

# **ABSIP Financial Services Symposium**

## **The crisis of Maths in SA**

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26 November 2025

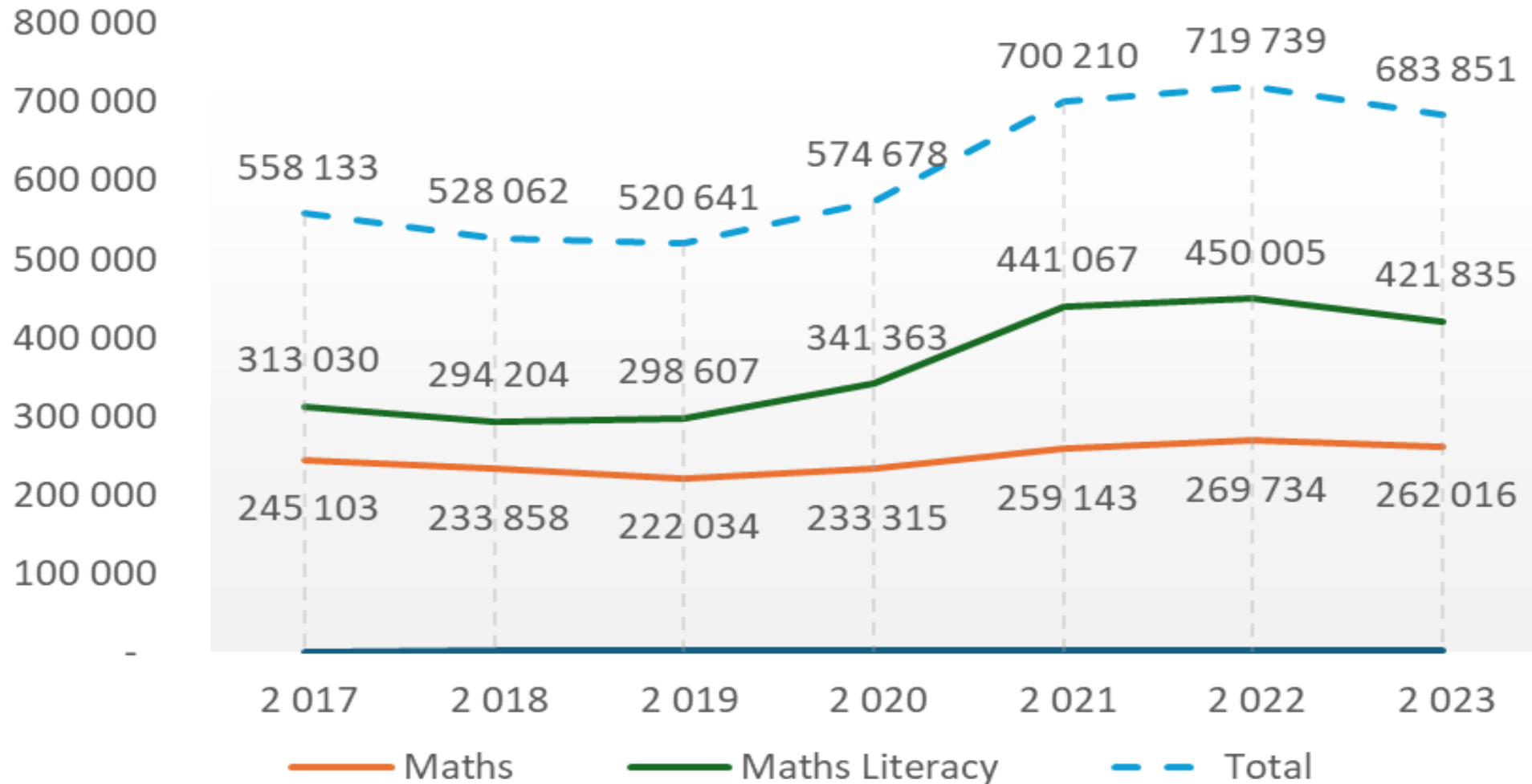


**Verwoed, the architect of apartheid said;**

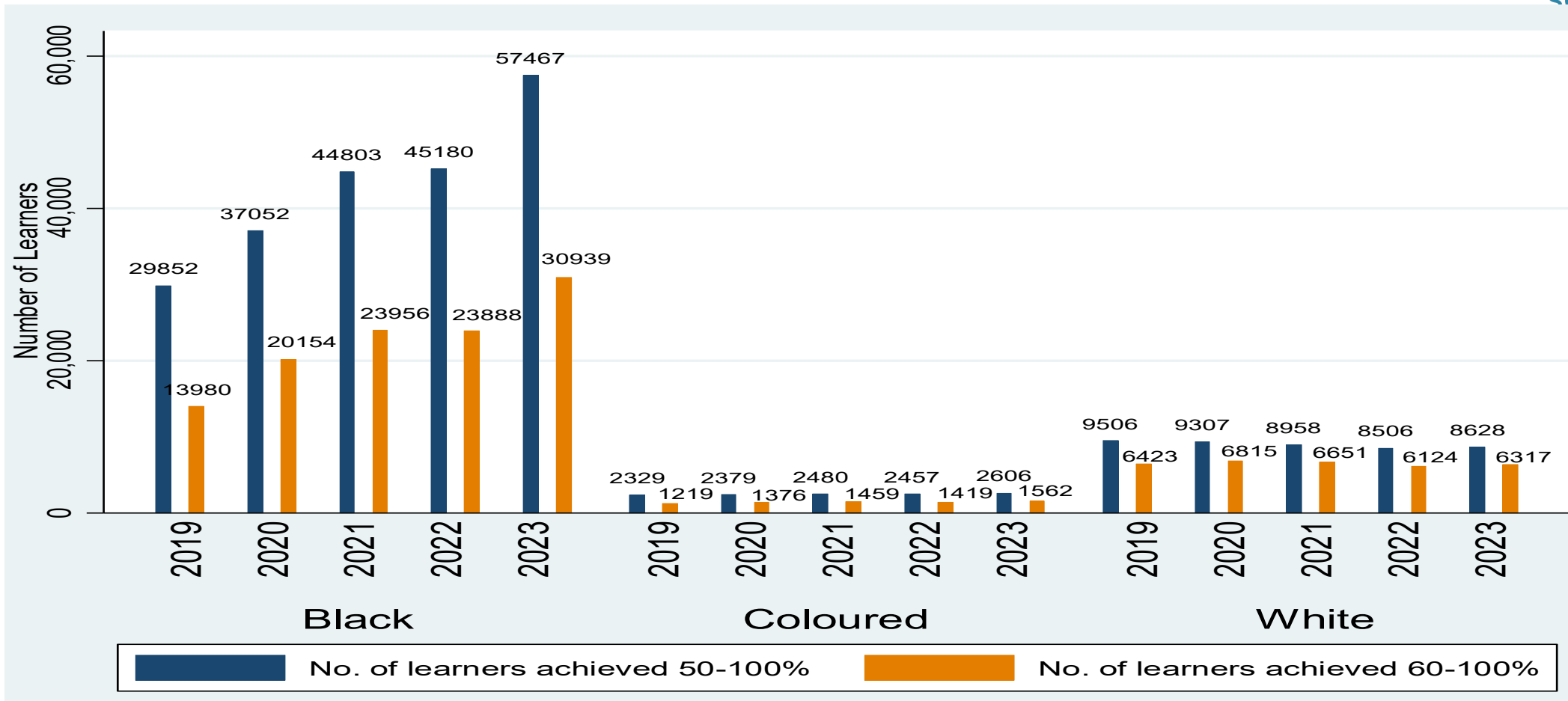
***‘What is the use of teaching the Bantu mathematics when he cannot use it in practice? The idea is quite absurd’***



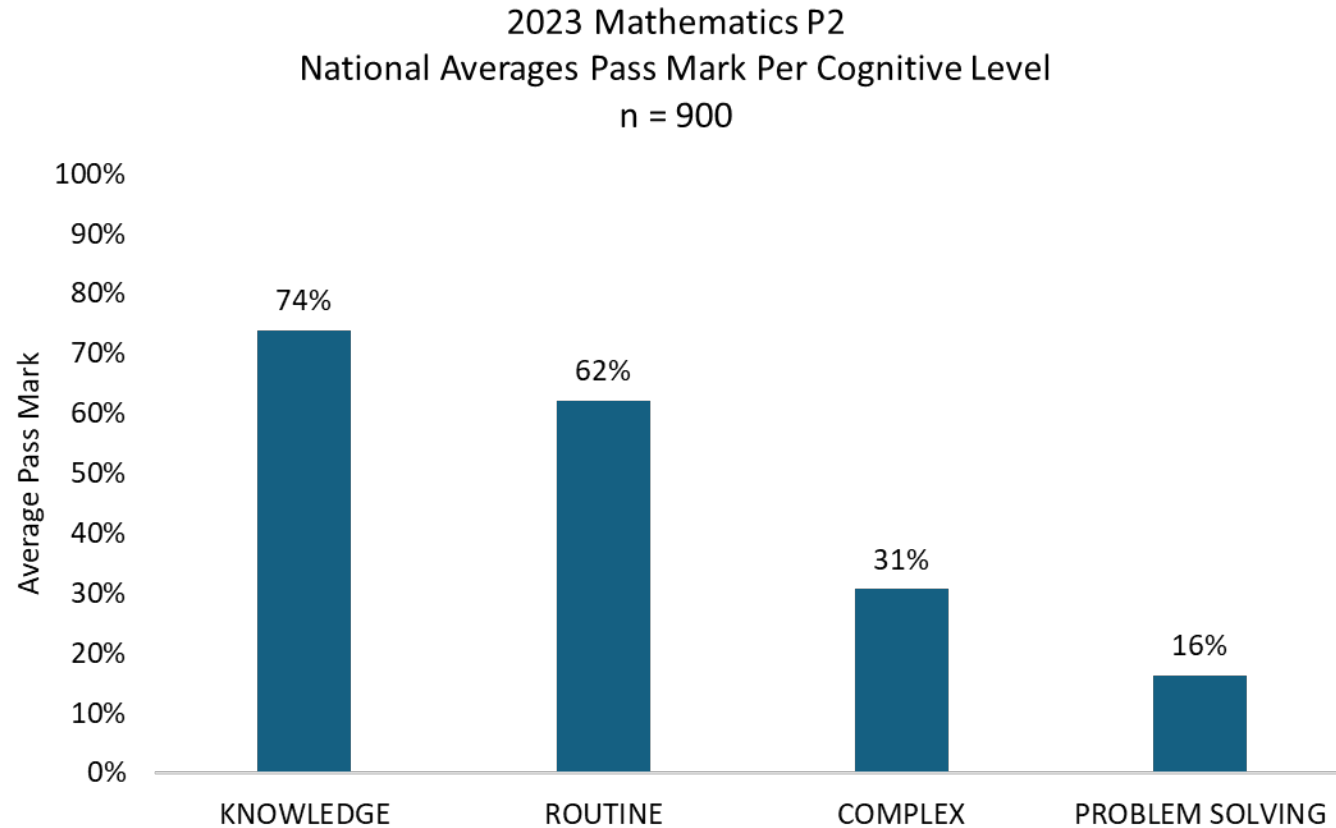
# Learners predominantly opt for Mathematics literacy over Mathematics



# Black candidates as %age of total candidates still very low



# 2023 NSC Average National % Pass Marks at Different Cognitive Levels



Declining trend in the number of learners proficient in answering questions that demand higher-level cognitive skills, specifically complex procedures and problem-solving.

Figure 9. 2023 NSC average national percentage pass marks at different cognitive levels

Source: DBE (2024). Sample and cognitive levels provided by DBE.

# Maths anxiety transfers from educator to learners



# ITE process towards being a teacher needs strengthening

Entry requirements inconsistent for a 480 credit B.Ed



ITE graduates are required to take immediate responsibility for teaching once graduated-no mentorship or support



Learners enter IP with fragile number sense; backlogs compound by Grade 7.



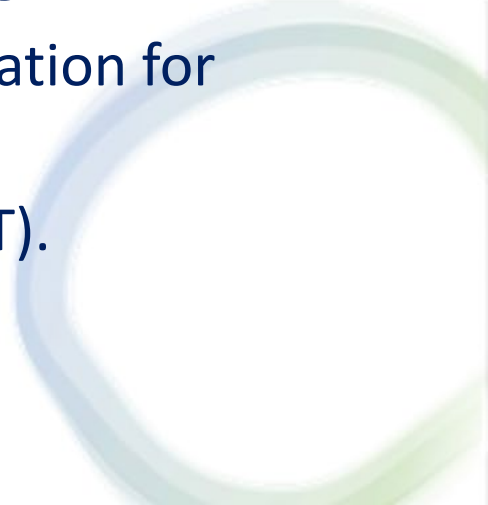
Number of credits for mathematics teaching very low in some cases.



Teachers avoid rich problem-solving; preference for procedural drill.



# Core Problems in Maths Teacher Education (Foundation Phase (FP) & Intermediate Phase (IP) (Grade R-7))

- Low mathematics credit loads in several B.Ed programmes (especially FP).
  - Fragmented curricula and weak alignment to CAPS/ATP.
  - Insufficient depth in primary mathematics (number sense, multiplicative reasoning, fractions, algebraic thinking).
  - Variability in practicum quality and limited coached practice in teaching maths.
  - Language of learning and teaching (LoLT) misalignment; limited preparation for multilingual classrooms.
  - Inconsistent assessment of mathematical knowledge for teaching (MKT).
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# Maths Credits in Selected Foundation Phase B.Ed Programmes out of 480 B.Ed credits

Institution (Phase)	Maths module(s)	Identified Maths Credits	Source
Wits (FP)	Mathematics for Primary/FP Teachers I–IV12 per level (x4)=	48 credits (10%)	Wits B.Ed Handbook PDF
UP (FP)	Foundation Phase maths	66 credits (14%)	UP Yearbook 2025
CUT (FP)	Foundation Phase maths	60 credits (13%)	CUT Programme page
<b>UNISA (FP)</b>	<b>Foundation Phase Mathematics –Level 1 to 3</b>	<b>36 credits (7,5%)</b>	<b>UNISA module page</b>
UNIZULU	Foundation Phase	64 credits (13%)	UNIZULU Handbook
University of the Western Cape	Foundation Phase Maths	95 credits (20%)	UWC Handbook
Walter Sisulu University	Foundation Phase –General Maths Content and Methods	52 credits (11%)	WSU Handbook

# Maths Credits in Selected Foundation Phase B.Ed Programmes out of 480 B.Ed credits

Institution (Phase)	Maths module(s)	Identified Maths Credits	Source
Rhodes	Foundation and Intermediate phase maths	48 (10%)	Rhodes prospectus
Cape Peninsula University of Technology	Maths Education for Foundation and Intermediate Phase	48 (10%)	CPUT yearbook
University of Limpopo	Foundation and Intermediate Maths	44 (9%)	UL Handbook
Tshwane University of Technology	Maths Education for Foundation and Intermediate Phase	48 (10%)	Yearbook
University of Johannesburg	Teaching Maths for Foundation Phase and Intermediate Phase	48 (10%)	UJ handbook
University of KwaZulu-Natal	Foundation Phase Maths	64 (13%)	UKZN handbook
University of Free State	Foundation Phase maths	68 (14%)	UFS handbook

# What “Low Credits” Mean in Practice

- Too few dedicated maths-content modules for FP student teachers.
- Over-reliance on single 12-credit courses without a clear 4-year sequence.
- Limited emphasis on fractions, decimals, place value, proportional reasoning.
- Assessment often tests general pedagogy rather than mathematical reasoning for teaching.

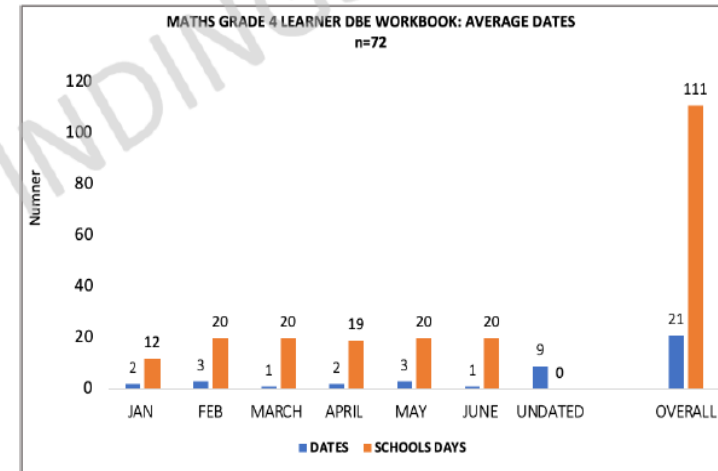
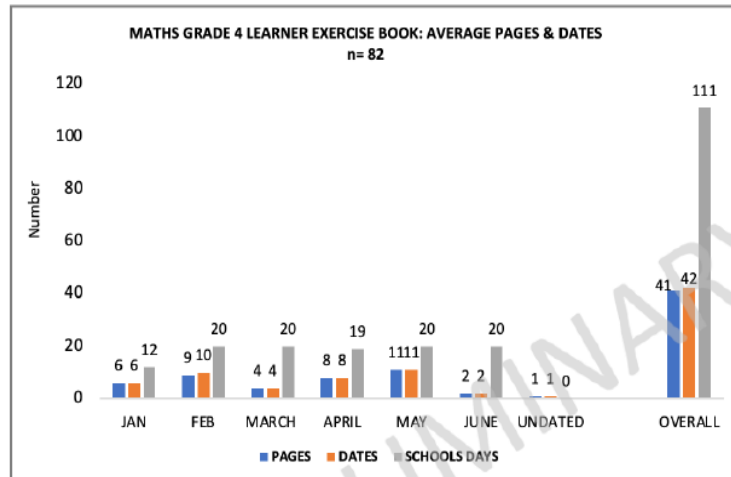


In a recent study conducted by the NECT in Limpopo sample schools, it was found that Grade 4 teachers spend very little time teaching maths. One of the reasons is the fact that they have not been prepared to teach the subject.

## GRADE 4 RESULTS

### Time on Task: Number of dates and Pages

“Written Maths work covered up to 40% of available teaching days in Terms 1 and 2 in Grade 4”



#### Assumptions based on Policy

- Teaching should be done everyday
- Written work should be done everyday in Maths

111 instructional days were available in Terms 1 and 2 of 2025 with an average of 20 teaching and learning days per month

- An average of 42 days (38%) was spent on Maths learner exercise books
- An average of 21 days (19%) was spent on Maths DBE workbook activities
- Learner workbooks contained a higher volume of written work compared to the DBE workbooks

# Consequences Observed in Classrooms

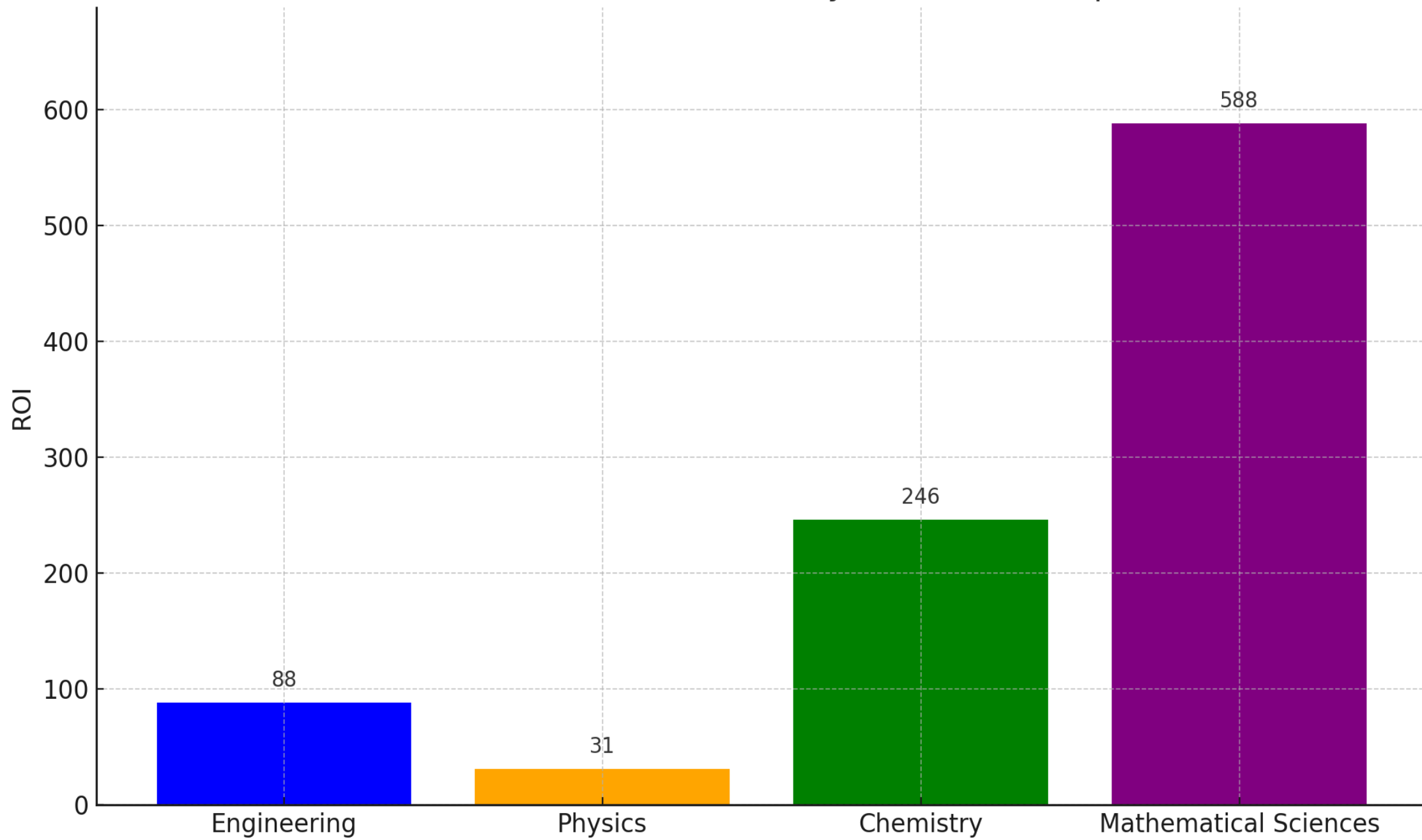
- Teachers avoid rich problem-solving; preference for procedural drill.
- Misconceptions persist (place value, fractions, meaning of '=').
- Slow coverage of CAPS;
- Learners enter IP with fragile number sense; backlogs compound by Grade 7.



# Mathematics –a catalyst for National prosperity and sustainable innovation



# Return on Investment (ROI) by Scientific Discipline



# The invisible algorithms of finance

Finance runs on formulas:

Algorithms make most trades on global markets.

Behind every financial product is a model.

Real-time decisions require millisecond-level accuracy.

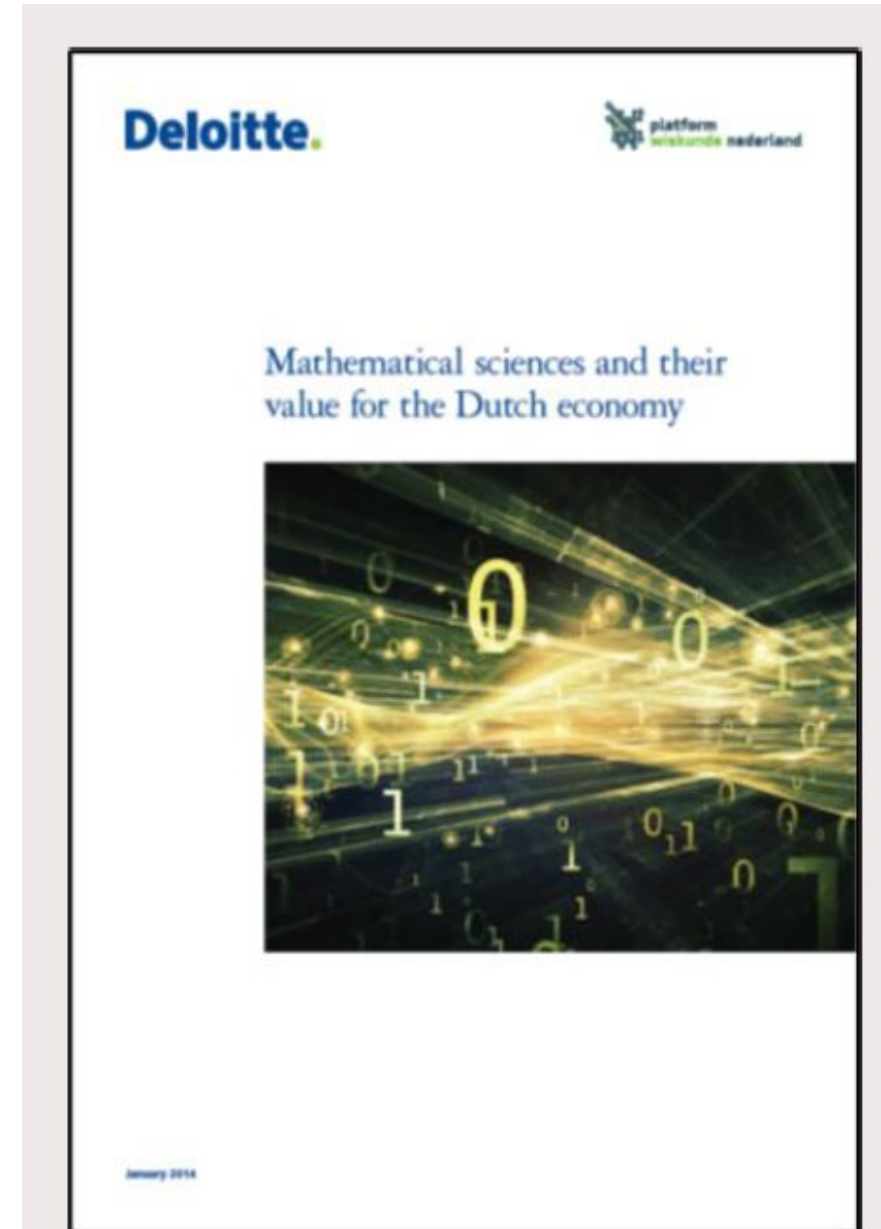
**Every credit score, investment, insurable risk, or bank transfer is touched by mathematics.**

Mathematics: a catalyst for national prosperity and sustainable innovation.



# The importance of Maths on the economy.

- Mathematics plays a fundamental role across science, technology, and industry —but this is often invisible.
- Despite growing importance (AI, data science, sustainability), public and political awareness lags behind.
- In the Netherlands Deloitte was asked to quantify this impact using a rigorous economic methodology, including direct, indirect, and induced.



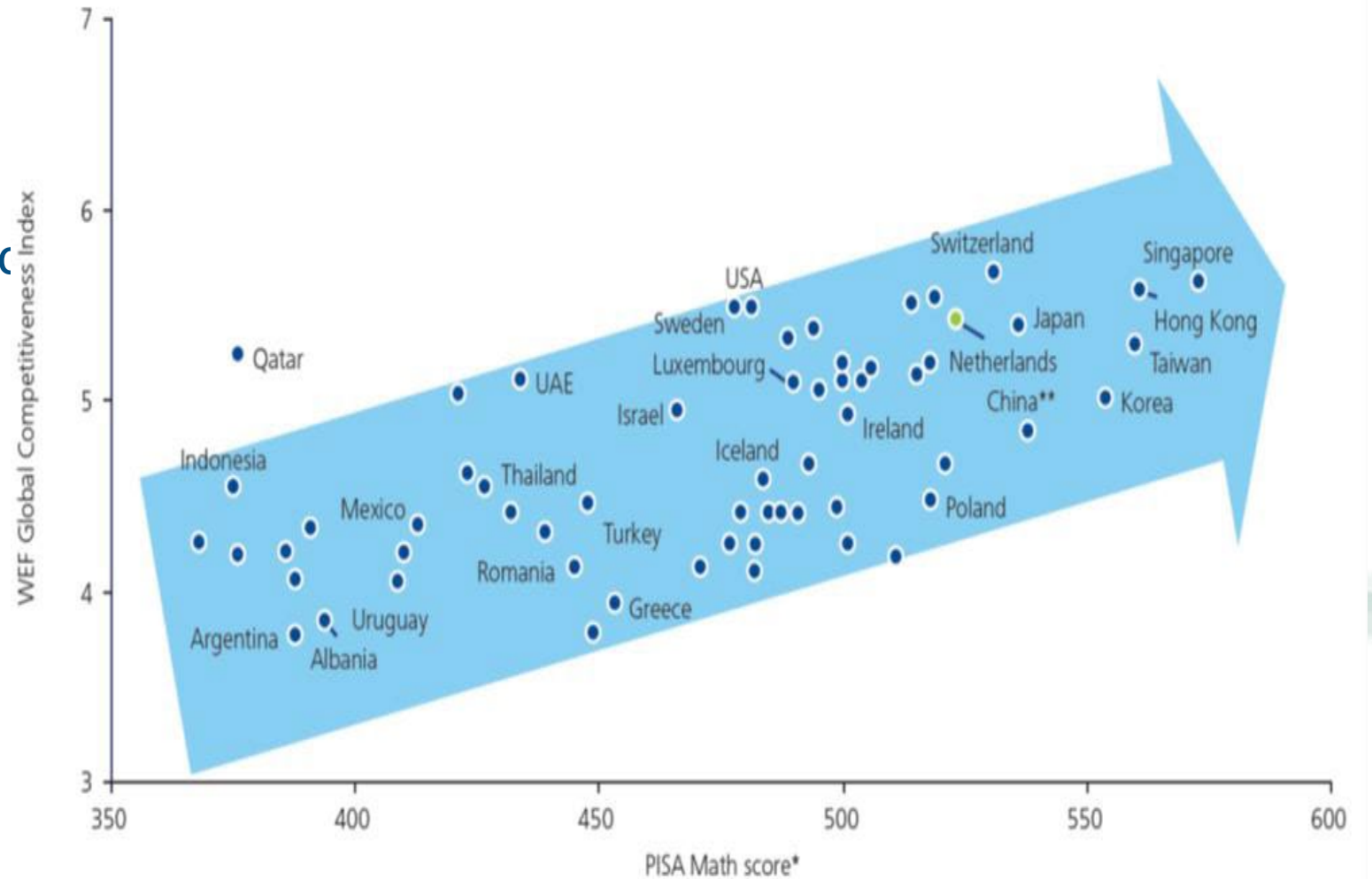
# Similar reports in the UK , France and Spain.



# The importance of Maths on the economy.

A strong mathematical science foundation is critical to the success of any advanced economy.

- Better mathematical skills correlate with a more competitive economy and a higher standard of living.



## Industries contributing the most from mathematics

The industries with the highest direct contribution are;

- Banking, Insurance, Renting and trading in real estate, Public administration and defense, IT Services and Healthcare.
- This is a direct consequence of the high number of mathematical sciences jobs and the relatively high salaries in these industries.



# Thank you



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