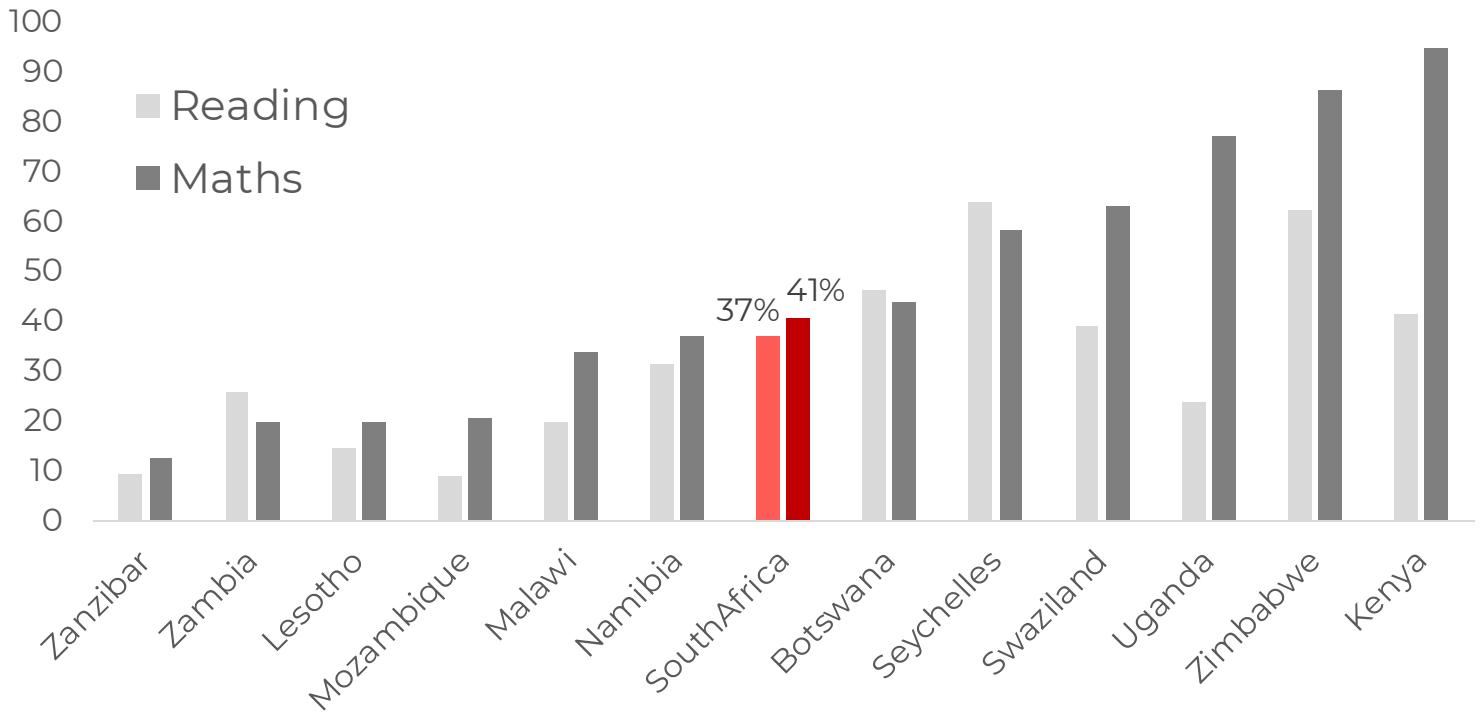
Notes: 2017 interpolated
Source: Author, Payroll data: PERSAL, enrolments: DBE (2013 – 2022), CPI: Stats SA

Discussion

- Including benefits, educators earned R43000pm in 2021 compared to R38000pm in 2012 (in 2021 Rands).
  - In 2014, the top 3% of South Africans earned R42500pm in 2021 Rands (Woolard, Bassier, 2021 using SARS data).
- Between 2007 and 2021, educator salaries increased 66% in real terms (Sachs, et al., 2022).
- South African educators are paid 5x GDP per capita. No country in the OECD has a multiple larger than 2x, with the average just over 1x (OECD, 2011).
- There is growing evidence that increasing salaries does not improve learning (de Ree et al., 2015) and decreasing salaries does not impede learning (Bau and Das, 2020).
- Internationally, lower-paid contract teachers perform better than permanent & or unionised teachers (Duflo et al., 2015).
- Teacher income comparisons based on household possessions are sensitive to misreporting and are irrelevant for national cost evaluations.

Poor educator content knowledge binds learning

Percent of Grade 6 educators achieving mastery in their subject in SACMEQ IV (2013)



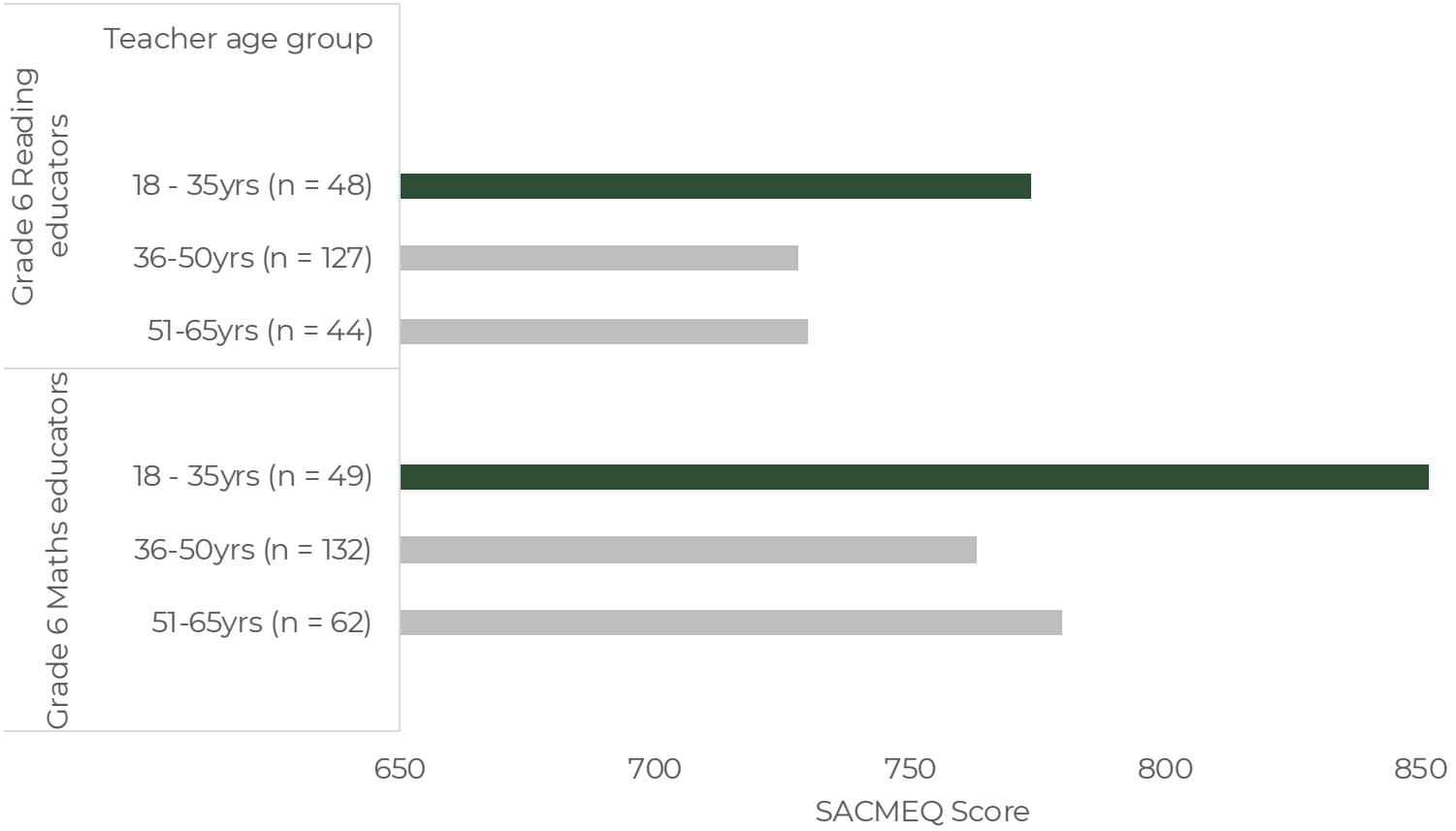
Source: Author from Awich (2021)
These data are learner-weighted, such that they technically represent the % of learners with teachers reaching mastery

Implications

- Achieving mastery in one's subject is likely a prerequisite to effective teaching.
- South African teachers have particularly poor content knowledge, even compared to African countries at much lower levels of development.
- Even for our low level of teacher content knowledge, South African learners underperform (DBE, 2013).
- More than 60% of Grade 6 Maths teachers have content knowledge below the expected Grade 6/7 level of learners in international examinations (Van der Berg et. Al., 2016) .

Younger teachers have substantially higher content knowledge

Educator content knowledge in SACMEQ (2013) by age



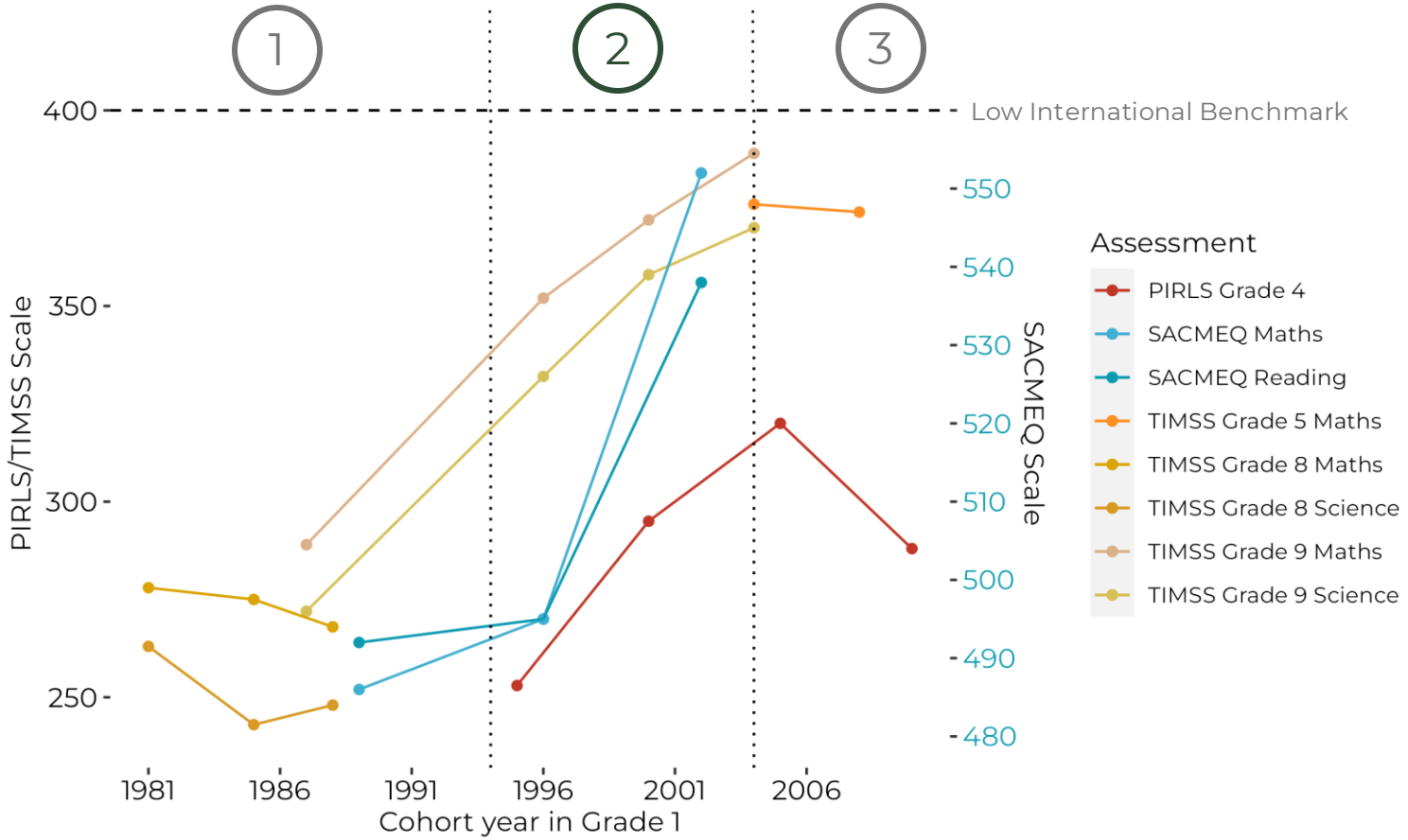
Notes: these results use raw scores unadjusted for complex sampling
Source: Author from SACMEQ IV (2013)

Implications

- The knowledge gap between teachers over and under 35 is larger than the gap between Eastern Cape Teachers and Western Cape Teachers, the provinces with the greatest knowledge gap (Van der Berg, et al., 2016).
- Younger teachers replacing the older cohort will raise average content knowledge, however, we will remain at a comparatively low level for a middle-income country.
- OSD has not relatively incentivised the educators who improve learners' learning to remain in teaching, as intended.
- OSD notches instead incentivise older teachers to remain.

South Africa has experienced three phases of learning

Maths, Science, & Reading outcomes in international exams



Notes: This figure follows the cohort at entrance to Grade 1, not year of assessment
2011 PIRLS result corrected per Gustafson (2020)
IEA does not validate the intertemporal comparability of the pre-democracy cohorts

Source: Adapted from Gustafsson & Taylor (2022, 20). Data from PIRLS (2005, 2011, 2016, ,2021), TIMSS (1995, 1999, 2007, 2011, 2015, 2019), & SACMEQ (2000, 2007, 2013).

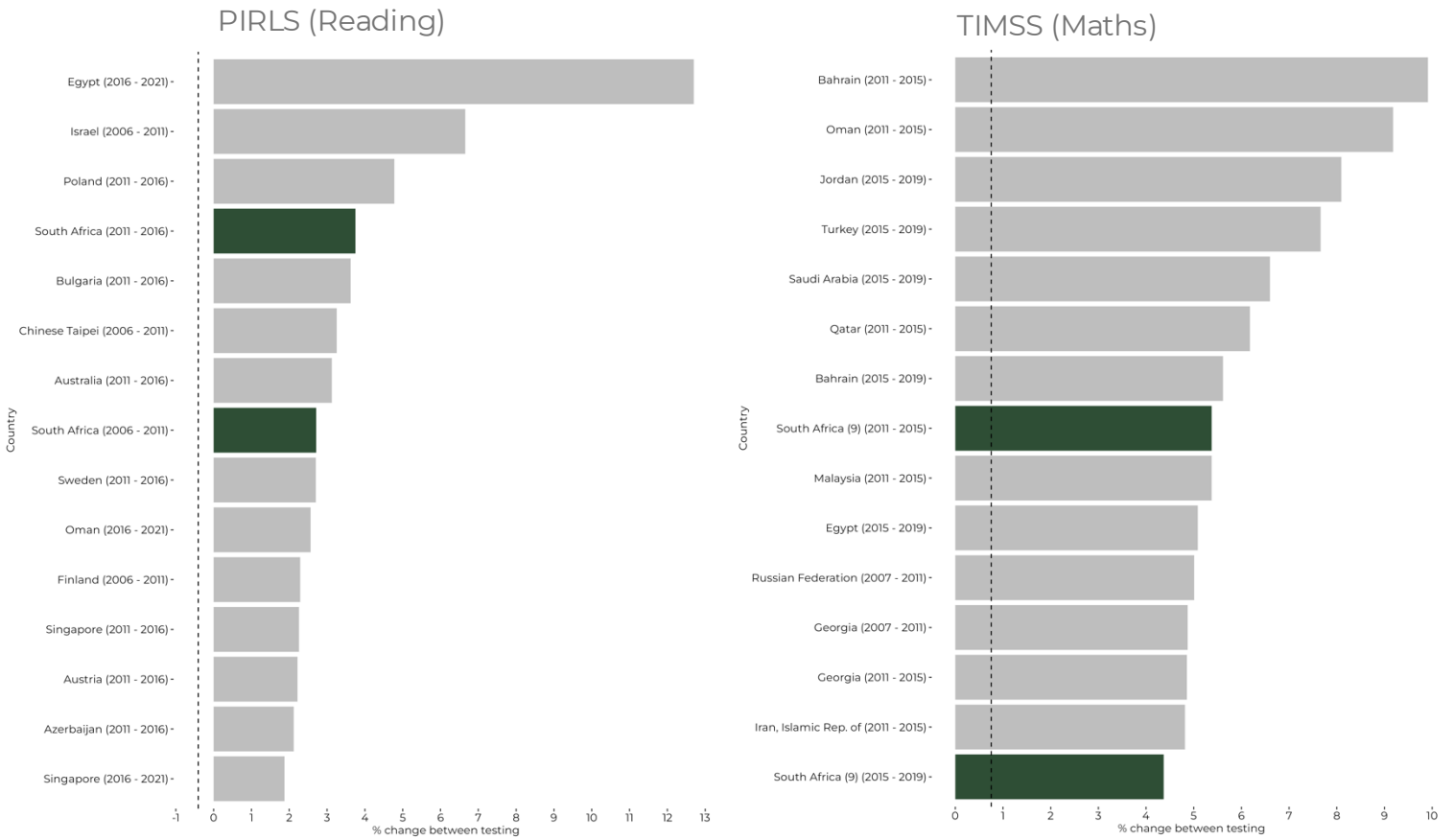
Phases of learning

1. Pre-democracy stagnation
2. Decade of Rapid Improvement
3. Pre-pandemic Stagnation and pandemic learning losses

- It is important to highlight South Africa's period of rapid & exceptional success.
- However, this success has been rather short-lived, with results never exceeding the Low international Benchmark (400 PIRLS/TIMSS points).
- The low international benchmark has come to be known as "reading for meaning' and "calculating with confidence" in the foundation phase.

South Africa's Decade of Improvement was exceptionally rapid

15 fastest periods of improvement in PIRLS and TIMSS



Notes: Grade 9 TIMSS (a year above other countries) & grade 4 PIRLS assessments shown.
Dashed lines indicate average improvement per period: -0.41% for PIRLS, 0.75% for TIMSS.
Only periods consecutively tested are included.
Improvement is shown as a percentage of IRT scores as assessments are comparable across periods, a more intuitive measure than SDs. See "How Standard is a Standard Deviation"

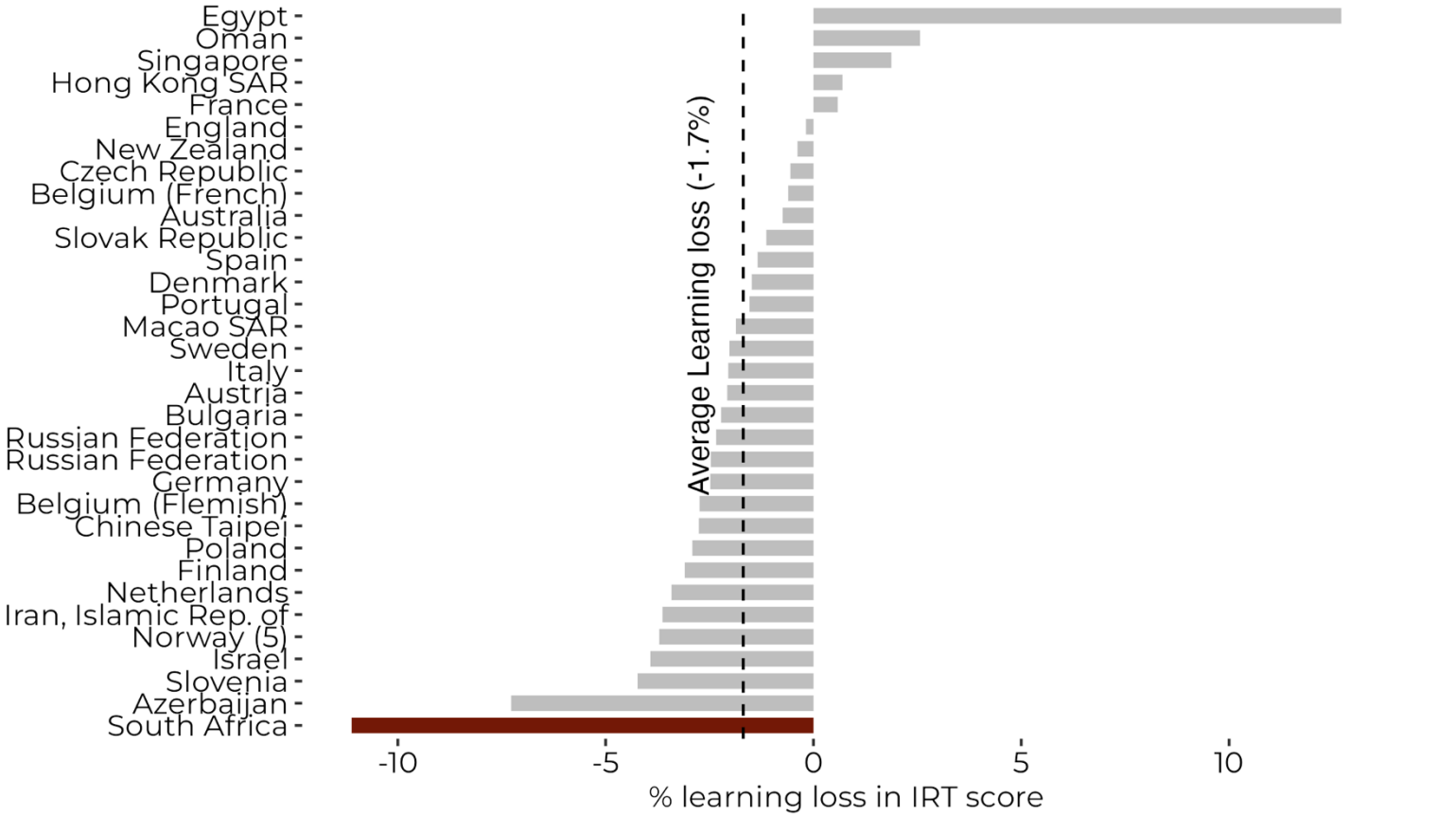
Source: Author from (TIMSS 1995 – 2019) & PIRLS (2001 – 2021)

Discussion

- The speed at which South Africa improved for a decade (period ② on the previous slide) was world-leading.
- South Africa was approaching what some have termed the systems-level improvement "Speed Limit" (Gustafsson, 2019).
- With significant pessimism in the education space, it is important to highlight we have, and can once more, achieve substantial improvements.
- These improvements are likely attributable to ambitious systems wide reforms, such as the School Nutrition Programme and the Rainbow Workbooks.
- Although this improvement is laudable, it is unclear whether there were "low-hanging-fruit" improvements and progress at the higher end of the learning distribution will stagnate.
  - For example, Poland and Vietnam have both experienced substantially faster improvement, starting from a higher base.

South Africa had the largest learning losses in PIRLS over the pandemic

PIRLS 2016 -2021 learning losses



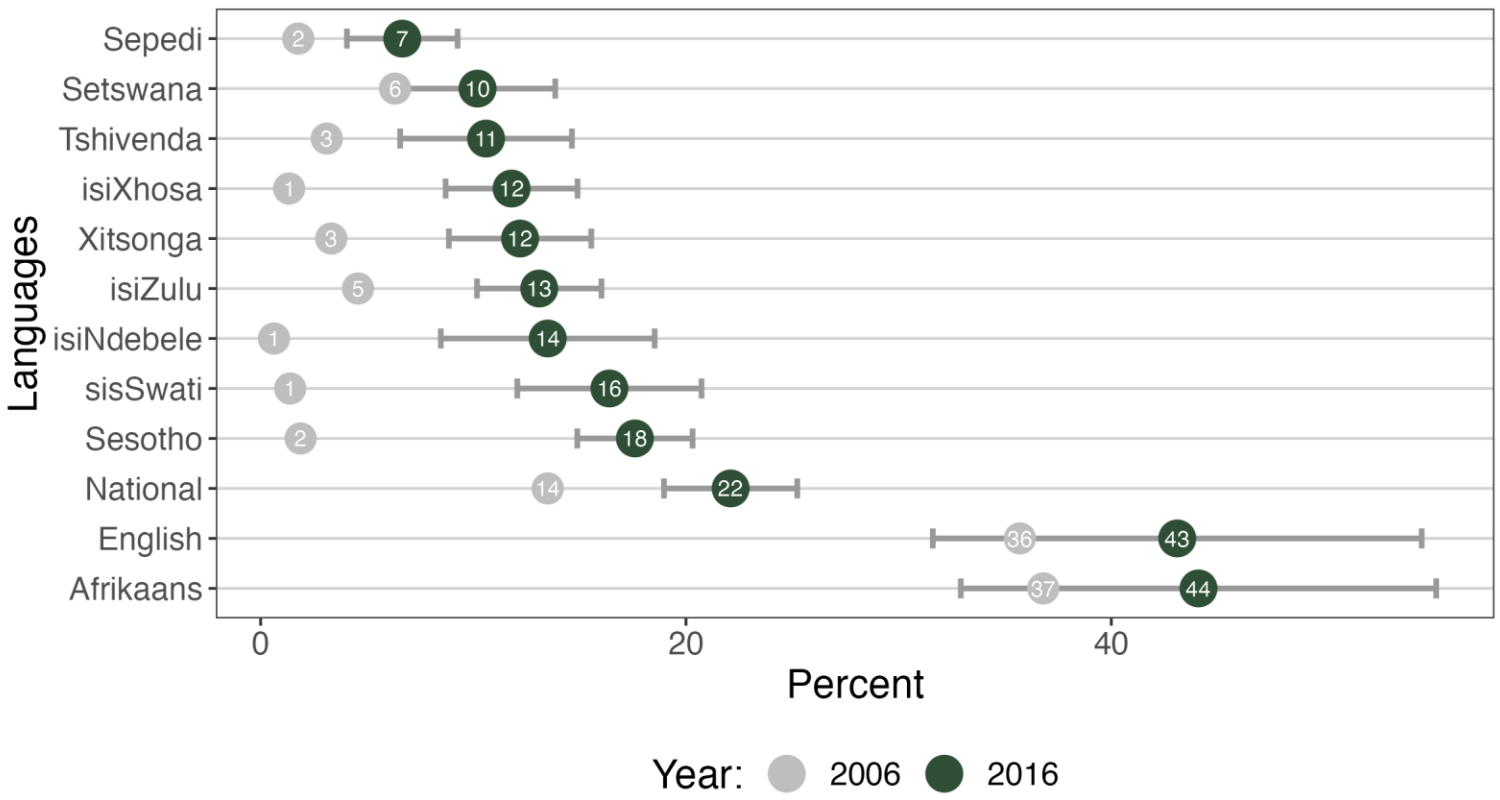
Source: Author from PIRLS 2016 and 2021

Discussion

- The pandemic has erased about 10 years of progress in learning.
- Compared to other countries, SouthAfrica fared particularly poorly, losing the largest number of IRT points, while starting at the lowest base.
- Concerns about testing validity have led to potential issues with international comparisons.
- Although these results cannot be attributed to the pandemic alone, comparison between countries remains robust, with some important caveats.
- There were signs of stagnation prior to Covid-19, notably in TIMSS Maths Grade 5, tested in 2019.
- There have been no other national representative, psychometrically valid assessments pre and post-pandemic in South Africa.

African language learners improved fastest amid great inequality

Percent reaching the low international benchmark in PIRLS



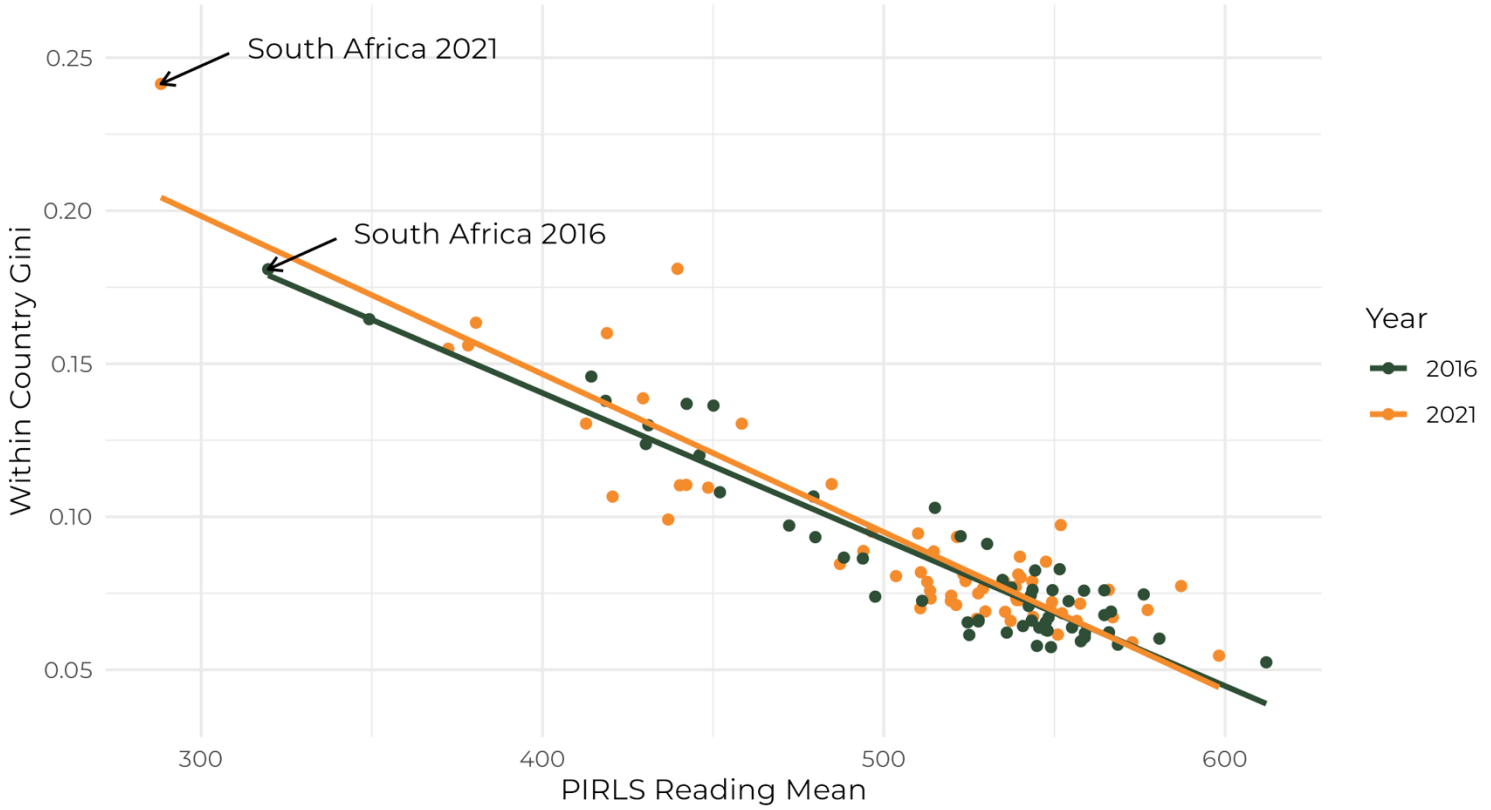
Notes: Error bars depict 95% confidence intervals
Learners tested in Grade 4
Source: Author from PIRLS (2006 & 2016)

Implications

- African language learners improved substantially between 2006 and 2016 (Mohohlwane, Mtatse, Courtney, 2023).
- English and Afrikaans showed no statistically significant improvement.
- The pandemic has erased much of this improvement & inequality reduction (Böhmer & Wills, 2023).

For our level of learning, South Africa was not particularly unequal until 2021

Inequality in TIMSS vs learning level



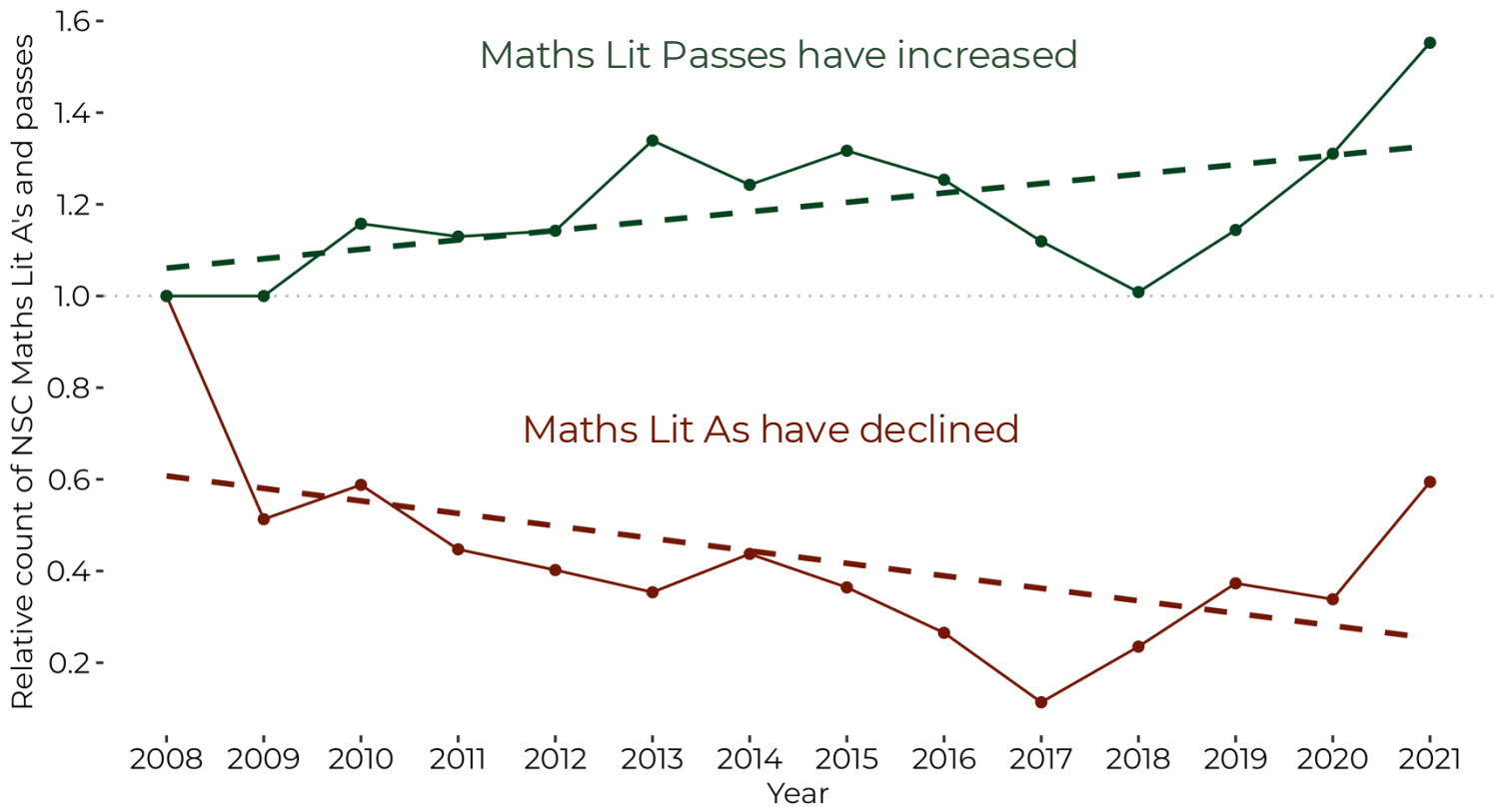
Source: Author adapted from Böhmer and Wills (2024, unpublished)

Discussion

- By the Gini measure of inequality, South Africa was at the level of inequality that would be predicted by our PIRLS score until the pandemic hit.
- It is unclear how permanent the pandemic learning loses and associated widening of inequality will be.
- With such poor employment outcomes, focusing on raising employment levels might still be a more important goal than aiming to improve the learning at the bottom of the learning distribution at this point in South Africa's development.

Squeeze at the top may have troubling employment & tax implications

NSC Maths Lit Passes (30%) and As (80%) relative to 2008



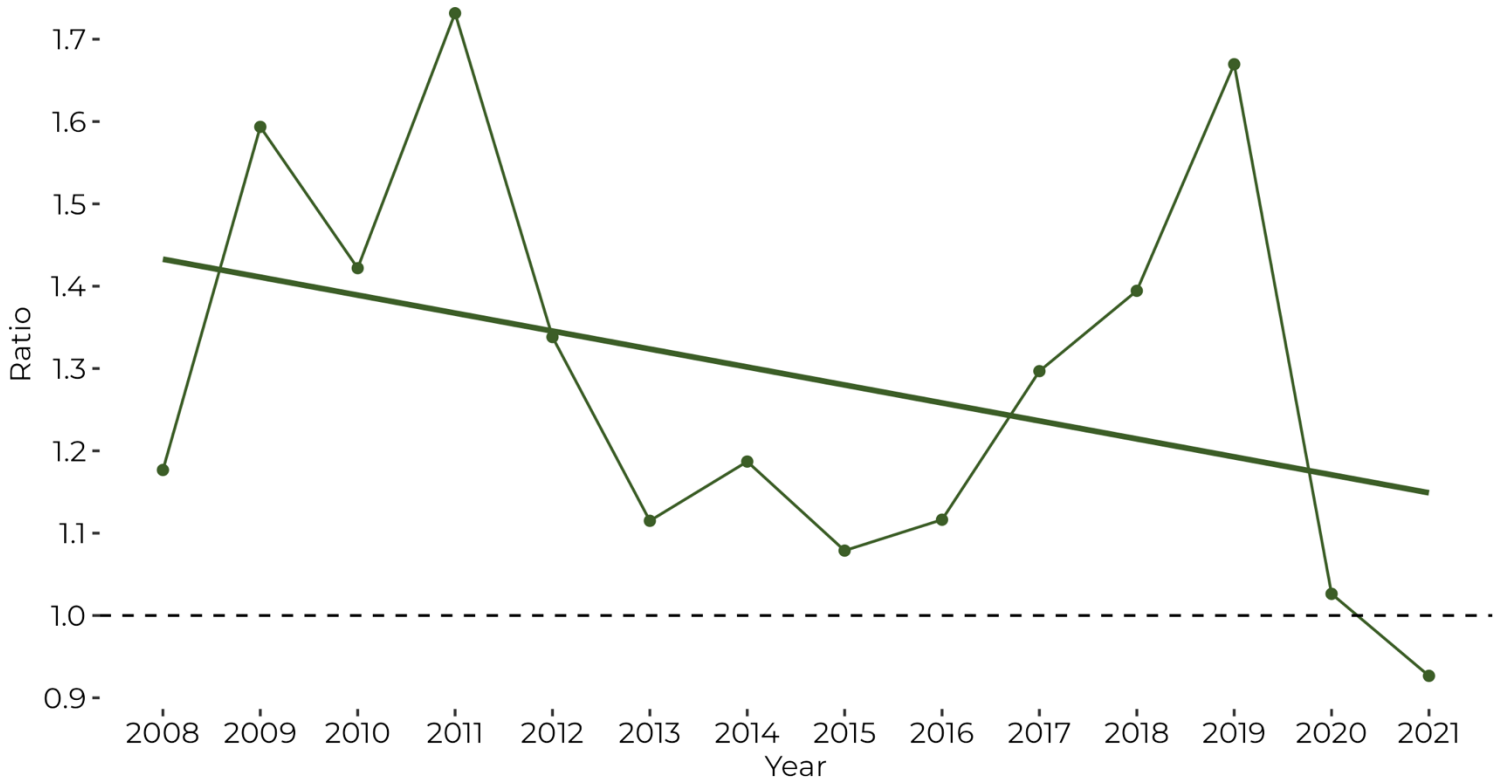
Source: Author from DBE NSC data

Discussion

- There has been a downward trend in the number of learners achieving Maths Literacy & Maths passes as well as those achieving 60% (a common university requirement) & As (80%).
- These subjects are vital for the creation of the human capital required to expand the tax base.
- At the same time, there has been an improvement or stagnation in the number of passes (30%) for Maths lit and Maths.

Capacitating a handful of schools could quickly increase Maths As

Ratio of NSC Maths As in the top 200 schools to the rest



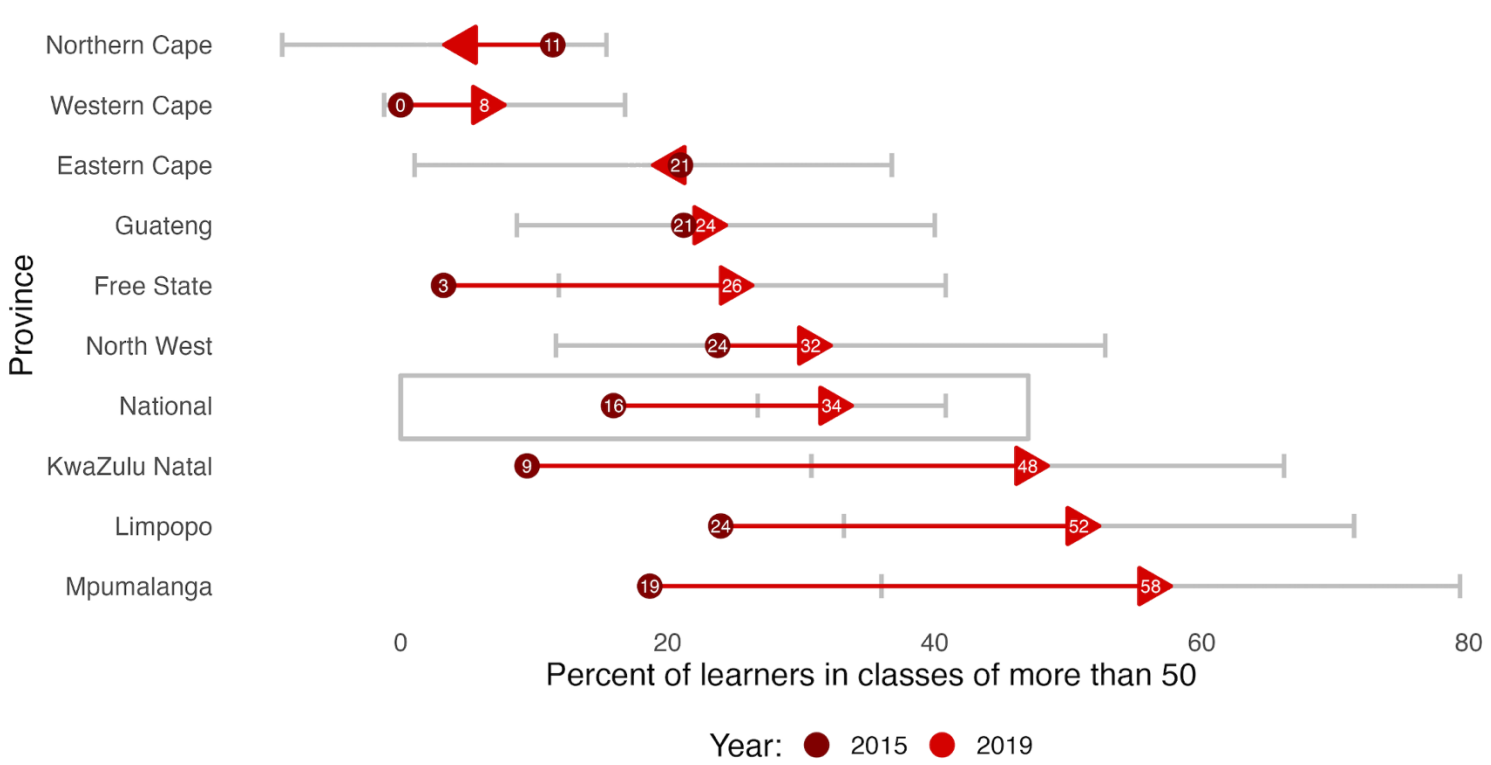
Notes: The horizontal dashed line is point where the top 200 schools produce the same number of NSC
Source: Author from NSC 2008 - 2021

Discussion

- The top 200 high schools by number of As achieved produce between 0.9x to 1.7x the number of As as **all other high schools combined.**
- The inequality implied by this ratio has declined, but seemingly **at the cost of the number of Maths As produced.**
- This high concentration in schools producing As suggests that increasing enrolment in these schools, or the next 200, could quickly increase the number of Maths As produced.
- There is similar inequality in bachelor passes.
- The SES of the school you go to matters more for learning outcomes than your own SES (Servaas & Gustafsson, 2017).

Some subjects and grades saw growing class sizes, amid broader positive trends

% of learners in class sizes greater than 50, 2015-2019 (TIMSS Grade 5)



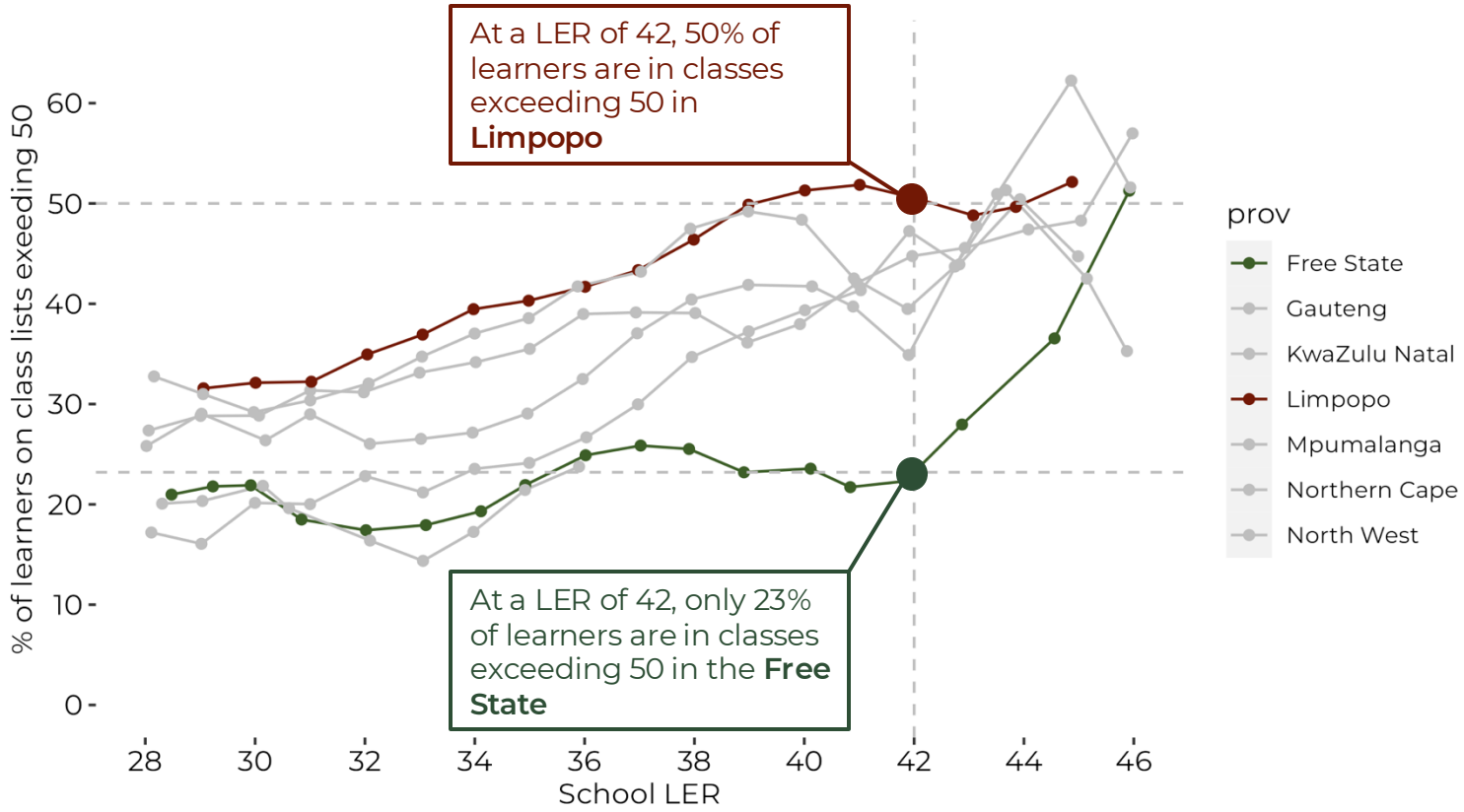
Note: Error bars represent 90% confidence intervals
Source: Author from TIMSS (2015-2019)

Implications

- Between 2015 and 2019, the number of *Grade 5* learners who were in classes greater than 50 rose from 16% to 34%.
- Over the same period, the *national* learner-educator ratio fell from 36 to 32 learners per educator (learner-weighted).
- Nationally, between 2018 and 2021, the number of learners for every educator *increased* from 28.9 to 29.4 while class sizes *declined* from 42.8 to 40.51 in grades 1-7 (excl. the Eastern and Western Cape).
- Continuing this trend of smaller classes for a given number of educators and learners is critical.
- Improving this efficiency matters in determining how many additional educators are needed.

Class sizes can be reduced without additional teachers

Some provinces are able to contain class sizes at high LERs



Source: Author from DBE LURITS 2021

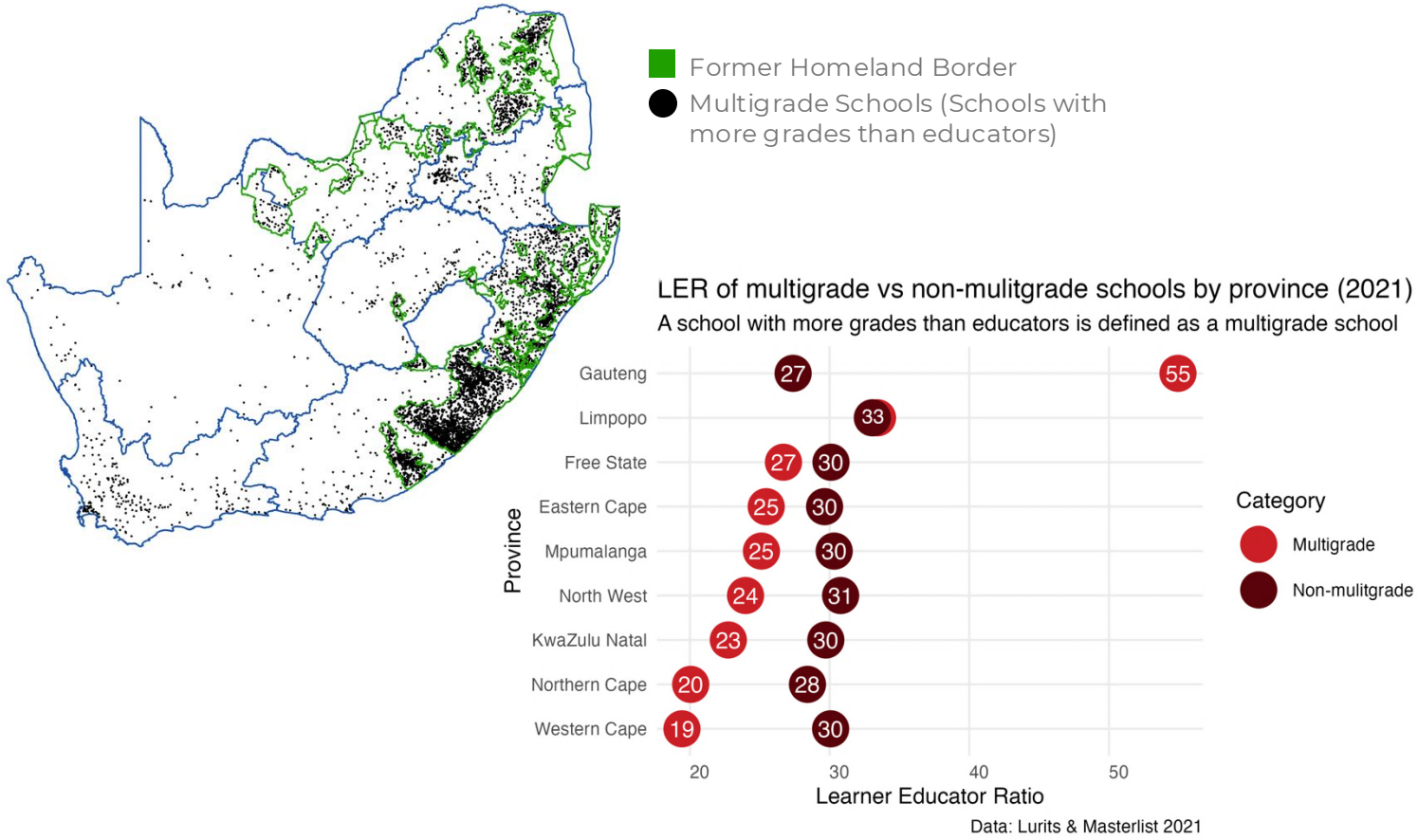
Implications

- Should other provinces achieve the efficiency levels of the Free State or the Northern Cape, it is feasible to maintain class sizes without the need for as many additional teachers as may be anticipated.
- In the case of a trade-off between teacher quantity or quality the former is likely more important for learning.
- There is fairly conclusive evidence showing that class size does not affect learning outcomes in South Africa (Altinok and Kingdon, 2012).
- Even at much larger class sizes, no effect is found in the international literature.
- For instance, reducing class sizes from 82 to 44 learners in Kenya did not improve learning (Duflo et al., 2015), and classes from 54 to 100 learners have not shown deteriorated outcomes in the Philippines or India (Datta and Kingdon, 2023).

Former Bantu Education schools persist as multigrade schools

Left: locations of South Africa's 5359 multigrade schools (out of 24k)

Right: disproportionate educator allocation to multigrade schools



Notes: Green outlines show the former homelands
Source: Author from DBE LURITS & Masterlist (2021)

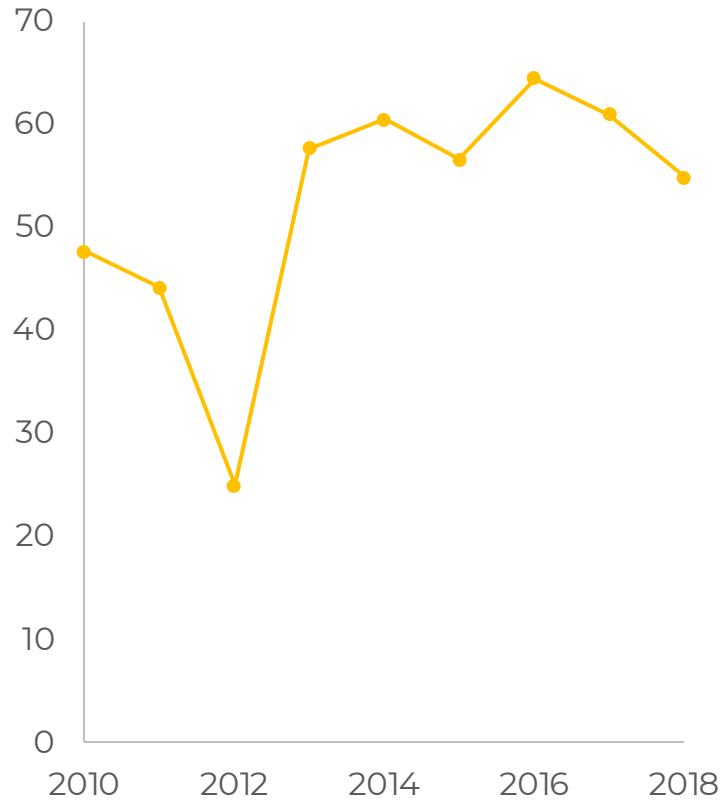
Implications

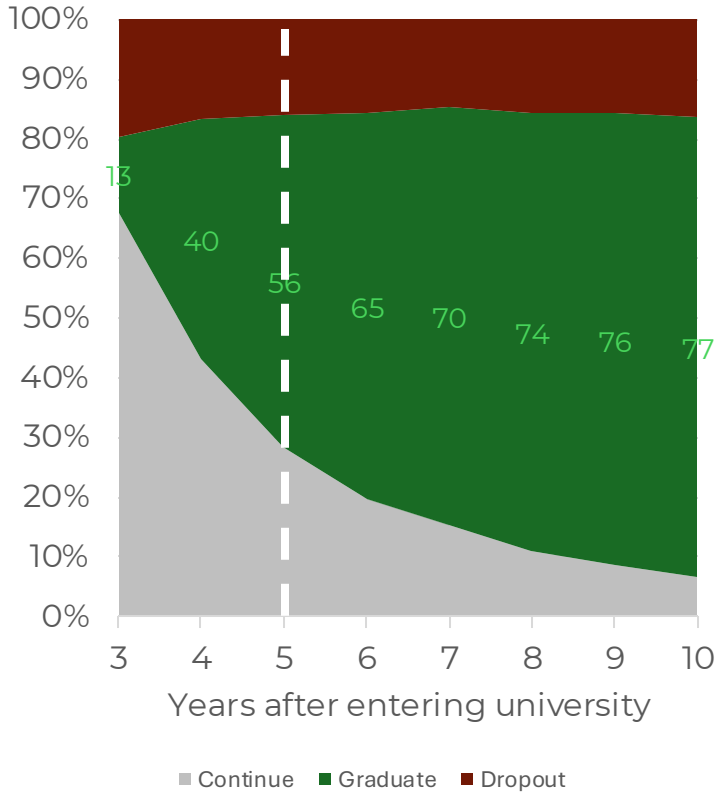
- Multigrade schools prevent teaching at the right level.
- Multigrade schools cost substantially more per learner as they are relatively overstaffed and have a higher principal/learner ratio.
- The average multigrade school is 2.2km away from the closest school, entailing that many multigrade schools can be closed without increasing learner transport.
- High volatility of learner enrolments suggests that distance to schools is less of a binding constraint than is often assumed (Gustafsson, 2016).
- KZN and other provinces are already beginning to close small schools, guiding this process with data would be beneficial.
- The Free State has successfully closed many small schools (1 in 4).
- There are 270k learners in multigrade schools in the Eastern Cape, 160k in KZN, and 130k in Limpopo.

NSC results are likely predictive enough to rationalise NSFAS

Left: % of NSFAS entrants graduating 5 years after entering (2010-2018)

Right: % of NSFAS 2013 cohort continuing, graduating, and dropping out





Source: Author from DHET (2023)

The cumulative number of dropouts declines in the original data. This is theoretically impossible unless rejoining dropouts are not counted as new entrants, but removed from the count of dropouts.

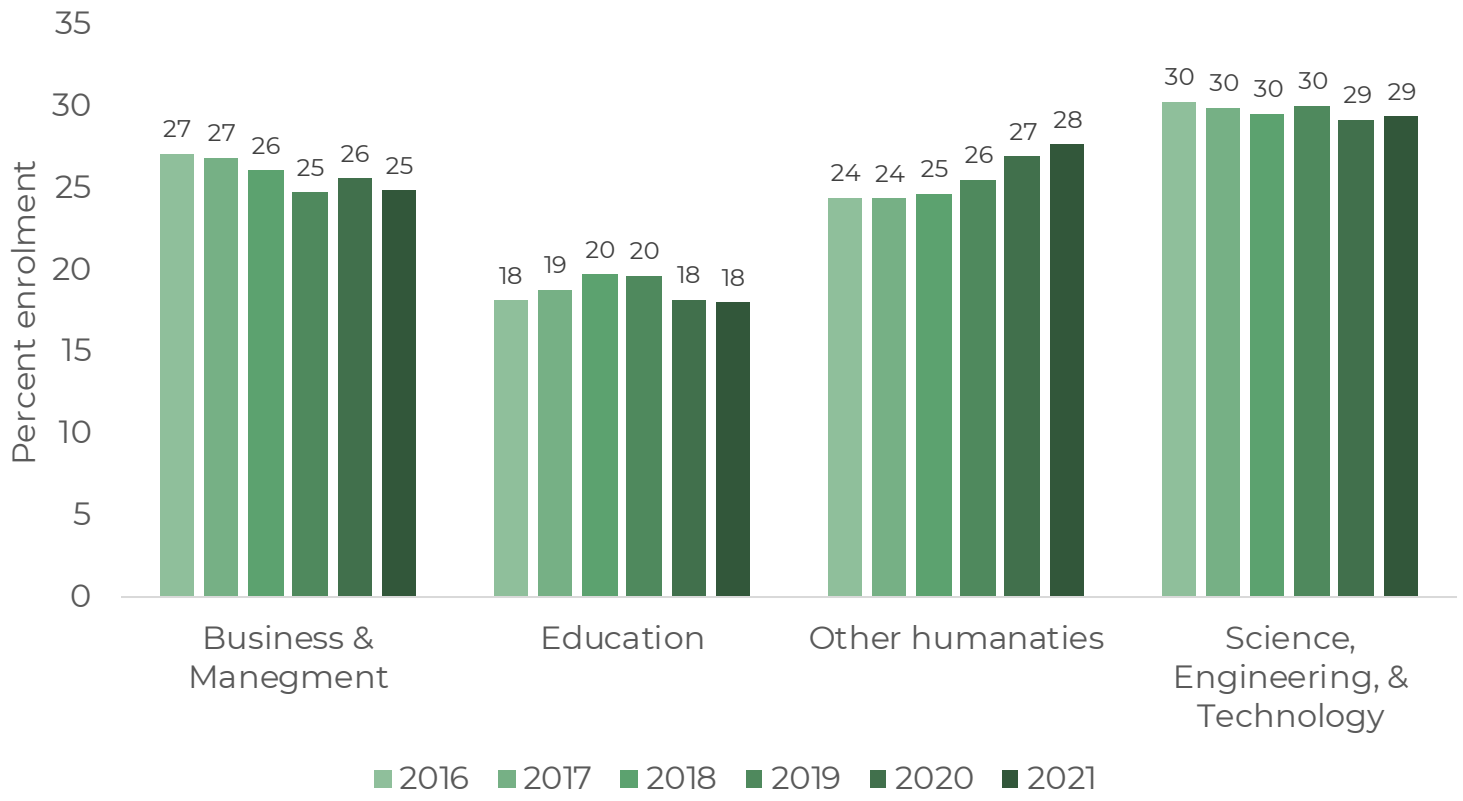
These data follow learners who at some point received the bursary, it does not imply that they continue to receive the bursary in the years given.

Implications

- Entrance and non-completion or funding cessation creates substantial political discord as seen during ”FeesMustFall” (2015).
- There is no evidence that there are economic returns to entering and not completing university.
- NSC & NBT results are likely highly predictive of a large fraction of learners who will not graduate within the bursary award time.
  - NSFAS is awarded for degree duration (3 or 4 years) plus 2 years. 44% do not graduate within 5 years of receipt, 35% do not graduate within 6 years, the legislated maximum receipt period.
- Historically, there has been a long tail of learners enrolled in NSFAS even 10 years after first receipt (De Villiers et al., 2013). There are no publicly available data on recent trends.
- Universities are incentivised to admit those who they can be sure will not complete.

Are employment priorities reflected in PSE enrolment?

Percent enrolment in CESM categories 2016-2021



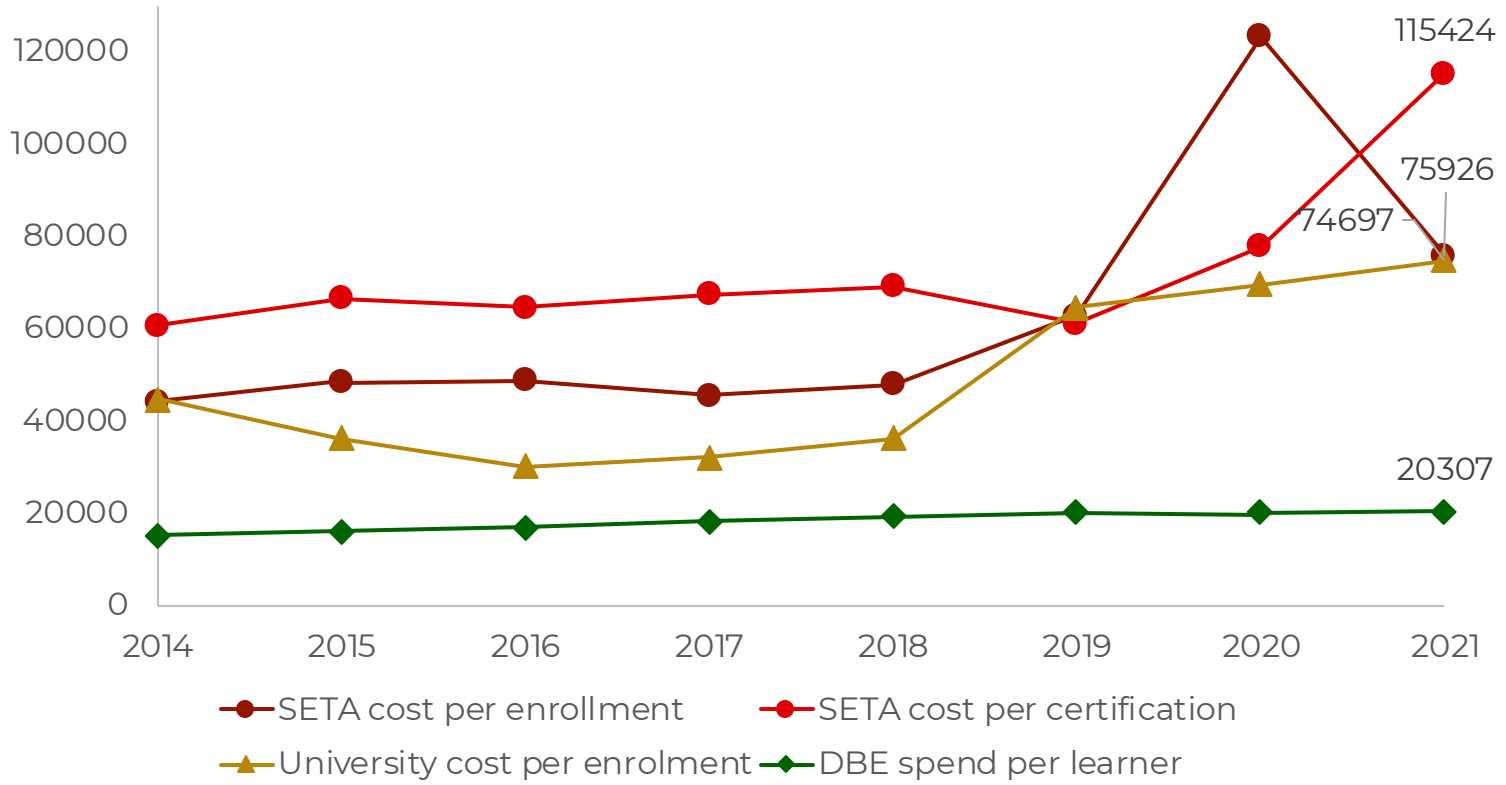
Source: Author from Department of Higher Education (2021)

Implications

- 1-in-5 university learners is enrolled in an education program and half are enrolled in a humanities programme.
  - Is this adequately reflective of the skills shortages in South Africa?
- The humanities are growing and absorbing enrolment from disciplines with a likely higher public return on investment.

Do Skills Development Learners cost the country more than universities?

SDL & University cost per learner enrolled and certified



Notes: University costs include the NSFAS bursary (National Treasury Budget Review, 2014-2022) plus the DHET (2021) Public Higher Education Institute funding estimate.
Enrolments, and certification numbers from the Department of Higher Education & Training (2021)
SETA disbursed values from the Department of Higher Education & Training (2021)
Values are in nominal Rands

Implications

- A year of university typically costs the country less than a learner in a SDL institution learning programme.
- SDL learners who never qualify cost the country approximately R2.7b per year.
- Despite imperfect full-time equivalence comparisons, SDL Institutions are costly to the country and have none of the research obligations of universities.
- The move towards QCTO has not seen reduced costs to country.
- There is currently little evidence of the employment benefits or state ROI of SETA or SDL programmes.
- There are currently 21 SETAs, with many concurrent obligations.
- **We are taxing employment a net R13b per year** (2021/22)
  - Skills development levy: R19b
    Employment Tax Incentive: R6b

Part 2: Policy Recommendations

For:

Educating South Africa during fiscal contraction

Reducing unemployment

Increasing inclusive economic growth

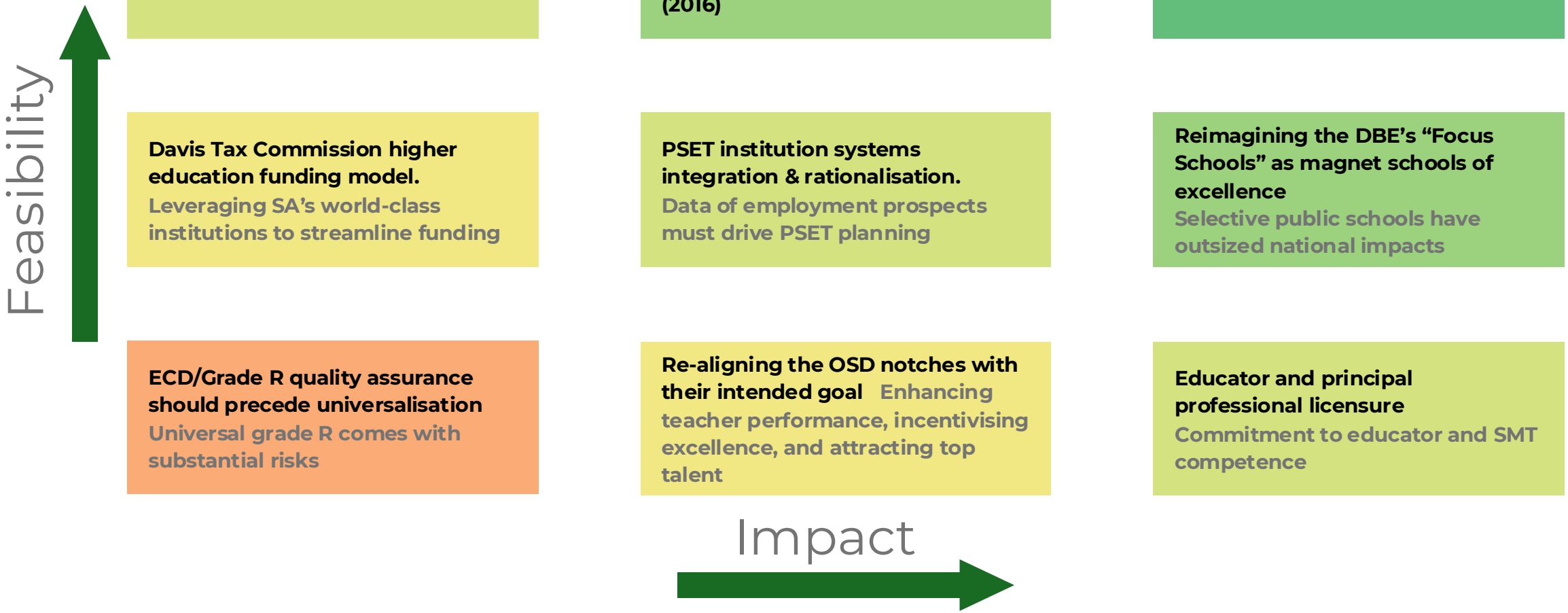
Increasing the tax base

Scoping fiscal rationalisation

Major Education Reviews

- Organisation for Economic Cooperation and Development (OECD). 2008. Reviews of National Policies for Education: South Africa 2008. OECD Publishing: Paris.
- National Planning Commission. 2012. National Development Plan 2030: Our future - make it work.
- Department of Basic Education. 2015a. Action Plan to 2019: Towards the realisation of Schooling 2030. Pretoria.
- Deloitte. 2013. National Implementation of Post Provisioning: National Report
- Dell Foundation. 2013. Success by Numbers: How using data can unlock South Africa's R-12 Public School System
- Department of Basic Education. 2020a. Action Plan to 2024: Towards the realisation of Schooling 2030
- Van Der Berg, S., Spaull, N., Wills, G., Gustafsson, M., and Kotze, J. 2016. *Identifying Binding Constraints in Education: synthesis*
- *report for the Programme to support Pro-poor Policy development (PsPPd)*
- *National Plan for Post School Education and Training 2021-2030* (DHET, 2021)

Executive summary of policy recommendations



Overview of assessment policy reform in South Africa

Improvement necessitates measurement

History of policy reform

The following assessment reform has been **central to historical reform ambitions** since at least 2011

DBE Strategic Plan 2011-2014 (2011)
National Development Plan (2012)
Action Plan to 2019 (2015)
Action Plan to 2024 (2020)
Revised Strategic Plan (2020)

Discontinuation of the ANAs and slow progress towards implementing the National Integrated Assessment (NIAF) Framework suggest **moderate ambition is required**

Status Quo

In the 2017 SMS, **¾ of teachers and principals supported a national examination** in grade 6.

South Africa is likely not ready for Summative Assessment due to **political and capacity constraints**. Yet, the GEC is effectively a pilot.

Diagnostic Assessments and Systemic Evaluations are **critical intermediate steps** towards National Assessments

Immediate next steps

Diagnostic Tests in language and mathematics are **politically and fiscally viable,** providing a crucial first step towards the NIAF

Systemic Evaluations in grades 3, 6, & 9 **should follow** the Diagnostic Test roll-out

Implementing diagnostic tests and systemic evaluations is key to **building expertise and gaining political favour** needed for summative assessments

1) Diagnostic/Formative Assessments

Democratising high-quality assessment instruments

Purpose	Importance	Design
Low-stakes, CAPS-aligned assessment tools for in class assessment for educators	Educators are often looking for test resources as **designing assessments is time consuming and repetitive**	Clearly delineated subsections and **extensive documentation** would provide learners with **feedback at a topic level**
Provide a **yearly bank of assessments** that are highly structured for feedback	Current **informal "test banks" provide some teachers assessments**, but there is scope for quality improvement	**Feedback should be algorithmic and easily interpretable** (e.g. 30% = underperforming or "learning at a grade 3 level")
Assessments would be provided **only for Languages and Maths** to emphasise the importance of these subjects	Diagnostic assessments aid educators in addressing **learner and class-specific learning shortcomings**	Sufficient piloting should allow for **IRT principles to be roughly followed, minimising floor and ceiling effects**
Allow learners **to become familiar with testing**, including MCQs	Provide learners, educators, and parents with the **information they need to improve learning**	There should be **multiple booklets that cover the entire curriculum**, allowing for Diagnostics at different stages in the year

2) Systemic Evaluations

A systems-wide performance thermometer

Purpose	Importance	Design
South Africa participates in a number of **international large-scale assessments**: TIMSS in maths and science, PIRLS in reading, & SACMEQ in maths, reading, & HIV	**Current measures** of education systems level improvement **are not fit for purpose**, notably the NSC pass rate	The assessment should **follow IRT principles, be externally monitored, and collect extensive anonymous learner information**
South Africa needs a **higher frequency of assessments across the grades** (3,6, & 9) to better understand the health of the education system	**Refocusing the system on foundational literacy and numeracy** requires a measure of progress at those grades	These results will also allow robust analysis of the **determinants of learning** at the learner level
These assessment will provide a learning score that is **robust to comparison between provinces and over time**	Information of where the learning system needs assistance is crucial	The assessments should be **coupled with current assessment initiatives**, such as the School Monitoring Survey

3) Educator and principal professional Licensure

Commitment to educator & SMT competence

Policy & Strategy

NDP Calls for competency assessments prior to Principal appointment (Action 59). **The DBE reiterates this commitment** in the Action Plan to 2024

Endemic poor teacher content knowledge is a central problem of South Africa's education system

A robust and centrally administered entrance exam could potentially **replace the BEd or PGCE** if one already has an advanced degree

Challenges & Solutions

The **political appointment of principals** is particularly pernicious. Professional examination would mitigate the harms of this problem

Mastery of Maths and Language is likely a more binding constraint than pedagogical knowledge

Universities are evidently graduating underqualified educators. Requiring an educator entrance examination would place **top-down pressure on degree quality**

International experience

Teacher entrance exams are **best practice internationally**, employed by a fifth of countries (UNESCO, 2023)

Examples include India's Central Teacher Eligibility Test, Nigeria's Professional Qualifying Examination, and Ghana's Teacher Licensure Examination

Domestic and international **evidence shows how important educator content knowledge is** (Shepherd, 2013)

4) Re-aligning the OSD notches with their intended Goal

Enhancing Teacher Performance, Incentivizing Excellence, and Attracting Top Talent

Performance	OSD & incentives	Content knowledge
There is **no political space to reduce educator salaries**	The **Annual National Assessments faced resistance** in part because they could have provided an objective metric to benchmark teacher performance	**Content knowledge is the significant capability shortfall**, and it is unclear if teacher training or in work remuneration structures can improve this
Currently, there are **no effective structures to reward good performance or discharge underperforming educators**.	OSD intended to retain experienced teachers but **evidence suggests experience does not correlate with learning outcomes; age negatively correlates** with learner outcomes	**Incentivising the best learners to enter the education sector** is crucial for enhancing teacher quality
The original **OSD notches were meant to incentivize and compensate for measured performance**, ideally learner improvement	This may imply that **the system incentivises less intrinsically motivated and less capable teachers to remain in the profession**	Pay progression is important; however, it is surprising that the **the current OSD entrance notch for REQV14 of R23686.5p/m isn't attracting more talent**

5) Reimagining the DBE's "Focus Schools" as magnet schools of excellence

Selective public schools have outsized impacts

Pedagogical assumptions	Revised focus
The DBE Action Plan (2022), emphasise on robotics, coding & entrepreneurship, is **predicated on a level of maths proficiency that is unattainable** in the short term.	**Focus Schools expanded as highly selective, magnet-style schools of excellence**
Universities experience high dropout rates in technical subjects not due to lack of early exposure, but due to **inadequate maths skills**	**Educators and principals could nominate learners for entrance assessments**
The learning **foundation of the Fourth Industrial Revolution is still mathematics**, as evidenced by the focus on mathematics in the leading industrial nations, such as China and Singapore	These schools would integrate advanced education in language and mathematics, aligning with **successful international models from Vietnam, Singapore, and South Korea, & Kenya**.
The **mathematics teaching capacity in South Africa is severely constrained.** Focusing on gifted learners as the future industrial leadership could have outsized effects	Formalised processes of **streaming within schools**, perhaps relying on Diagnostic Assessments, will likely also improve teaching at the right level

6) ECD/Grade R quality assurance should precede universalisation

Universal grade R comes with substantial risks

Risk	Mitigation
"They pretend to do the reforms that look like the kind of reforms that successful countries do, but **without their core underlying functionalities**" (Pritchett, 2011)	**Working backwards from outcomes to policy** can be more important than mimicking the appearance of appropriate policy
The Millennium Development Goal of universal basic education has been criticised for prioritising quantity of quality of education	**Improve the evidence base** for expanding enrolment an progressively measure outcomes as ECD is universalised
Currently, **grade R is being universalised without a deeply embedded quality assurance** mechanism	Many countries **have school readiness assessments, administered by grade 1 educators**. Tracking these results and staggering rollout could provide vital information (including on stunting)
Evidence supporting the expansion of grade R is limited and sometimes negative even in developed countries (Baker, Gurber & Milligan, 2008). Reduced caregiver exposure is a substantial risk factor.	Norms and standards are important, but with capacity in the education system already spread thin, **it is a concern whether ECD can be appropriately monitored**

7) Binding Constraints (2016) Literacy Plan

An ambitious but realisable plan to get SA reading for meaning

Priority Early Grade Reading Goal for the DBE:

"All learners read fluently and with comprehension by the end of grade 3."

	1. PRIORITISE	2. PREPARE	3. IMPLEMENT	4. SUSTAIN
(A) Beginning	Fast-track plans to establish a Directorate of Primary Literacy.	Effectively brand and communicate the national early grade reading strategy and reading goals across all education tiers.	IN-SET on 'how to teach reading' administered across all districts for all foundation phase teachers.	Bi-annual feedback to all education tiers about school and district performance against measurable reading goals.
(B) Collaboration	Request an implementation analysis (IA) of prior early grade reading and literacy strategies.	Engage with DHET and education faculties to address system weaknesses identified in organisational capacity audit.	Developed PRE-SET course on 'how to teach reading' implemented across HEIs offering teacher training courses.	Independent and nationally representative test of Gr. 3 reading proficiency linked to national assessments.

8) Davis Tax Commission higher education funding model

Leveraging our world-class institutions to streamline funding

Design & Implementation

Leverage the banking and financial services sector to administer loans to reduce administrative burden

Integrate loans into SARS, ensuring loans are repaid and leverage tax returns to enable repayment progressivity

Recognise the **limited crowding in of private financial institutions** in the provision of education loans

Loans & repayments

Repayment should be income contingent. Banks could have further discretion to finance degrees with government backing

Interest rates could be subsidised for the missing middle

Repayment **reductions or forgiveness could be implemented** for those in certain sectors, such as public service

Hybrid financing

A sliding scale where the **poorest receive NSFAS**, the missing **middle receives incentivised and subsidised loans** and the **wealthiest pay full tuition fees**

Banks would have an ambit to increase loans with government backing to leverage current capital

Explore additional revenue sources to support this model and ensure it is economically sustainable with minimal fiscal pressure on the government

9) PSET institution systems integration & rationalisation.

Data of employment prospects must drive PSET planning

A	B	C
Standardise and Overhaul Data Systems: Streamline and standardise education and training data systems (HEMIS, TVETMIS, SETMIS, HEQCIS, etc.) to eliminate duplication	**Support and Expand Open Education Resources (OER):** Develop a licensing framework for public-funded learning materials	**Promote Partnerships and Modernise Curricula:** Foster partnerships with local and international technology companies and science councils to recruit expert teaching staff
Operationalise Central Applications Service (CAS): Implement CAS by 2025 to increase and streamline enrolment, ensuring a better match between applicants and PSET institutions.	**Enhance Labour Market Responsiveness and Conduct Tracer Studies:** Gather and report on occupational skills needs through the Labour Market Intelligence project	**Expand and Improve TVET Course Offerings:** Sequence the expansion of TVET courses starting with fields like nursing and agriculture, gradually including advanced certifications
Align Educational Models and Frameworks: Re-evaluate TVET qualifications overseen by DHET and simplify the National Qualifications Framework (NQF)	**Enhance and Integrate CET Colleges:** Develop comprehensive funding, enrolment planning, and curricular programmes for CET colleges,	**Review and Optimise Skills Development Levy (SDL):** Re-evaluate the skills levy system to better utilise the R19 billion annual levy.

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Appendix slides

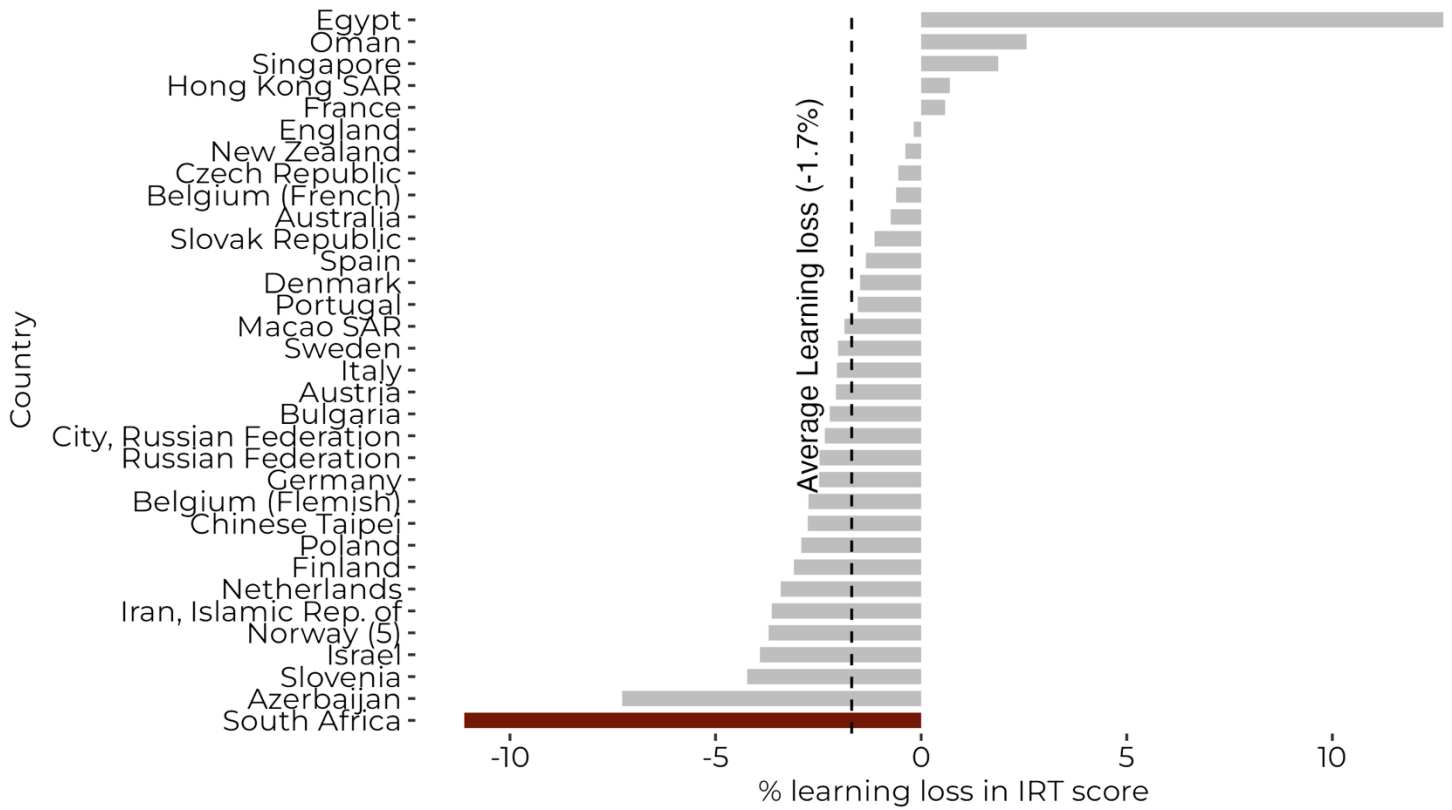
The value of Diagnostic Assessments for different stakeholders

Value for all actors

Stakeholder	Value provided
Learners	Receive detailed results to **identify educational ability and focus areas**
Educators	Gain **sophisticated tools to understand and address learner needs**, guiding syllabus-focused lesson planning.
Parents & SGB	Obtain clear measures of child's learning level, **enhancing engagement and support**.
Education systems	Assessments could inform planning and policy, though **integration into systems like SA-SAMS must be carefully managed** to avoid negative impacts.

Pandemic learning losses have significantly erased improvements

International comparison of PIRLS Learning Losses 2016 - 2021



Notes: South Africa's decline of 0.04SDs was nearly double the 0.23 mean but only the 10th largest.
.Improvement is shown as a percentage of IRT scores, which are more intuitive than SDs.
Refer to "How Standard is a Standard Deviation" for more details.
South Africa was assessed in 2022 in Grade 4
Source: Author from PIRLS Grade 4 2016 – 2021

Discussion

- The pandemic has erased about ±10 years of progress in learning
- Compared to other countries, South Africa fared particularly poorly, losing the largest number of IRT points, while starting at the lowest base
- Although these results cannot be attributed to the pandemic alone, comparison between countries remains robust, with some caveats regarding delayed assessment
- There were signs of stagnation prior to Covid-19, notably in TIMSS Maths Grade 5, tested in 2019
- There have been no other national representative, psychometrically valid assessments pre and post-pandemic in South Africa

Overview of growth-oriented education policy recommendations

A rough Feasibility/Growth Potential policy matrix

Feasibility Growth Potential	1	2	3	4
1	Monitor anthropometric data in SA-SAMS	Quintile system rationalisation	School report card	ECD Expansion
2	Skills development levy rationalisation	Curriculum rationalisation towards literacy & maths & science	Increased fixed term contracts	New matric results indictor using % passing from Grade 10
3	Rationalise Post-provisioning norms	Aligning the OSD notches with their intended goal	ECD monitoring & quality Assurance with Thrive by Five	Systemic evaluations
4	Educator & Principal professional & promotional examinations	Focus Schools/National Schools of Excellence	Binding constrains (2016) literacy plan & universal Graded Readers	Diagnostic Assessments

Why should we still aim for Summative Assessments?

The enduring value of comprehensive assessments

Equity & engagement

Promoting equity by **highlighting disparities** within schools and at all education levels

Catalyse parental & community engagement before matric NSC

Providing more objective benchmarks for progress for all students

Provides a **bargaining point** against which lower stakes assessments can be the fallback position

Policy infrastructure

Ensures **consistent education standards** nationwide

Aligns educators with the syllabus

Provides informational infrastructure for **school report cards**

Provides the informational infrastructure for **selective schools**

Learning outcomes

Motivates student achievement at a younger age

Supports steaming and other improvements towards "**teaching at the right level**"

Improved verification of learning outcomes at foundational levels

Provides a **framework for accountability** at all levels and grades

(C) Capacity	Request a capacity audit of the education system to effectively teach reading to learners in early grades. Early literacy research in African languages declared a NRF priority area	Collaborative engagement with the DHET and education experts to develop PRE-SET and IN-SET training courses on 'how to teach reading'.	Foundation phase teachers and HODs track oral reading fluency and DBE workbook coverage of individual learners using SA-SAMs.	A ministerial performance agreement linked to reading goals housed outside the DBE.
(D) Accountability	Establish shared and independently benchmarked standards for reading in both English and mother tongue language.	Develop SA-SAMS module to capture oral reading fluency scores of Gr 1–4 learners and track curriculum as reflected in DBE workbook coverage.	PDEs and national DBE monitor system performance using the SA-SAMs reports on oral fluency and DBE workbook coverage.	Public awards for districts and schools for effective implementation of foundation phase reading strategies.
(E) Alignment	Reformulate a national early grade reading strategy using earlier strategies and findings from the IA.	Education experts to train current and newly appointed foundation phase reading specialists from province and district offices.	Public awareness campaign of early grade reading competencies in all provinces and in all official languages.	All important DBE planning documents to explicitly prioritise the early grade reading competency goal.
(F) Budget	Comprehensive budget analysis of the cost of implementing the national early grade reading strategy.	Specialist Foundation Phase reading experts deployed across districts and Foundation Phase class sizes reviewed	Ensure Foundation Phase classes are not overcrowded and no Foundation Phase class exceeds 45 learners	Create viable career paths for Foundation Phase teachers and specialists

Miscellaneous policy reforms

Small reforms sum to important improvements

Policy	Purpose	Supporting documents
Quintile System reform	**Outdated** quintile calculations influence school funding	Zoch, 2017
Curriculum rationalisation	**Seven subjects** in leaving exams is unusually high and distracts from focusing on the essential subjects of language and math	International norms
New Matric Results Indicator	A more accurate indicator could be the fraction of **passes from Grade 10 or Grade R,** although there are various “basket” suggestions	DBE, 2020
Rationalise Post provisioning norms	• Extremely **complex PPNs** prevent straightforward auditing • PPNs weight small schools and higher grades too heavily	Deloitte, 2013

Part 2.2: Post-Secondary Education & Training

This section draws heavily from the *National Plan for Post School Education and Training 2021-2030* (DHET, 2021) and will follow its structure

The reforms and plans that most aligned with growth will be highlighted

Some additional comments on policy for PSET

Outcome 1.1: Clear and streamlined roles and responsibilities of all key stakeholders

PSET

Data of employment successes must drive PSET

Systems integration

Consolidate infrastructure, & establish CET colleges. Align funding processes, enrolment planning, qualification development, and data systems

Create a comprehensive data system replace existing data systems (HEMIS, TVETMIS, SETMIS, HEQCIS, etc.). Require all PSET institutions to use this standardised data system.

Address overlapping duties of quality councils (CHE, QCTO, SETA, Umalusi, SAQA, NSA) by potentially amending the NQF Act for enhanced efficiency.

Resources & curriculum

All learning **materials funded by public money will be available as open educational resources** (OERs). Distribute OERs via a licensing framework developed by the DHET

Pursue and share software licenses on a national level to support educational infrastructure

Re-evaluate and align the DBE's three-stream educational model with TVET qualifications to ensure coherence.

Data & research

Require all PSET institutions to document registration and qualification outputs using unit record data, including ID numbers, to facilitate comprehensive tracer studies

Improve DHET's & all PSET institution's data collection & processing capabilities and establish a Central Applications Service (CAS).

Tracer studies through to employment outcomes, base education planning around evidence for learning that leads to employment. Run baseline data collection

DHET (2021) Outcomes 1.3, 1.4, 2.1, 2.4

Inject clarity into the complex of PSET institutions

Outcome	Growth focused summary
Outcome 1.3: A simplified National Qualifications Framework (NQF)	Simplified NQF: Streamline the National Qualifications Framework to **increase clarity and accessibility** as detailed in DHET (2021).
Outcome 1.4: Increased articulation for students between and within the NQF sub-frameworks, and between and within institutions	**Develop an integrated quality assurance and data system across** quality councils to improve learner legibility of NQF sub-frameworks and institutions.
Outcome 2.1: Increased enrolment in all PSET sectors	**Operationalise the Central Applications Service by 2025**, and increase SDL funding for skills development.
Outcome 2.4: A sustainable student financial aid system	Develop a learner funding model that ensures full coverage for the disadvantaged and continues cost-sharing for those who can afford it (This aligns well with the DTC)

Outcome 2.7: Sufficient staff to support expansion & Outcome 3.4: 4IR

Strategic Initiatives for PSET Advancement and Responsiveness

Technological Integration

Forge partnerships to **understand and strategically prepare for the impacts of the Fourth Industrial Revolution**, incorporating both local and international insights

Research optimal lecturer-student ratios to enhance student success across various academic fields

Enhance data gathering and analysis to support the development of a skilled workforce, aiding in the country's growth and global positioning (PC: maths, maths, maths!)

Develop a responsive PSET system by understanding and **interacting with demand and supply dynamics** through local to international community engagement & **tracer study analysis**

Collaborative Advancements

Collaborate with South African diaspora to strengthen teaching and research, turning brain drain into brain gain.

Start with higher certificates and advanced diplomas in nursing and agriculture, with plans to offer Level 7 and 8 qualifications as capacities develop

Implement socially responsive research and collaborations to build capacity and inclusivity in education

Gradually expand educational offerings to include advanced certifications as institutional capacities develop, meeting the evolving needs of the educational landscape

Outcomes 3.2: A diverse range of programmes responsive to the world of work

Inject clarity into the complex of PSET institutions

Outcome	Growth focused summary
Outcome 3.2: A diverse range of programmes responsive to the world of work	Enhance PSET programmes to better meet industry needs through data-driven enrolment planning by the LMIU, and improve responsiveness to employment
Outcome 3.3: A diverse range of mechanisms to improve research, innovation, commercialisation, and entrepreneurship in higher education	Collaborate with the DSI and NRF to identify and promote centres of excellence in research and innovation to foster institutional differentiation and growth
Outcome 2.1: Increased enrolment in all PSET sectors	**Operationalise the Central Applications Service by 2025**, and increase SDL funding for skills development.
Outcome 2.4: A sustainable student financial aid system	Develop a learner funding model that ensures full coverage for the disadvantaged and continues cost-sharing for those who can afford it (PC: This aligns well with the DTC)

Outcome 4.1: Improved interface between education and training institutions and skills levy

PSE

Optimising SDL institutes for workplace readiness

Labour market responsiveness	System efficiency	Resource management
Data-Driven Enrolment Planning: Gather and report on workforce skills data to the LMIU to inform targeted enrolment planning and curriculum development	**Regulatory and Quality Assurance Integration:** integrate the quality assurance functions of SETA and NAMB into the Quality Council for Trades and Occupations (QCTO),	**Establish a shared services system for SETAs**, particularly in IT and human resources, to streamline operations and reduce operational costs, enhancing overall system efficiency.
Stakeholder Collaboration: Intensify engagement with employers, labour, and government to ascertain future industry trends and skills needs	Progressively **review and the allocation of the skills levy to support the QCTO**'s expanded functions,	**Align SETA and National Skills Fund planning cycles with government-wide frameworks** like the MTSF and MTEF to ensure coordinated and strategic resource allocation
Promotion of Practical Experience: Foster partnerships between educational institutions and industry to promote workplace-based learning (WPBL)	**Implement a three-year review cycle for each SETA's contributions** towards the National Development Plan's objectives, using findings to adjust budgetary and strategic planning	**Maintain a focus on elevating the quality of teaching and learning**, ensuring that as access to education expands, the quality is not compromised

Outcomes 2.6, 5.5, 6.1

Infrastructure and quality while increasing throughput

Infrastructure	Quality Assurance	Throughput
Outcome 2.6: Adequate infrastructure to support teaching, learning and research	**Outcome 5.5: Improved quality assurance capability**	**Outcome 6.1: Increased education throughput**
Infrastructure Improvement: Optimize time utilization through **improved timetabling across all PSET institutions**	**Development of Demand-Driven Qualifications**: Direct QCTO to develop qualifications reflecting the Occupations in High Demand list, using data from LMIU	**Utilize cohort analysis** for detailed reporting on skills development, completion rates, and throughput across TVET and higher education sectors
Where needed, new CET campuses will be complemented by **repurposing unused or underutilised government-owned buildings.**	**Specialised Staff and Stakeholder Engagement:** Increase qualification development staff and enhance stakeholder involvement in curriculum design, especially in key sectors	**Data-Driven Decision Making**: Leverage HE data to monitor and adjust educational strategies

Outcomes 5.2, 6.2, 7.2

Quality research towards understanding PSET & employment

Research quality

Outcome 5.2: Improved research quality

National Licences Implementation: Prioritize national licensing for key journal databases and modernize, digitize, and share library operations

Open Access Initiatives: Collaborate with major educational and research organizations to foster open access publishing, including building a national open access roadmap

Tracer studies

Outcome 6.2: Improved exit outcomes related to the world of work

Develop and operationalise a national tracer system to track student destinations post-graduation, using this data to enhance college operations

Assist TVET colleges in collecting and reporting data on student outcomes to enable comprehensive tracer studies

Funding

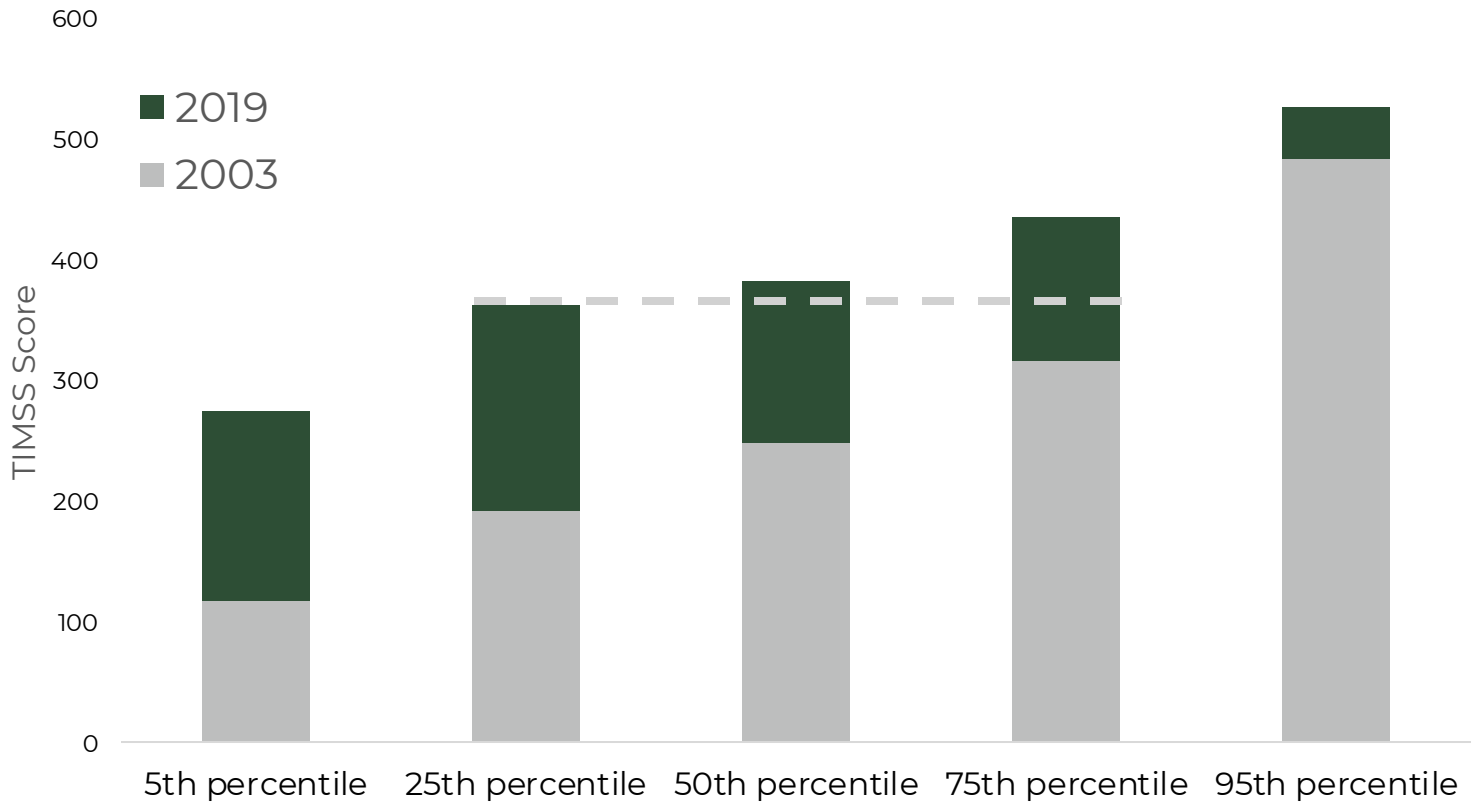
Outcome 7.2: Key strategies for funding and resourcing the PSET system

Establish **partnerships between public entities and the private sector** to support students not covered by NSFAS, ensuring broader support across all educational levels

Ongoing Funding Scheme Evaluation: Continuously assess the effectiveness and sustainability of financial support mechanisms

Learning inequality has reduced dramatically, but remains high

Declining Inequality in TIMSS Grade 9 Maths 2003-2019



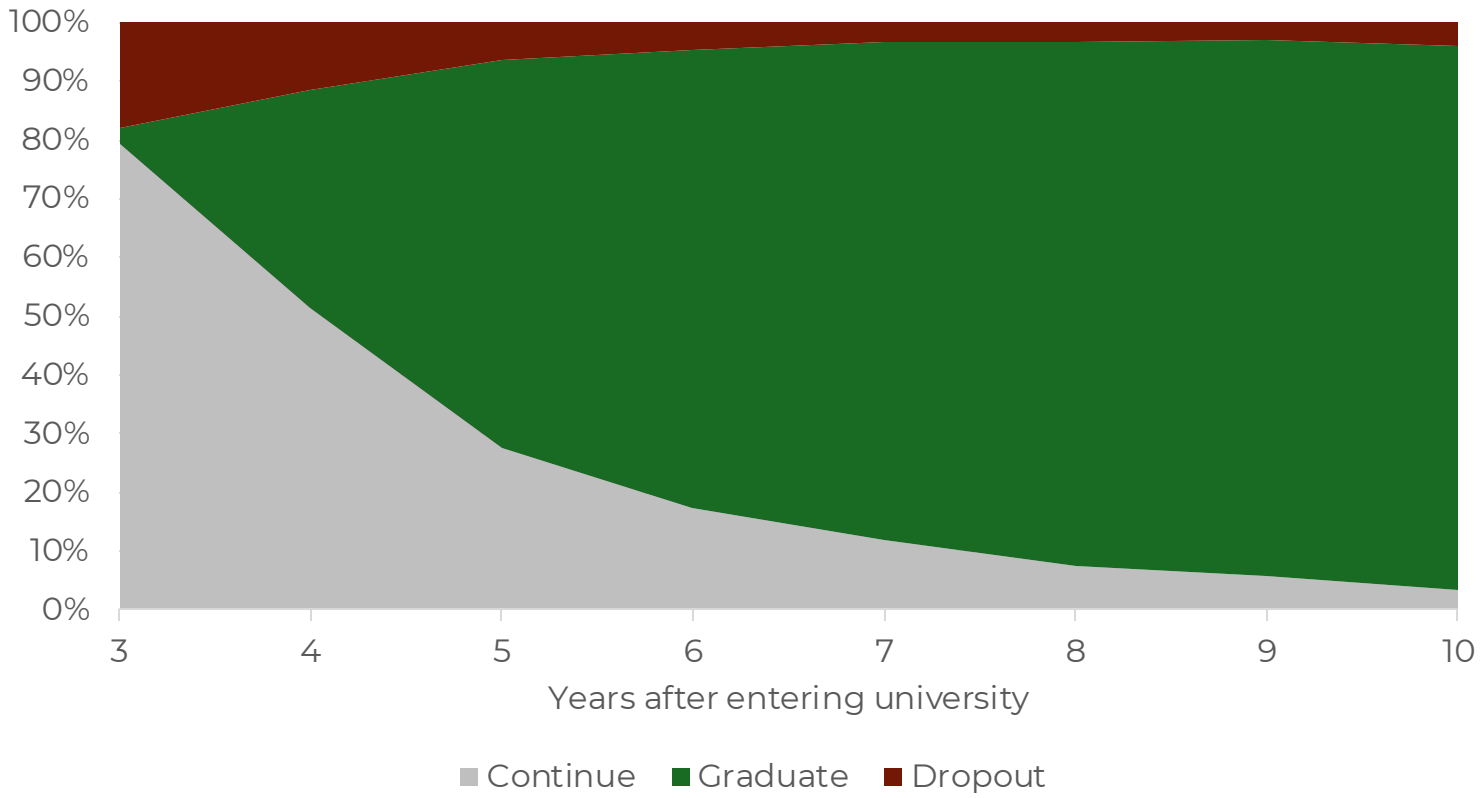
Source: Author from TIMSS (2003 & 2019)
The sample sizes of the top and bottom 5% are not large enough for statistically significant conclusions

Implications

- Between 2003 and 2019, test scores more than doubled for the bottom 5% of South Africans in TIMSS Grade 9 Maths
- In the same period, learning only improved by 9% for the top 5%
- The top 5% threshold in TIMSS Grade 9 maths in South Africa is 527 points (2019). This is only 7% above the median for all TIMSS participating countries, which are assessed in grade 8
- These results must be carefully interpreted as 5% of the sample is not a statistically significant sample size. Nonetheless, the same pattern recurs at the 25 and 75 percentiles

Funza Lushaka recipients enjoy a high graduation rate

% of FL 2013 cohort continuing, graduating, and dropping out



Source: Author from DHET (2023)

Implications

- It is remarkable how high the graduation rate of Funza Lushaka recipients is
- Although this success must be lauded, without teacher quality assurances, and historically poor teacher content knowledge, the trade-off between quality and quantity must be carefully analysed