Primary Teacher Education (PrimTEd) Results

Nicky Roberts

6 September 2023

QER conference, Stellenbosch

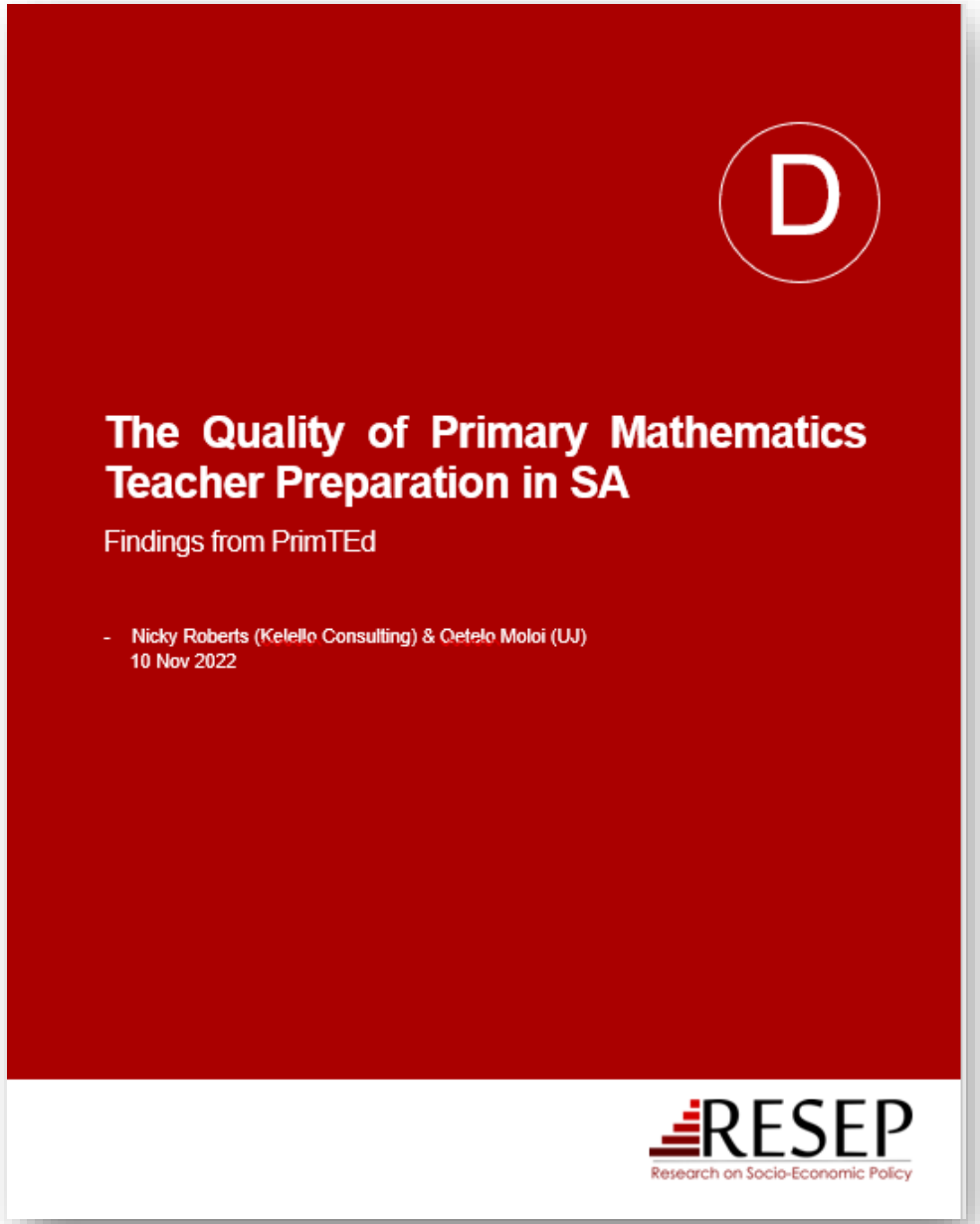
LET'S RECAP...

The Quality of Primary Mathematics Teacher Preparation in SA

Findings from PrimTEd

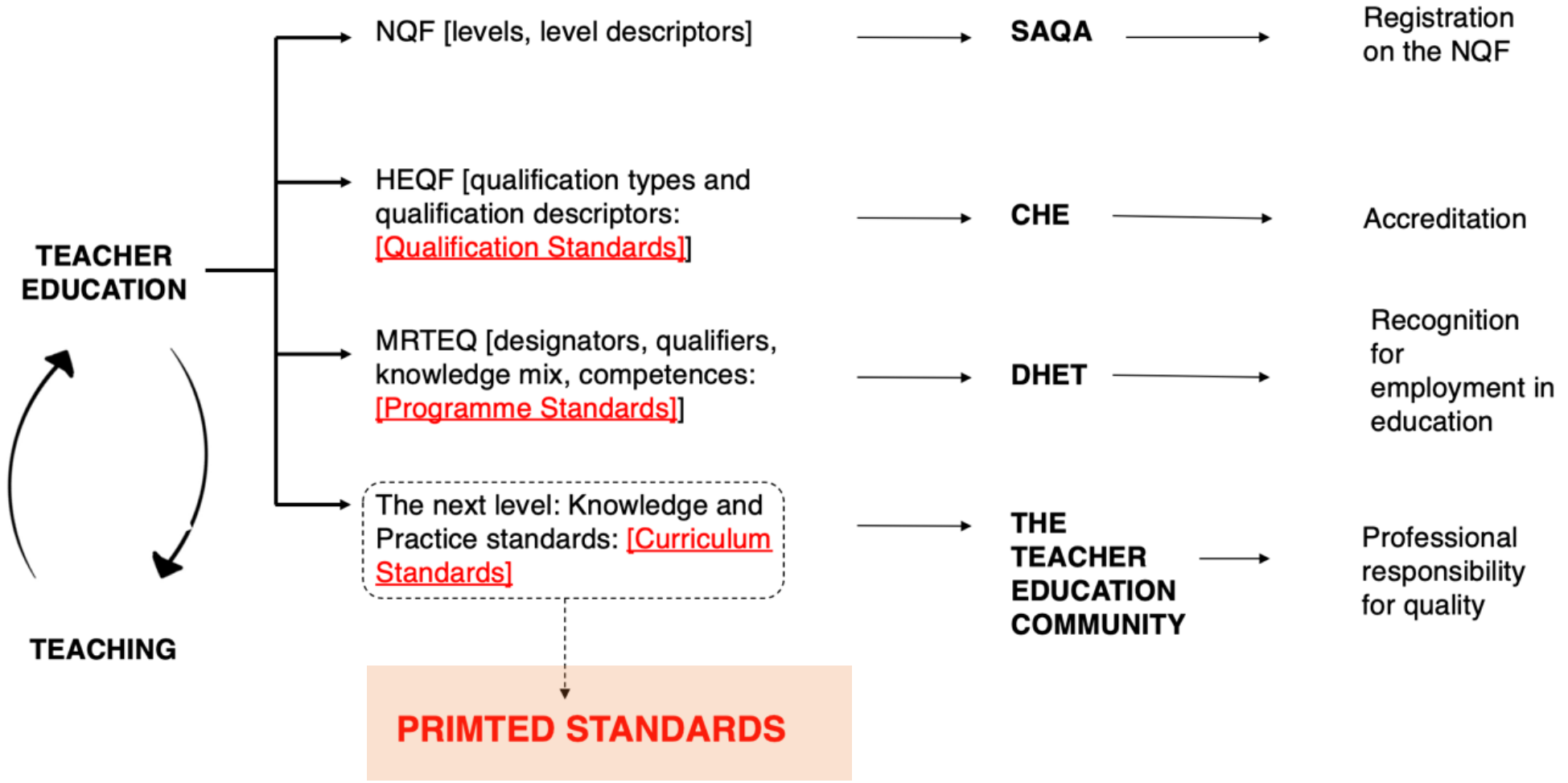
- Nicky Roberts and Qetelo Moloi

November 2022



What is PrimTEd?

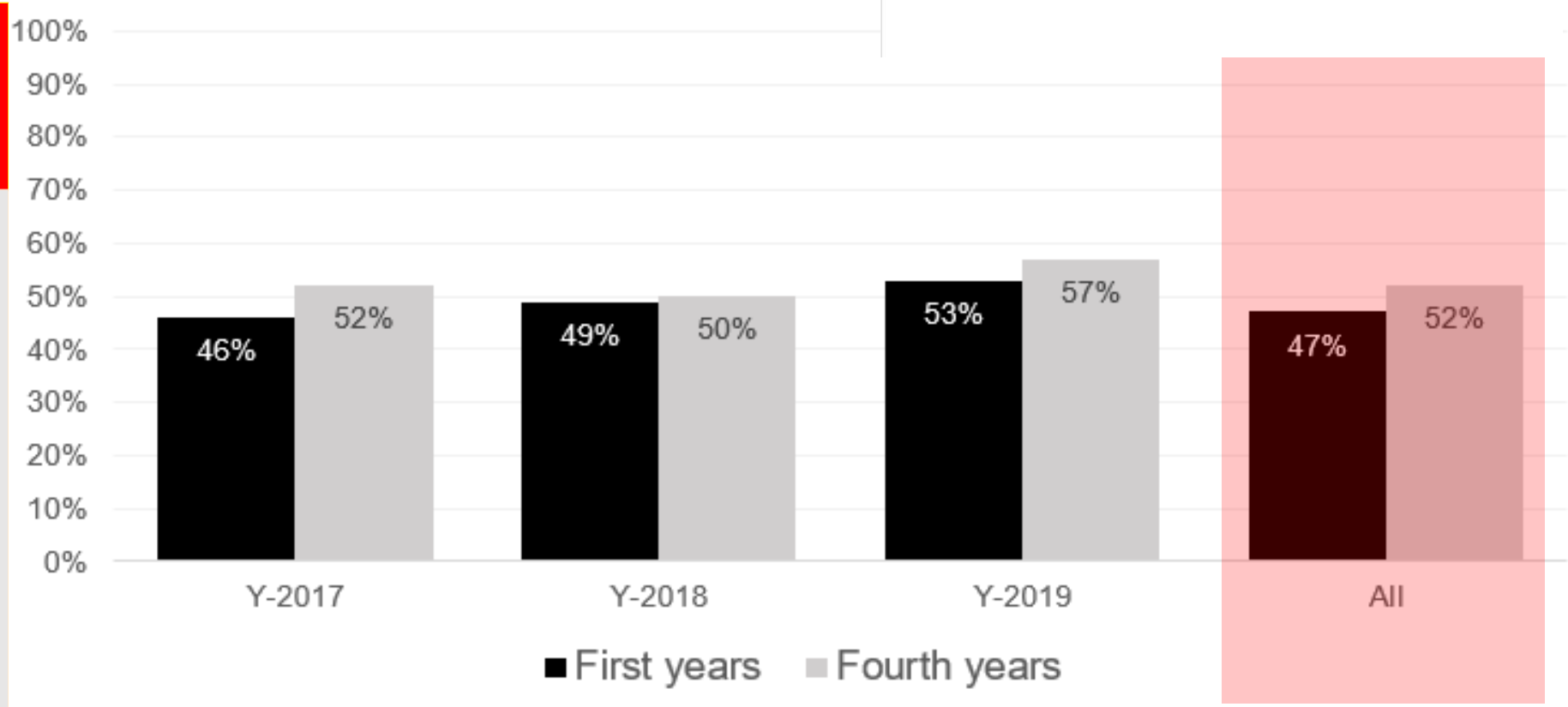
LET'S RECAP...



LET'S RECAP...

PrimTEd

- Mathematics knowledge for teaching at primary school

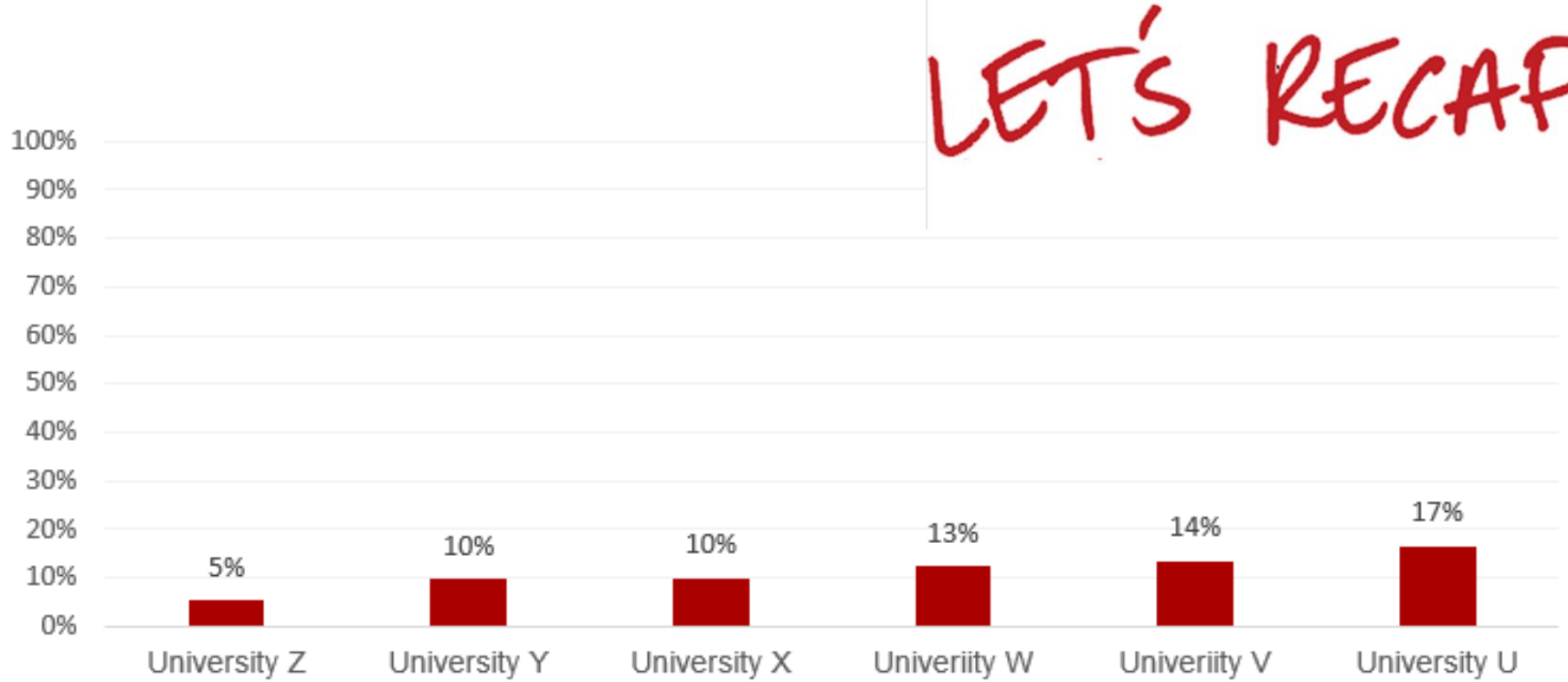


Source: PrimTEd assessment workstream (2019), adapted from Roberts & Porteus (forthcoming)

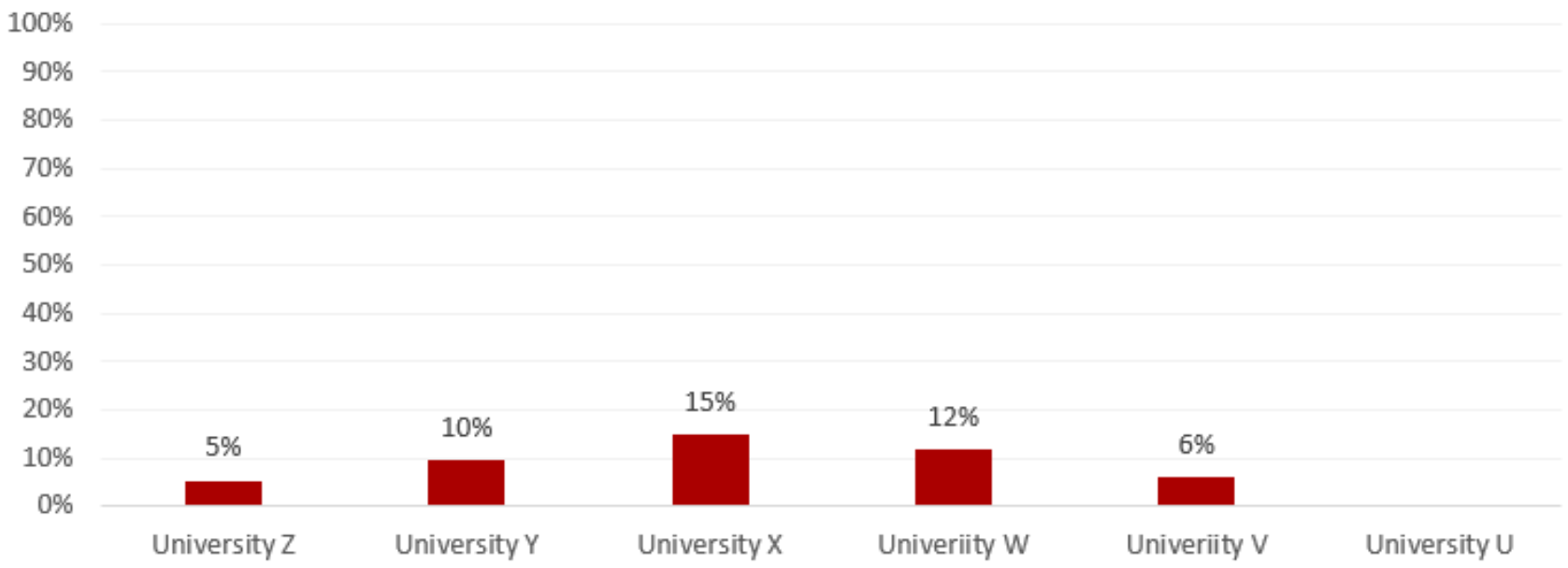
LET'S RECAP...

Credits for maths

B.Ed (FP)



B.Ed (IP)



Primary Teacher Education (PrimTEd) Results

Vision

South African Initial Teacher Education

is professionally organized and respected as it offers high quality programmes for teachers entering primary schools.

This is the case because the contributing academics involved in initial teacher education for primary schooling

❶ Set, monitor and improve ITE **curriculum standards (used to inform curriculum design)**;

❷Collaborate in various research collectives that design, trial and research **learning and teaching materials** for use in ITE courses; and

❸ Annually evaluate the quality of their ITE programmes by **assessing student teachers to reflect on**

- student intake (thereby pitching at the right level); and
- student knowledge at exit level (thereby improving the quality of courses offered)

MRTEQ

Awaiting DHET publication

PrimTEd knowledge & practice standards

Home languages

- isiZulu, isiXhosa, siSwati, isiNdebele
- Sesotho, Setswana, Sepedi
- Xitsonga, Tshivenda, Afrikaans

Mathematics

First Additional language

- English

PrimTed TESTS

PrimTEd 2.0

Item bank development for:

- L&L: English
- Mathematics

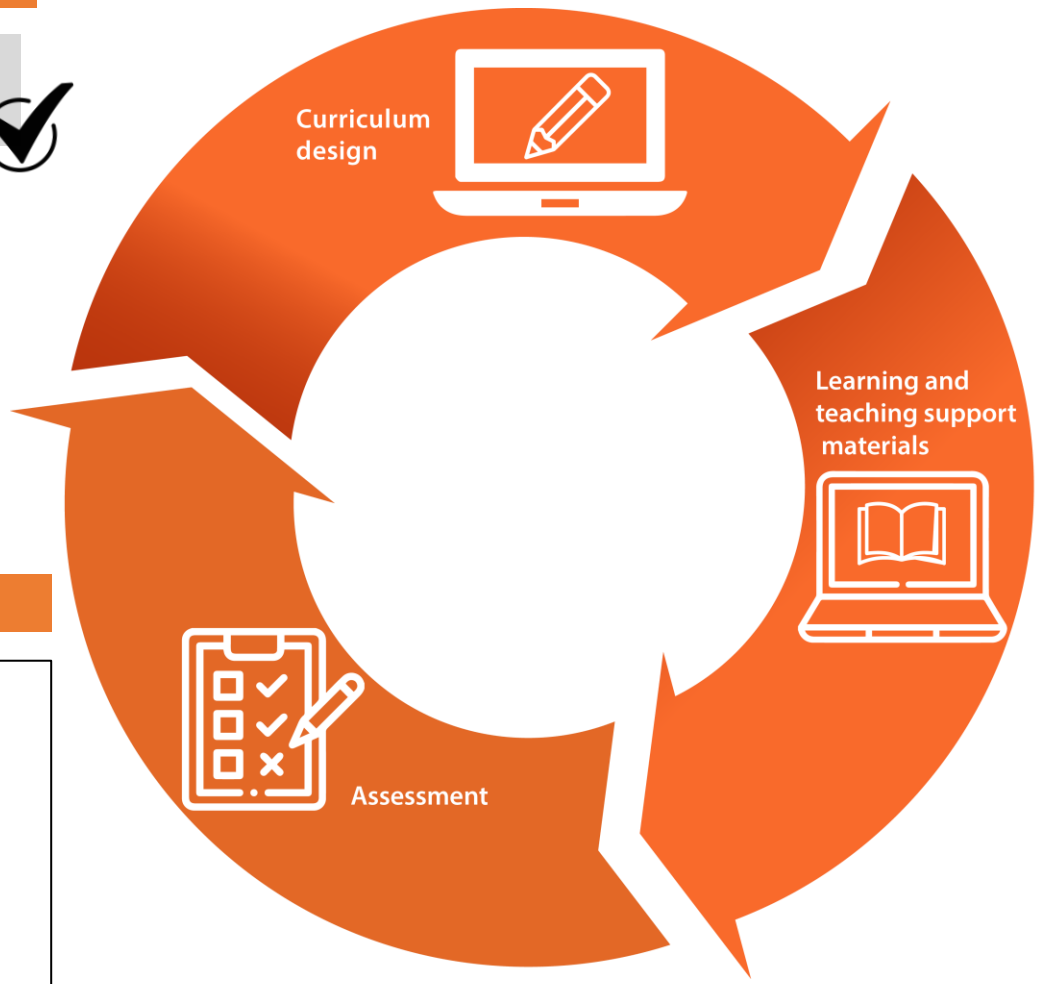
PrimTEd 3.0

Test management are administration for

- L&L: English
- Mathematics

Test development for

- African languages (x9)



Course design research collectives

NMI Literacy

School-based isiXhosa English literacy (incl. reading)

NMI Maths

School-based isiXhosa English maths

UFH Bilingual B.Ed

(NMI)

Mathematics 4 primary teachers 1.0

(3 modules, 6 HEIs)

African languages 4 primary Teachers

- isiZulu, isiXhosa, siSwati, isiNdebele
- Sesotho, Setswana, Sepedi
- Xitsonga, Tshivenda, Afrikaans

Mathematics 4 primary teachers 2.0

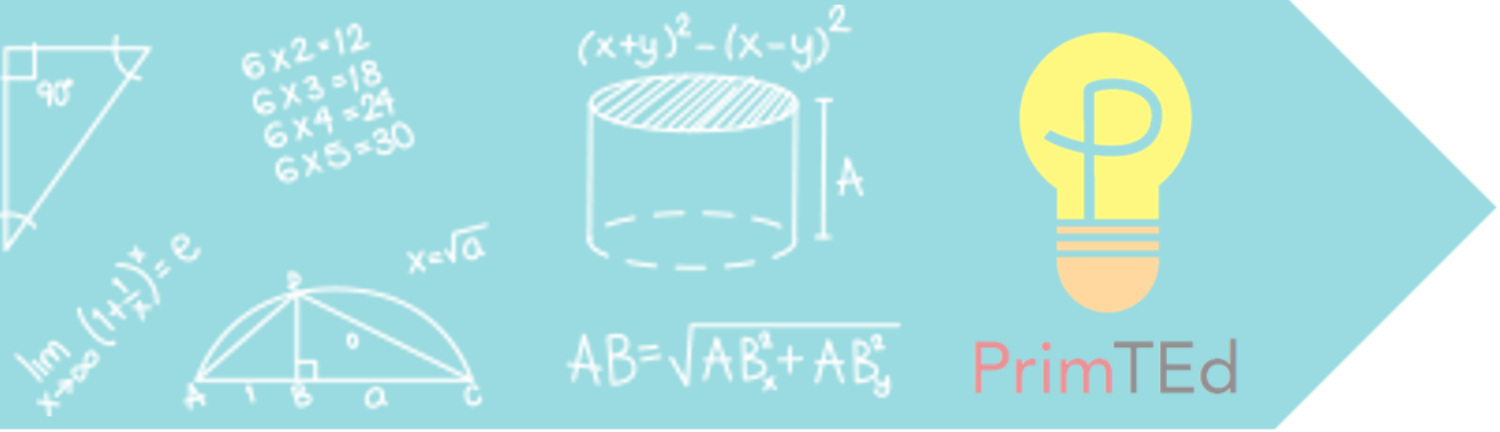
(6 modules, 9 HEIs)

Sesotho isiZulu Reading Project (SIRP)

- Sesotho
- isiZulu
- English

English4Primary Teachers

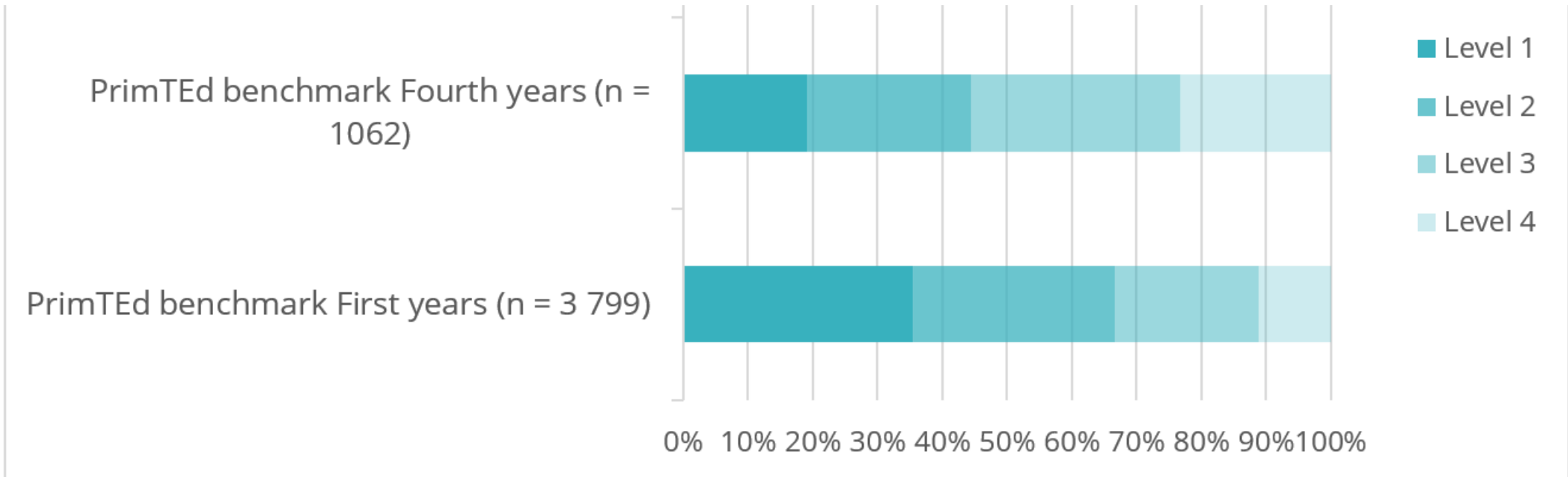
- English



Primary Teacher Education (PrimTEd): Mathematics test

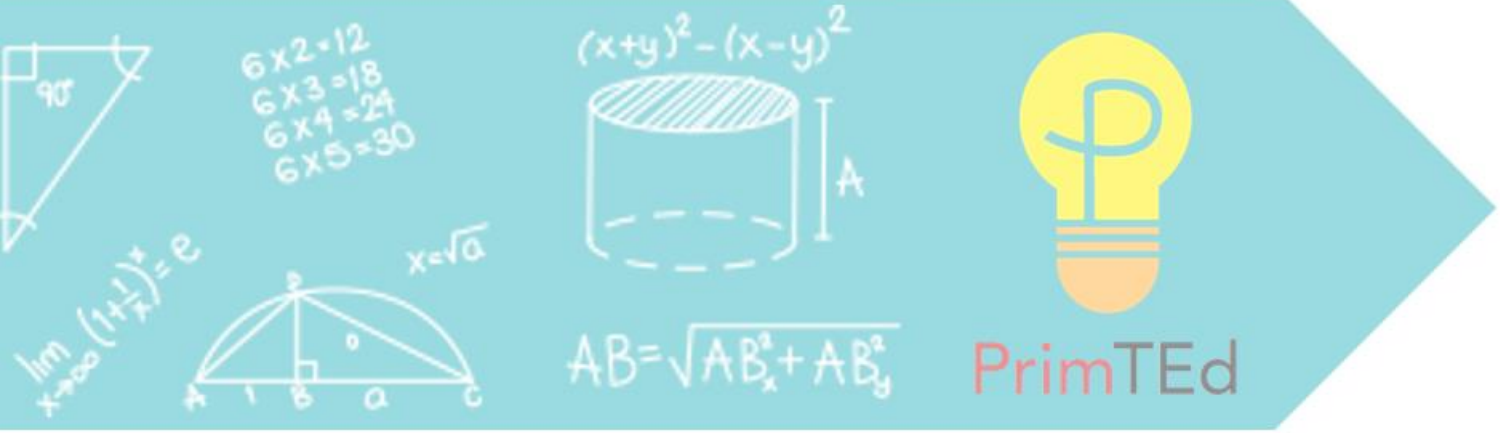
Mathematics

Measure	n	Mean	SD
PrimTEd benchmark (2018-2020) **First years**	3799	48%	16%
PrimTEd benchmark (2018-2020) **Fourth years**	1062	53%	17%



PrimTEd Mathematics Levels 1 to 4

Level 1	Students are not yet demonstrating the knowledge and skills evident at Level 2 mathematics.
Level 2	Student functions largely at 'operational' as opposed to 'conceptual' level & can: • do simple straightforward operations (+, - & x) that involve whole numbers; • identify whole numbers on a number line; • identify regular geometric shapes; • calculate area & perimeter of rectangles using numbers, not symbols; • solve problems of one-variable: time/money.
Level 3	Student functions largely at 'conceptual' as opposed to 'operational' level & can: • operate equally well with symbols & numbers; • make reasonable estimations of spatial dimensions & have 'good sense' of proportion; • express decimals as common fractions & vice versa and do estimations that involve both; • solve complex problems that involve more than one variable, e.g. money & mass; • support their viewpoints with valid reasons.
Level 4	Student functions predominantly at 'conceptual' level & use operations to support reasoning & can: • organise & arrange both numbers, variables & functions in logical order to solve problems; • work efficiently with a wide spectrum of real numbers; • 'visualise' & operate complex spatial transformations to solve problems; • support their viewpoints with valid reasons.



Next steps

- Item bank aligned to PrimTEd maths standards 2023-2024
- Piloting 5 versions of the test across participating universities 2024
- Rasch analysis and instrument refinement 2024 to produce standards-based reports
- Administer PrimTEd mathematics across participating universities 2025-2029

Maths4 Primary Teachers

2019 - 2021
Maths Intensive (UJ and CPUT)

2022
Maths4Primary teachers: Emergent Number Sense (UJ, CPUT, UFH, TUT, Rhodes, WSU)

2023
Maths4Primary teachers: Emergent Number Sense (UJ, CPUT, TUT, Rhodes, WSU, UKZN, UniZulu)
Maths4Primary teachers: Adding and subtracting 1 (CPUT, UKZN)

Prof Nicky Roberts (nicky@kelello.org)
PMO: Dr Monica Mawoyo, Dr Qetelo Moloi, Dr Thelma Mort

1. Jeanette Ramolla, Anil Kanjee (TUT)
2. Mzi Krexe, Jogymol Alex, Bafundi Mapisa and Faith Hlungulu (WSU),
3. Zonia Jooste, Sharon Mc Auliffe, Rose Brien, Byron Abrahams (CPUT),
4. Erna Lampen (Stellenbosch),
5. Lynn Bowie, Corin Mathews, Hamsa Venkat (WITS),
6. Xoliswa Lydia Mbelani , Pam Vale, Lise Westerway, Samu Chikiwa, Thabisa Booi (Rhodes),
7. Zingiswa Jojo (UNISA),
8. Kathleeen Fonseca, Jerry Maseko, Emmanual Libusha (UJ),
9. Rajen Govender (UWC),
10. Beverley Williams, Nondwe Ngibe, Karen Hackman, Kim Porteus (UFH),
11. Lynn Kok (Unizulu),
12. Zanele Ngcobo (UKZN)
13. Susan van Harmelen (Varsity College)
14. Mogege Mosimege, Msebenzi Rabaza (UFS),
15. Ravindraw Bappoo, Glynnis Daries Jeffrey Thomas (SPU),
16. Kaashief Hassan, Gary Powell, Zain Davis (UCT),

Primary Teacher Education (PrimTEd): Language (English) test

English

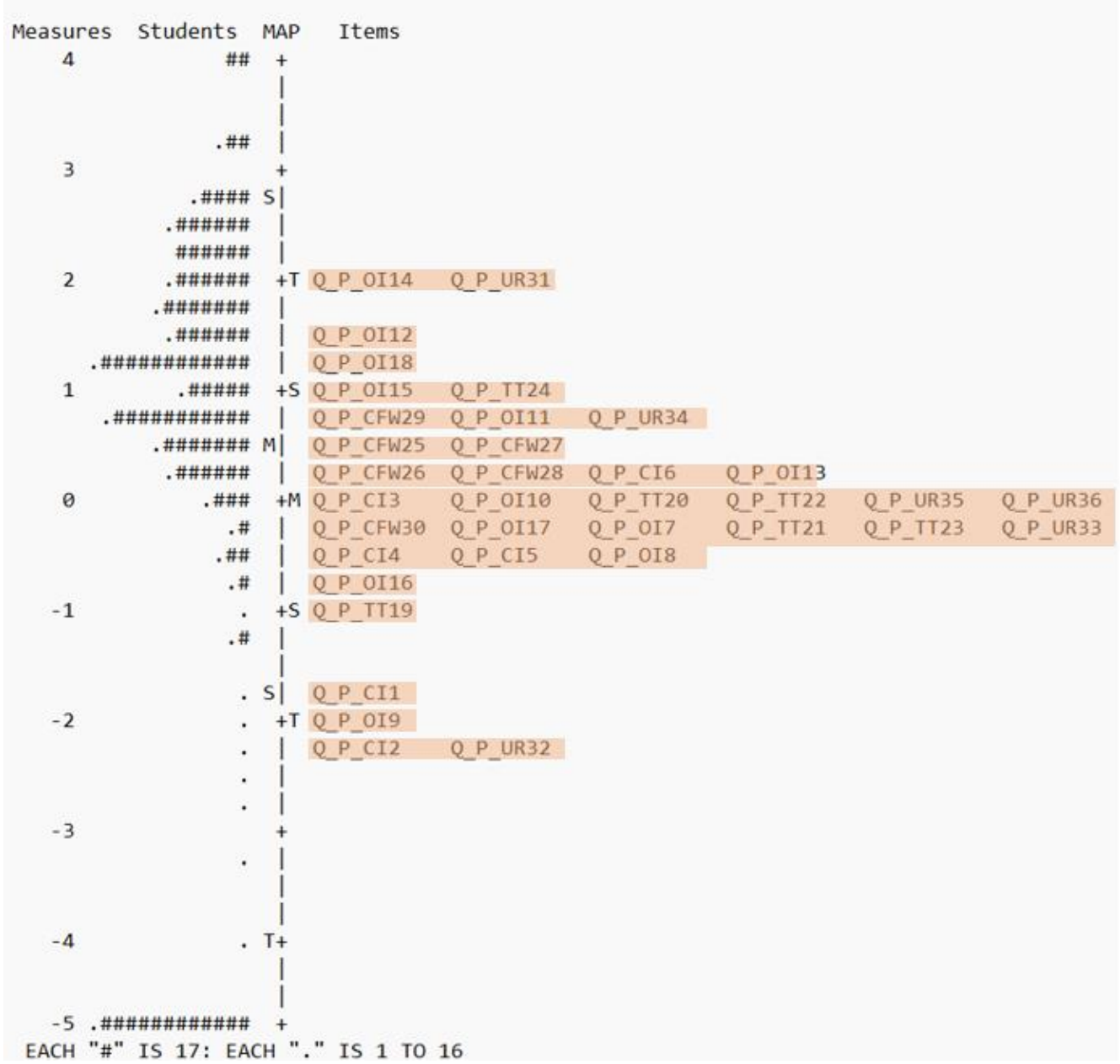
Persuasive language
Based on CALS (Uccelli et al.)
(Grades 4-8)

- Connecting Ideas,
- Tracking Themes,
- Organizing Texts,
- Breaking Words,
- Comprehending Sentences,
- Interpreting Epistemic Stance Markers, and
- Understanding Metalinguistic Vocabulary

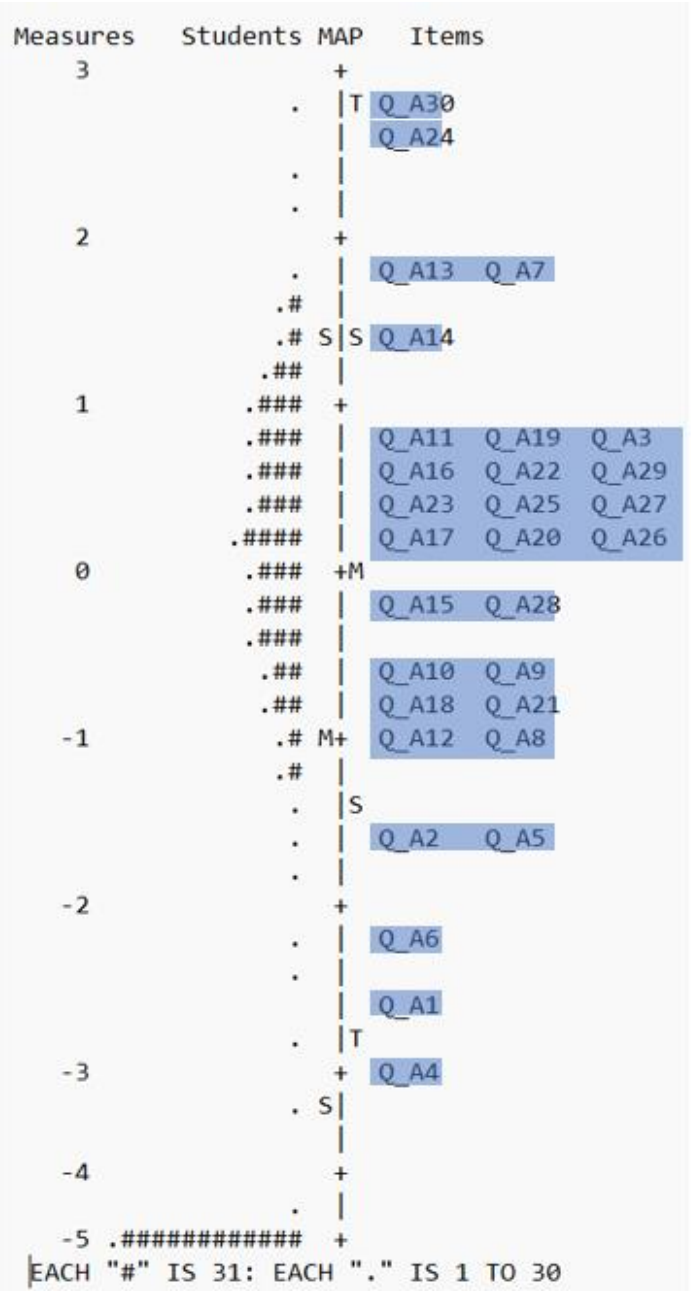
Authentic texts
Based on ALS (Cliff et al.) “Tea test”.
University entry

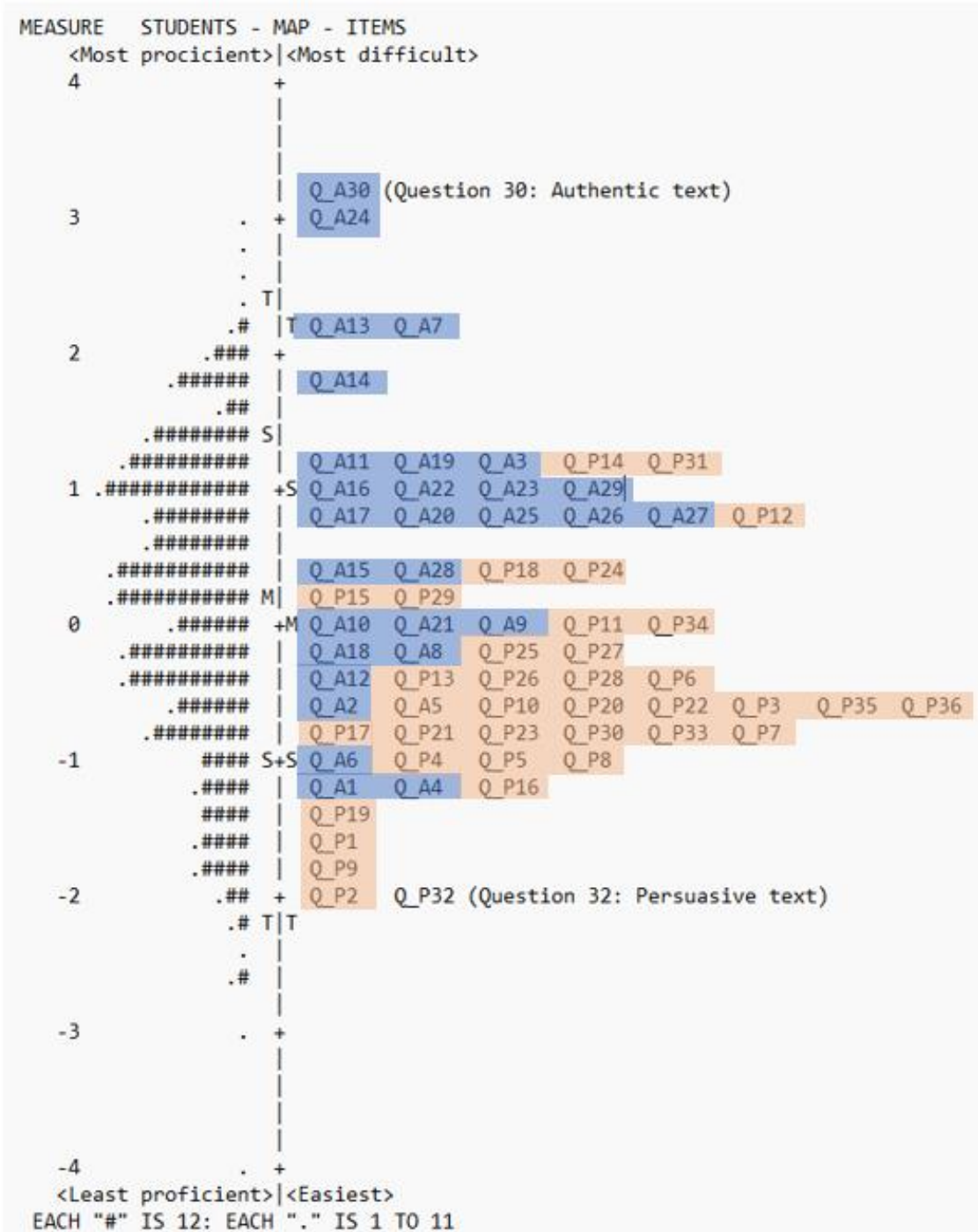
- Vocabulary,
- Separating the essential from the non-essential,
- Inference, metaphorical expression and text genre,
- Editing and
- Understanding the communicative function of sentences

Persuasive language



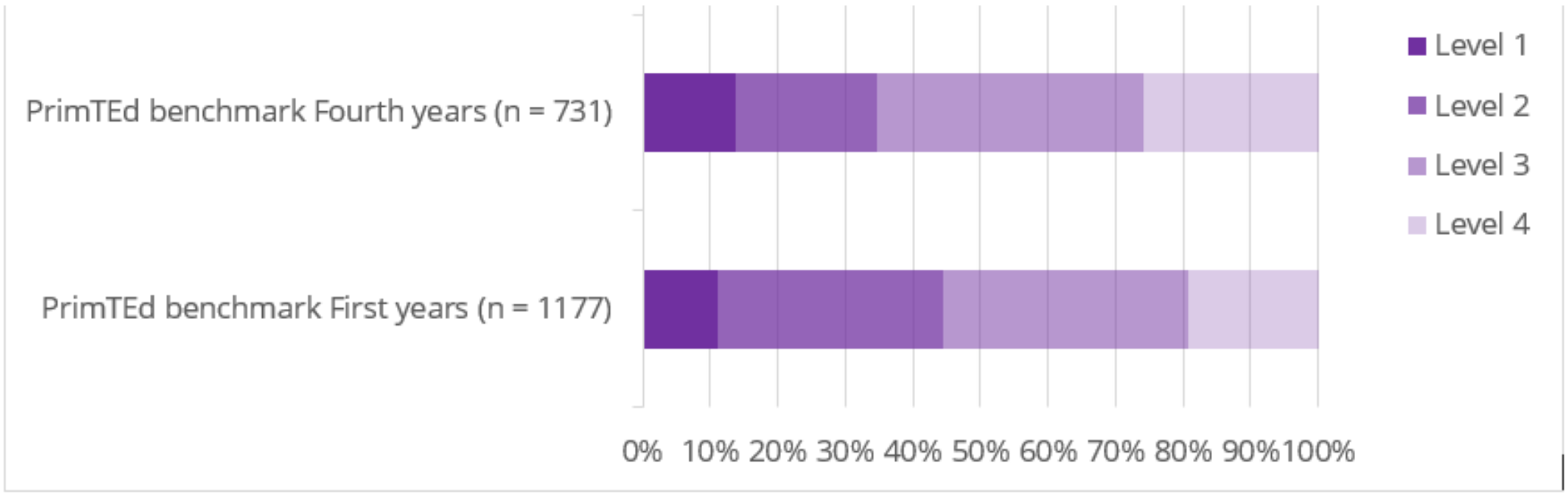
Authentic texts





Combined: Persuasive language and authentic texts

Measure	n	Mean	SD
PrimTEd benchmark (2020-2022) **First years**	1177	52%	20%
PrimTEd benchmark (2020-2022) **Fourth years**	731	55%	21%



PrimTEd Language (English) Levels 1 to 4

Level 1	Students are not yet demonstrating the knowledge and skills evident at Level 2 Persuasive language in English.
Level 2	Students have a fairly solid understanding of how to use connecting words and connecting phrases to connect ideas in English. The demonstrate this ability most of the time. In an English text, they can track some themes, and can change the word form to make meaning in sentences (reflecting knowledge of vocabulary, syntax and meaning). They can organize some ideas in English, especially it seems when the content is familiar (such as a text relating to school). However this is beginning Persuasive language knowledge and skills in English – skills which are not yet stable, as they cannot do this in every instance. Students are able to read for meaning in English at the most basic level. Students can follow anaphors, ascertain the purpose of a text l swap out (find synonyms) for certain easy words; deduce the meaning of simple phrases within the context of the text. The student is able to answer simple comprehension questions about an English text.

Level 3	Students demonstrate the knowledge and skills in Level 2, and with greater consistency. They show a much greater fluency reflected in a better vocabulary and understanding of syntax. They show greater flexibility in their handling of words and adapting them to different contexts. They can identify the purpose of English texts, are able to build an argument, understand responses and organize texts in English. They consistently respond well to tasks requiring organizing ideas (arranging texts to be logical and coherent) and understanding responses in English. Students demonstrate a wider vocabulary and agility in English language. Students can: select synonyms, fill in missing words accurately, choose the right words. identify the kind of text used, understand why simple writing devices, phrases or expressions might be used, and identify the main idea in a text. They have a deeper understanding of text and also understand the implications of something.
Level 4	Students demonstrate the knowledge and skills relating to English referred to at both Level 2 and Level 3. In addition, at level 4 students can identify the parts of an English text and describe the roles those parts of text play. They can arrange an argumentative text, which reflects on their increased comprehension and suggests a writing ability in English. They can track themes as they develop in English texts. Students show a higher level of comprehension and understanding of syntax as well as increased vocabulary. They demonstrate a more complex facility with English texts.

Note: Descriptions were current as at August 2023. These are to be further refined by the PrimTEd English language collective.

Next steps

- Item bank aligned to PrimTEd English (FAL) standards 2023-2024
- Piloting 5 versions of the test across participating universities 2024
- Rasch analysis and instrument refinement 2024 to produce standards-based reports
- Administer PrimTEd English across participating universities 2024-2028

- Formally convene an African languages collective to PrimTEd design tests for African language (HL) standards 2024
- Design and pilot instruments for African languages 2024
- Rasch analysis and reporting 2025
- Administer 2024-2028

- English4Primary teachers is in concept phase
- African languages4primary teachers is seeking funding.

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1. Hayley Van Der Haar, Allison Charis, Elbie Henning, Fikile Simelane, Kerry McCarthy, Lionel Posthumus, Maria Vaz (UJ)
2. Anil Kanjee, Zama Mthembu (TUT)
3. Hanlie Dippenaar, Candice Livingston, Christine DuToit, Coral Forbes (CPUT)
4. Thabile Mbatha, Pravina Pillay (Unizulu)
5. Thelma Mort, Margaret Ramokgopa, Mashala Mashaba (UNISA)
6. Ravindraw Bappoo, Glynnis Daries Jeffrey Thomas (SPU),
7. Sibongile Xamlashe , Annelie Roux, Carisma Nel (UNW)Mzi Krexe, Jogymol Alex, Bafundi Mapisa and Faith Hlungulu (WSU),
8. Judie van Heerden, Connie Makgoba, Ina Joubert, Makwalete Malatji (UP)
9. Brian Ramadiro (UFH)
10. Nokwanda Mbusi (UMP)
11. Nonzukiso Mpondwana (WSU)
12. Someka Ngece, Thembisa Kosi (UWC)
13. Bridget Manyaga (Stadio)
14. Susan van Harmelen (Varsity College)
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Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

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