Collaborating to prevent learning difficulties in school-age children: Public-health thinking in action

Distinguished Professor Pamela Snow

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LA TROBE UNIVERSITY

SOLAR LAB
Science of Language and Reading Lab

College of Ed Dev Psychologists, Melbourne, February 13, 2026

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Presentation Overview

- What IS reading and why is it important?
- What is “literacy”?
- How can public health principles help in reading instruction?
- MTSS and RTI: gifts from public health
- Screening Vs diagnostic assessment
- (Not) Leaving the door ajar for pseudoscience
- Public health wins we can draw inspiration from

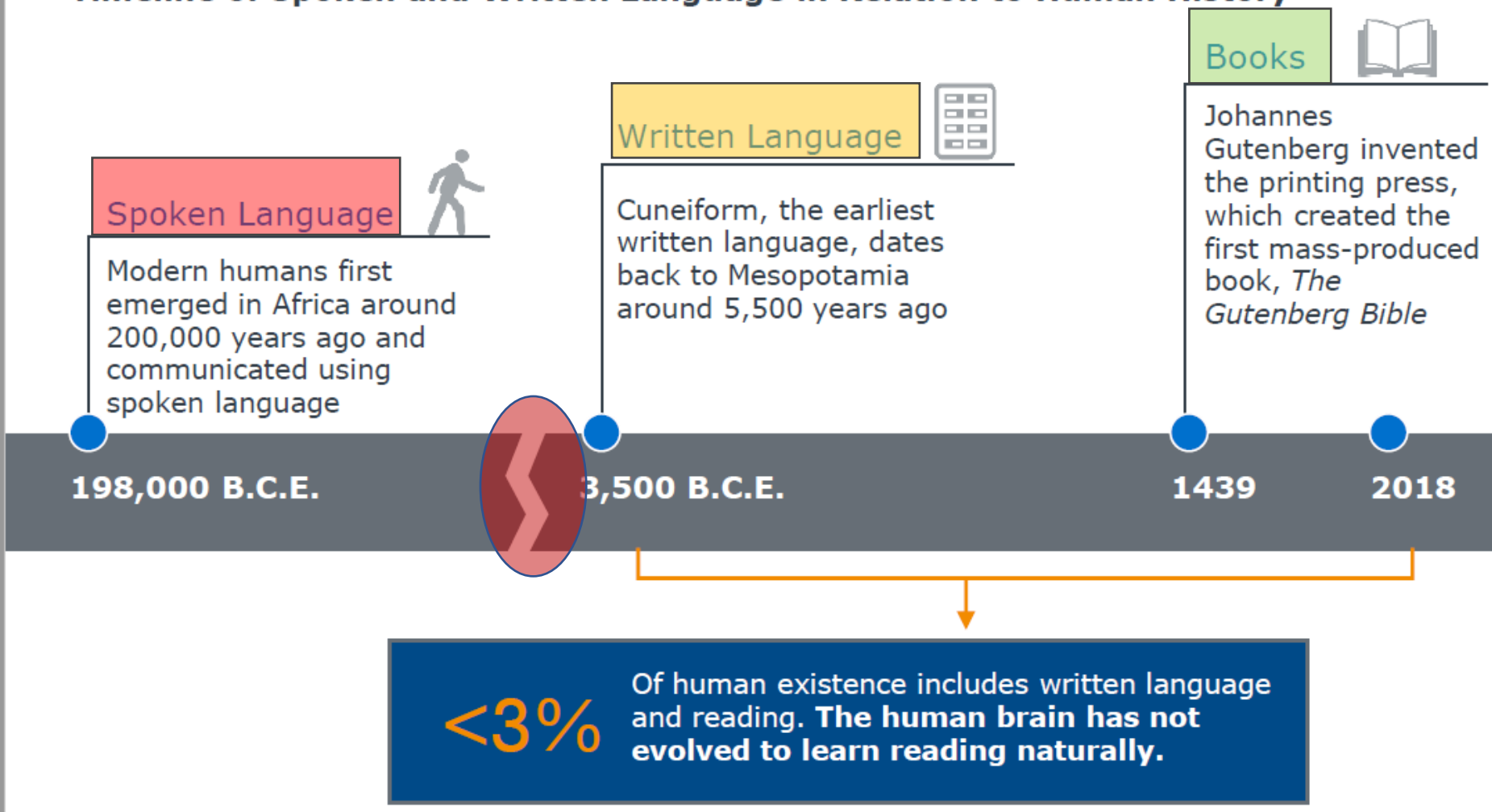
Reading is key to evidence-based school improvement because…

- ✓Reading is the means by which students **access the academic curriculum.**
- ✓How reading is taught is a **barometer of how learning is conceptualised** in a school.
- ✓Reading is closely **related to writing** (transcription and text generation). Written expression is central to academic success.
- ✓When teachers understand the scientific basis of reading instruction, they typically have a stronger grasp of the **science of learning** more widely.
- ✓Getting reading right, from the outset, **reduces the likelihood of instructional casualties** and need for expensive, often ineffective interventions.

Human Brains Are Not Naturally Wired to Read

Reading and Writing Are Relatively Recent in the Span of Human Existence

Timeline of Spoken and Written Language in Relation to Human History



Source: Ritchter, D, et al. (2017) "The Age of Hominin Fossils from Jebel Irhoud, Morocco and the Early Stone Ages"; Spar, I. (2004) "Histories of Writing," The Metropolitan Museum of Art; EAB interviews and analysis.

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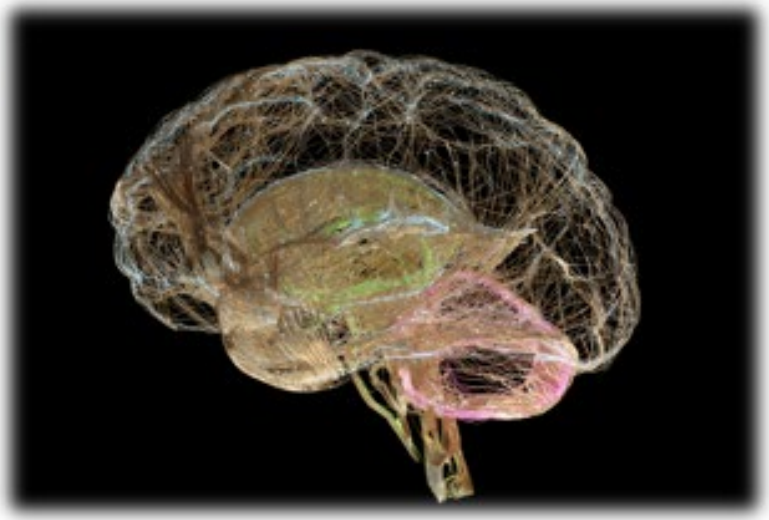

Image sources: MS PPT

The distinction b/w reading and literacy

Reading

A cognitive-linguistic skill

Studied and valued by cognitive psychologists.

Cognitive psychology / neuroscience frameworks. Analysis of (micro) subskills.

An individual accomplishment.

Literacy

A social construct

Studied and valued by education academics.

Sociological frameworks. Focus on (macro) meaning

A social activity

The distinction b/w reading and literacy

Reading

A cognitive-linguistic skill

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An individual accomplishment.

A verb

Literacy

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Sociological frameworks. Focus on (macro) meaning

A social activity

A noun

What is literacy?

In the Australian Curriculum,

… students become literate as they develop the knowledge, skills and dispositions to interpret and use language confidently for learning and communicating in and out of school and for participating effectively in society. Literacy involves students listening to, reading, viewing, speaking, writing and creating oral, print, visual and digital texts, and using and modifying language for different purposes in a range of contexts …

- A number of very different, and apparently equally weighted skills.
- Biologically primary and secondary skills are not differentiated.

(ACARA: https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/what-is-literacy/)

Putting adjectives in front of the word “literacy” is not an acceptable substitute for teaching children how to read.

Image source: https://thestudenthelpline.com.au

Source:
https://koala.sh/images

Adolescence: A risk and protective factor framework for mental health and wellbeing

RISK FACTORS

- Academic under-achievement
- Coercive parenting
- Sensation-seeking personality
- History of conduct disturbance
- Lack of connectedness
- Substance-abusing peers
- Emotion-focused coping

PROTECTIVE FACTORS

- Academic success
- Positive parental support
- Strong self-esteem
- Resilience
- Strong sense of connectedness
- Non-substance-abusing peers
- Problem-focused coping

Talking about MTSS means talking about public health principles

Public health means population-level thinking about….

- Responding to a pandemic
- Good air and water quality
- Housing conditions
- Food security
- Hygiene
- Environmental health
- Personal safety
- Life-style related illness
- Alcohol, tobacco & other drugs
- Road safety
- Vaccination programs
- Cancer screening programs
- Life expectancy
- **Literacy?**

Image source: https://wihhs.com

What does public health thinking have to do with reading instruction?

Image source: MS PPT

What does poor reading ability mean as a life-span issue?

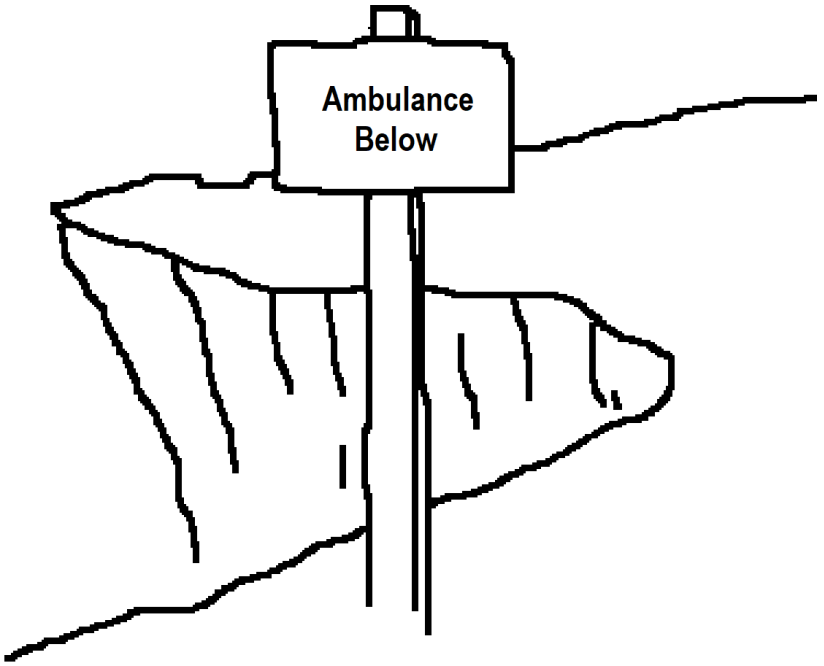
Correlates

- Low educational attainment
- Mental health difficulties: internalising and externalising; substance misuse / abuse
- Un/under-employment
- Unstable housing
- Intergenerational transmission of low reading / low self-efficacy for academic learning
- Exposure to violence – domestic and community
- Contact with the criminal justice system
- Reduced life-expectancy

Image source: MS PPT

Public health is about

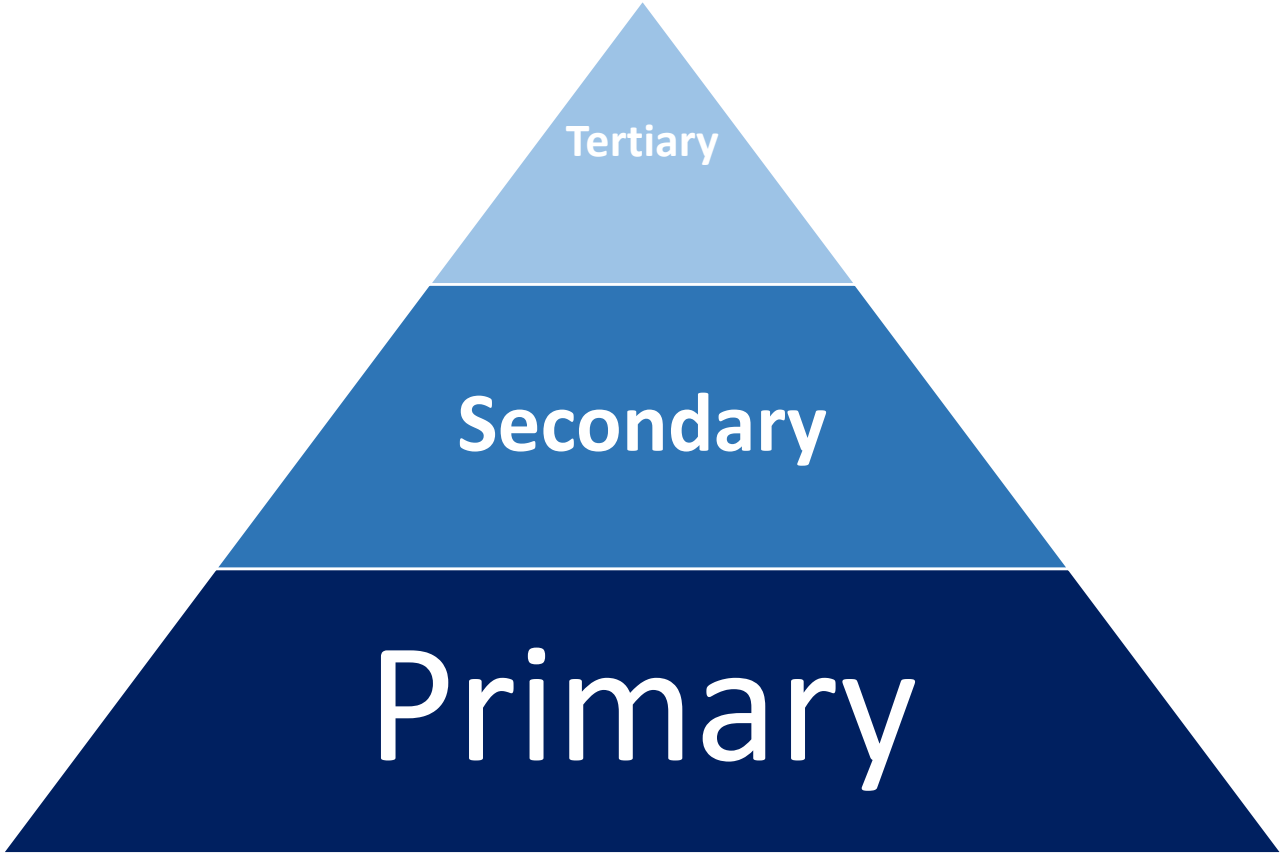
- ✓**Fences at the top of the cliff, rather than ambulances at the base.**
- ✓Equitable access to resources and opportunities
- ✓Social determinants of health and wellbeing
- ✓Prevention rather than intervention
- ✓Changing life trajectories
- ✓Health economics and cost effectiveness



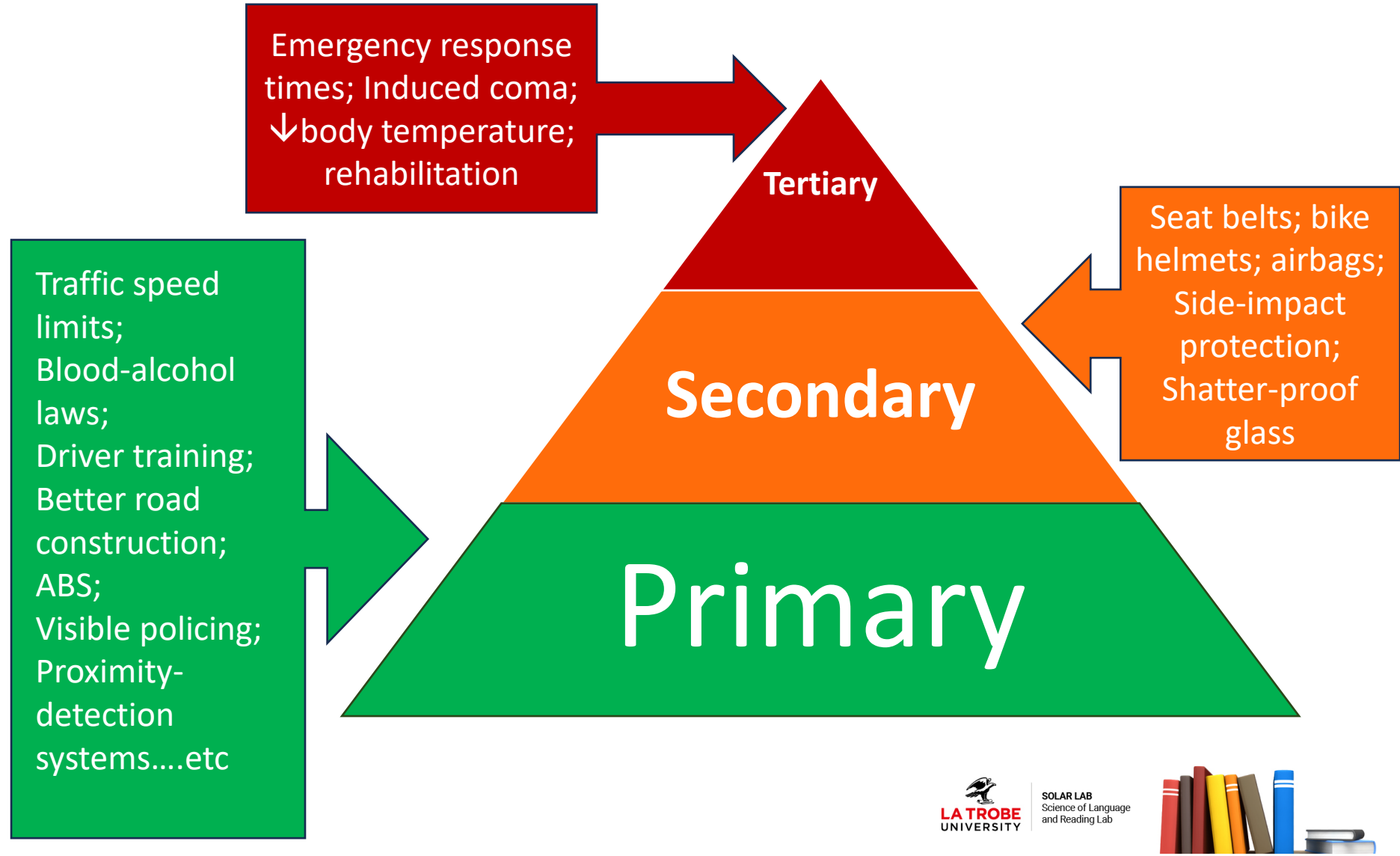
How can public health principles assist in reading instruction?

- Population-level thinking – looking first for **similarities** rather than differences in need
- Examination of **practice-based evidence**
- **Bottom-up** planning and decision-making / policy
- Use of **theory-aligned and evidence-based** approaches
- Awareness of **ideological biases**
- **Low variance** implementation
- Effective use of **data**
- **Transparency and accountability**
- Forming **connections** between sectors
- Using **Response to Intervention**

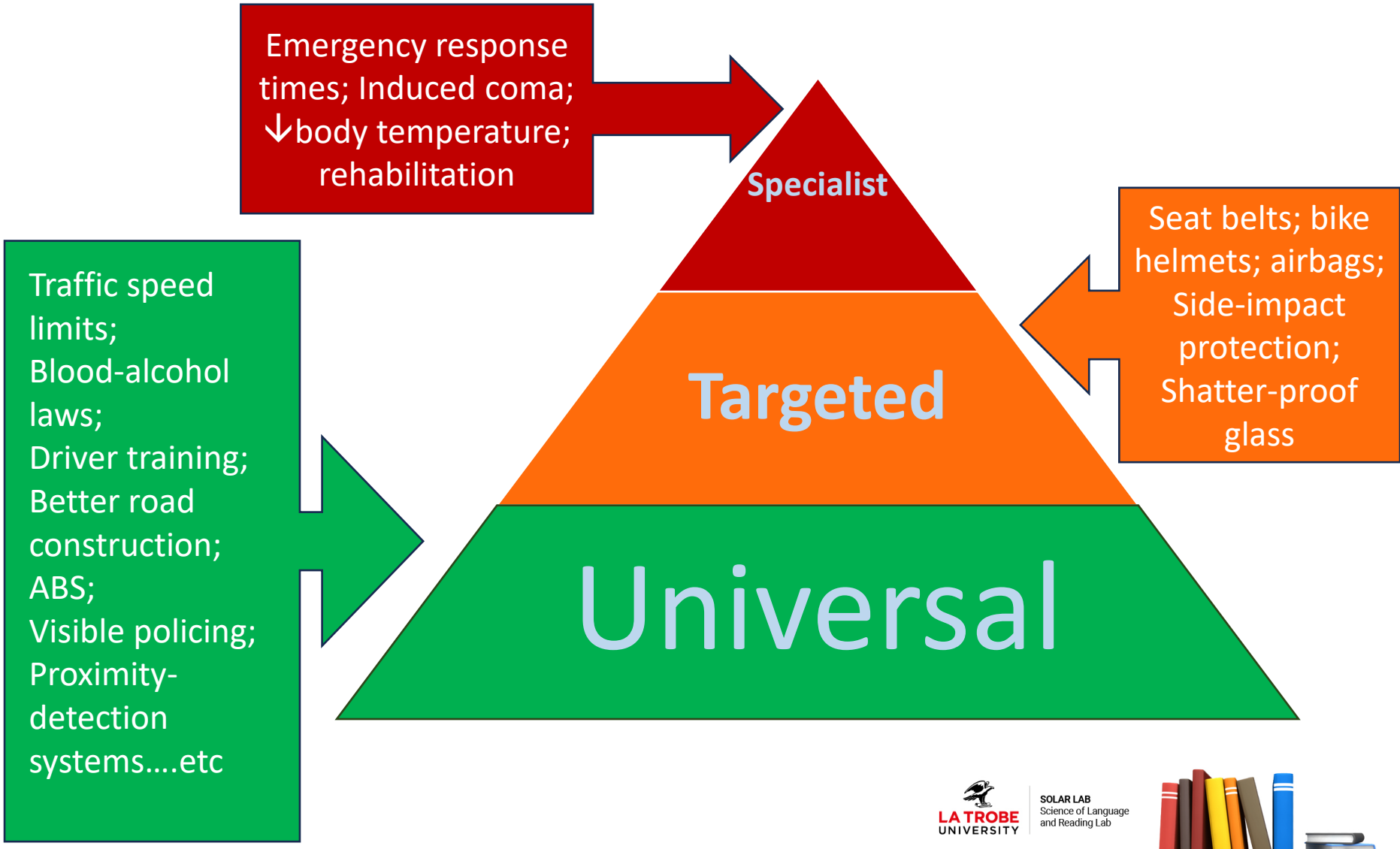
Public health: primary, secondary and tertiary* prevention *levels of prevention, not education sectors



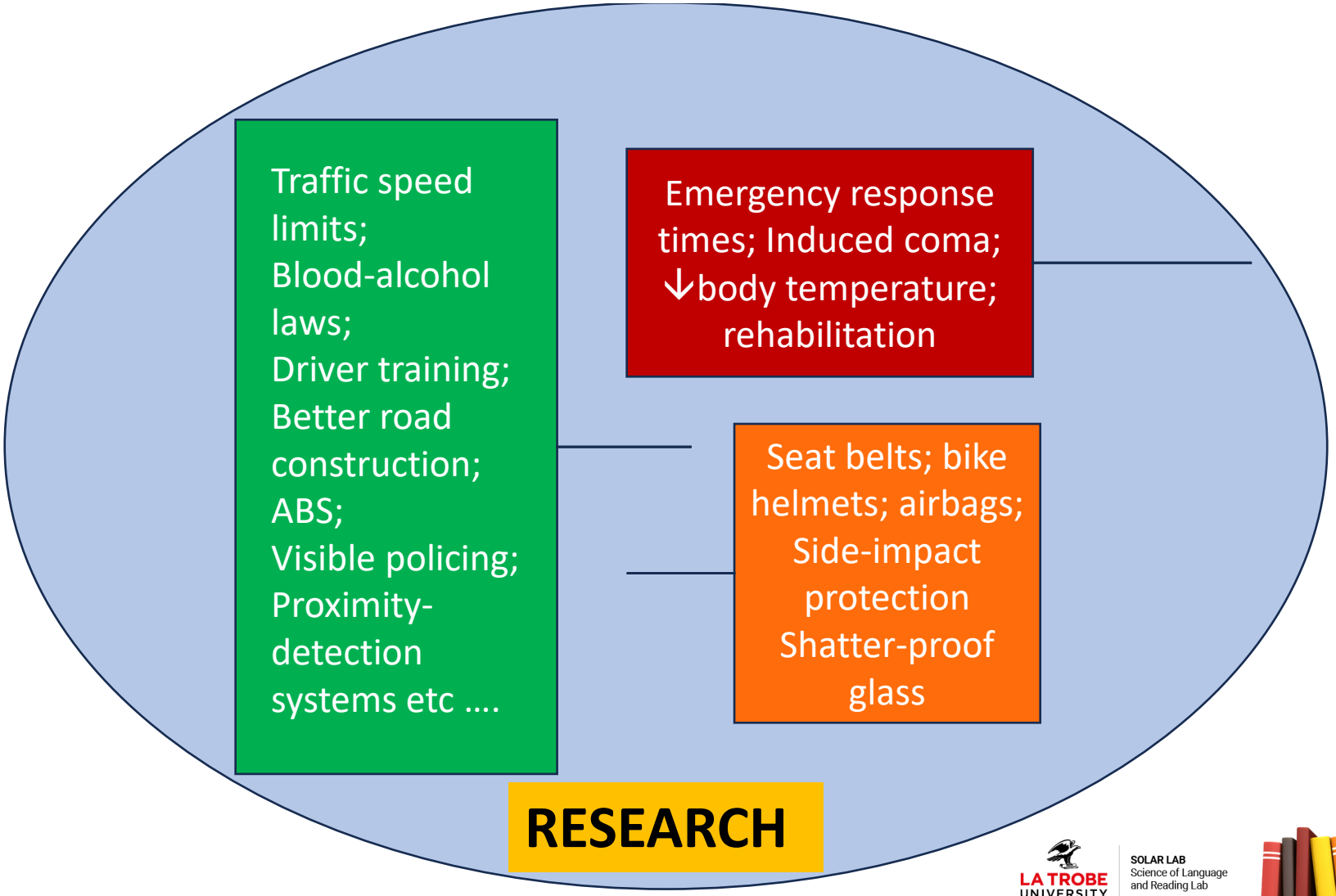
Public health: primary, secondary and tertiary* prevention: A road safety worked example



OR: universal, targeted and specialist prevention: A road safetyworked example



Public health: primary, secondary and tertiary* prevention: A road safety worked example



Road safety: key assumptions

- ✓ **Everyone** can be safe on the road
- ✓ Safety is strongly influenced by the **quality** of the infrastructure and the **behaviour** of the users.
- ✓ User safety is **monitored** using high-quality tools and processes
- ✓ Adjustments are made in response to **data** and as robust **new evidence** emerges
- ✓ The bulk of the resources are directed at **prevention**
- ✓ There are **accountability mechanisms** in place when implementation is poor

How have we done?

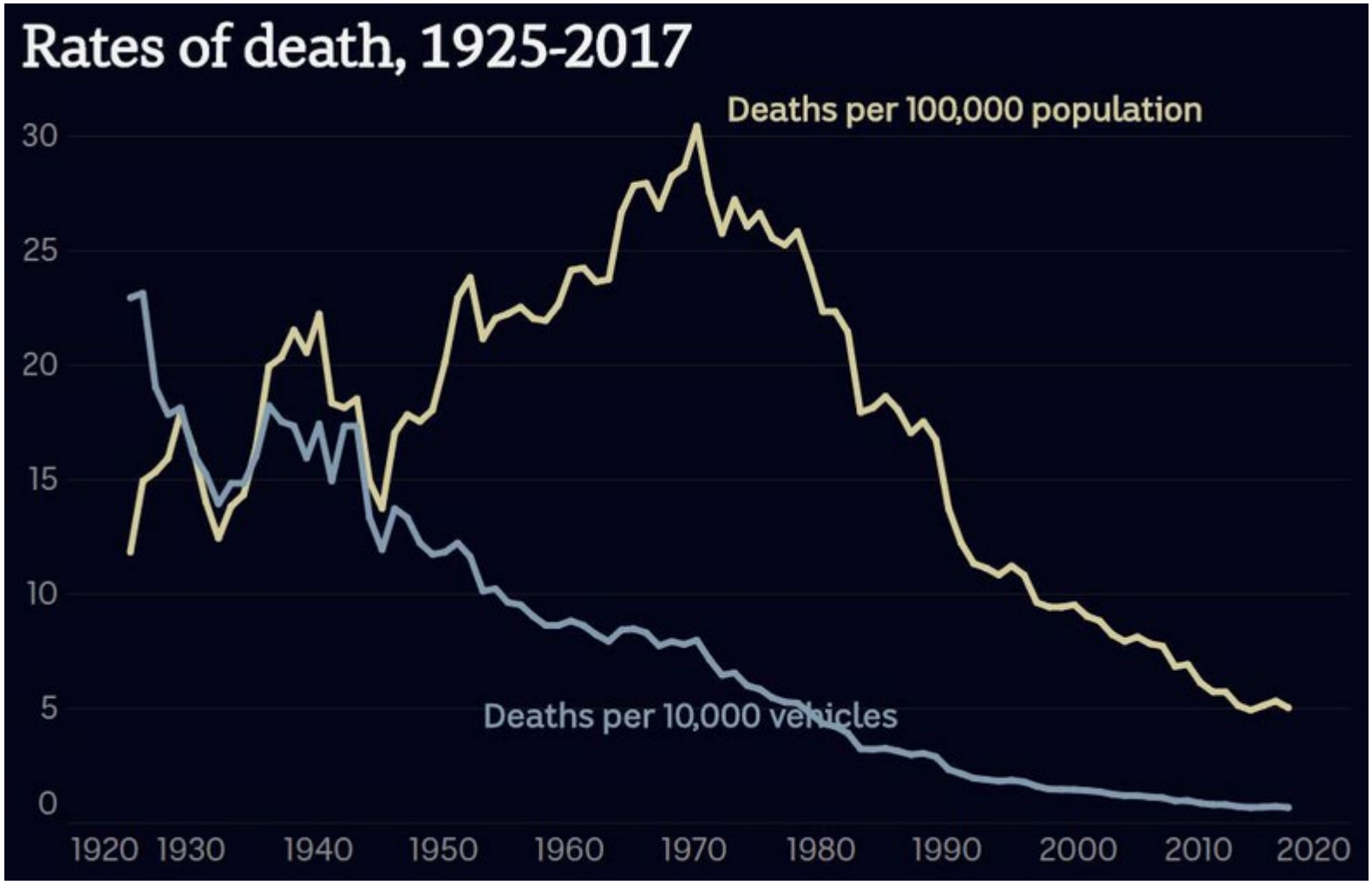
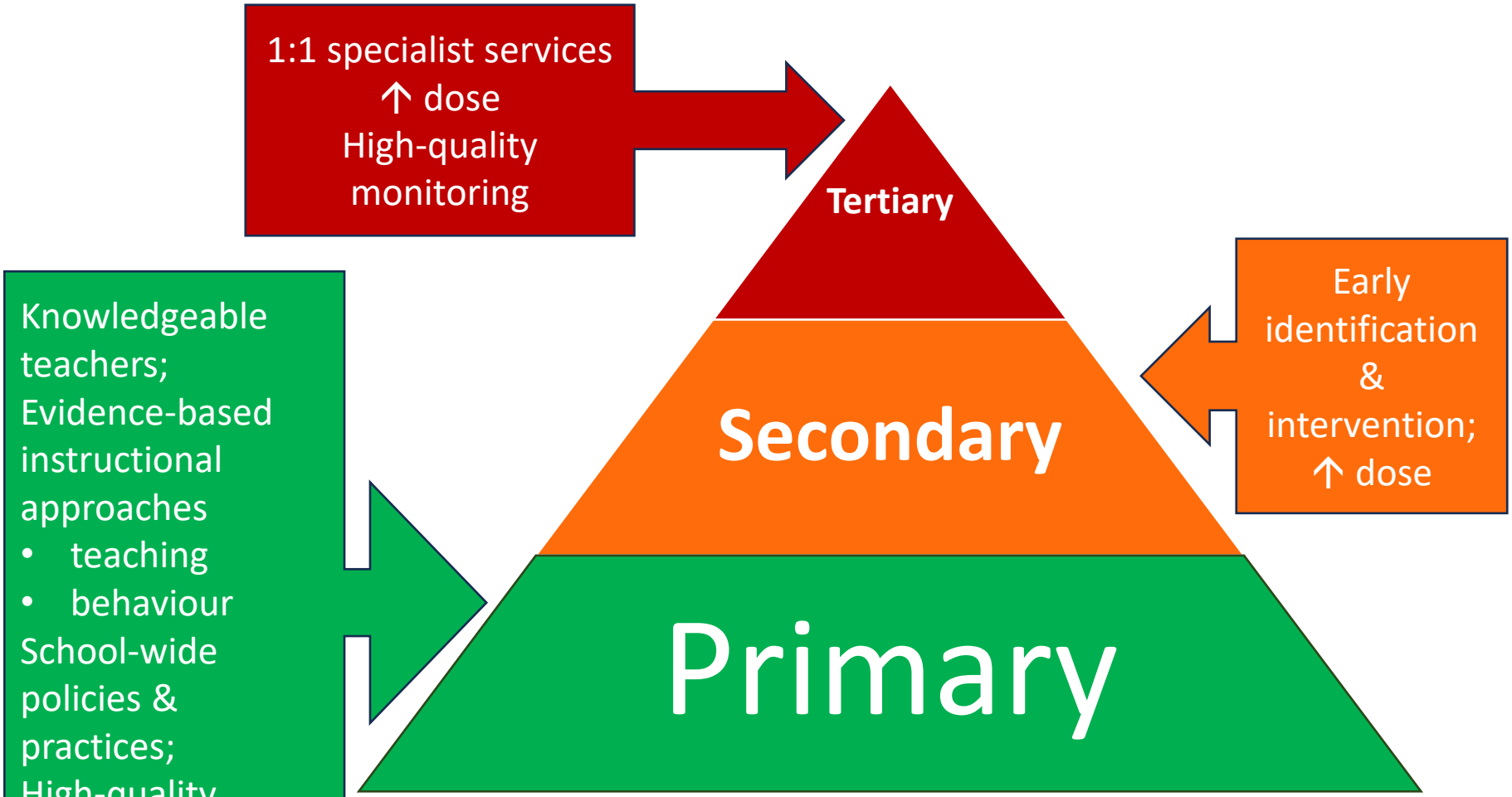


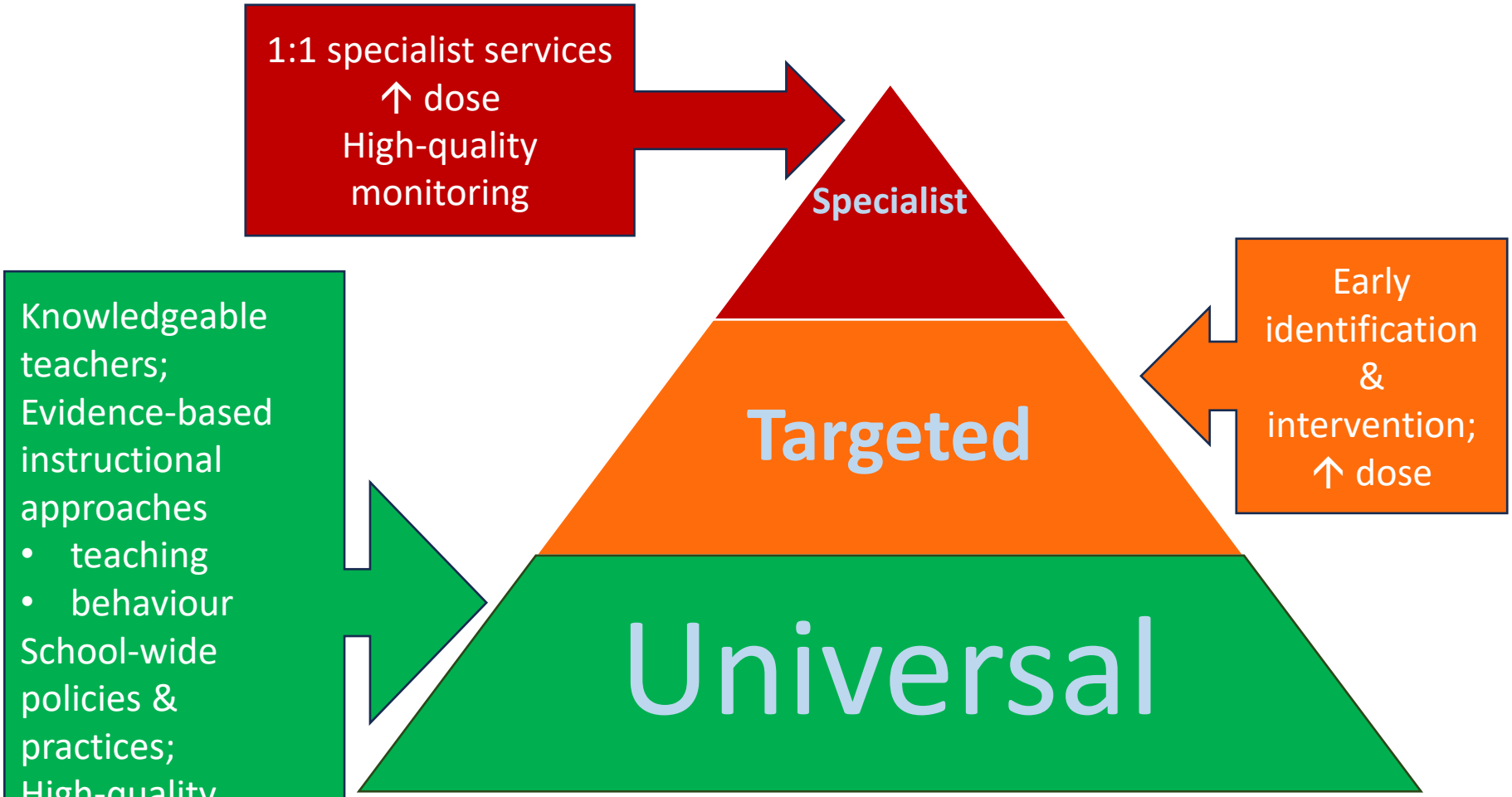
Image source: https://www.abc.net.au/news

Public health: primary, secondary and tertiary* prevention An education worked example



OR: universal, targeted and specialist prevention

An education worked example



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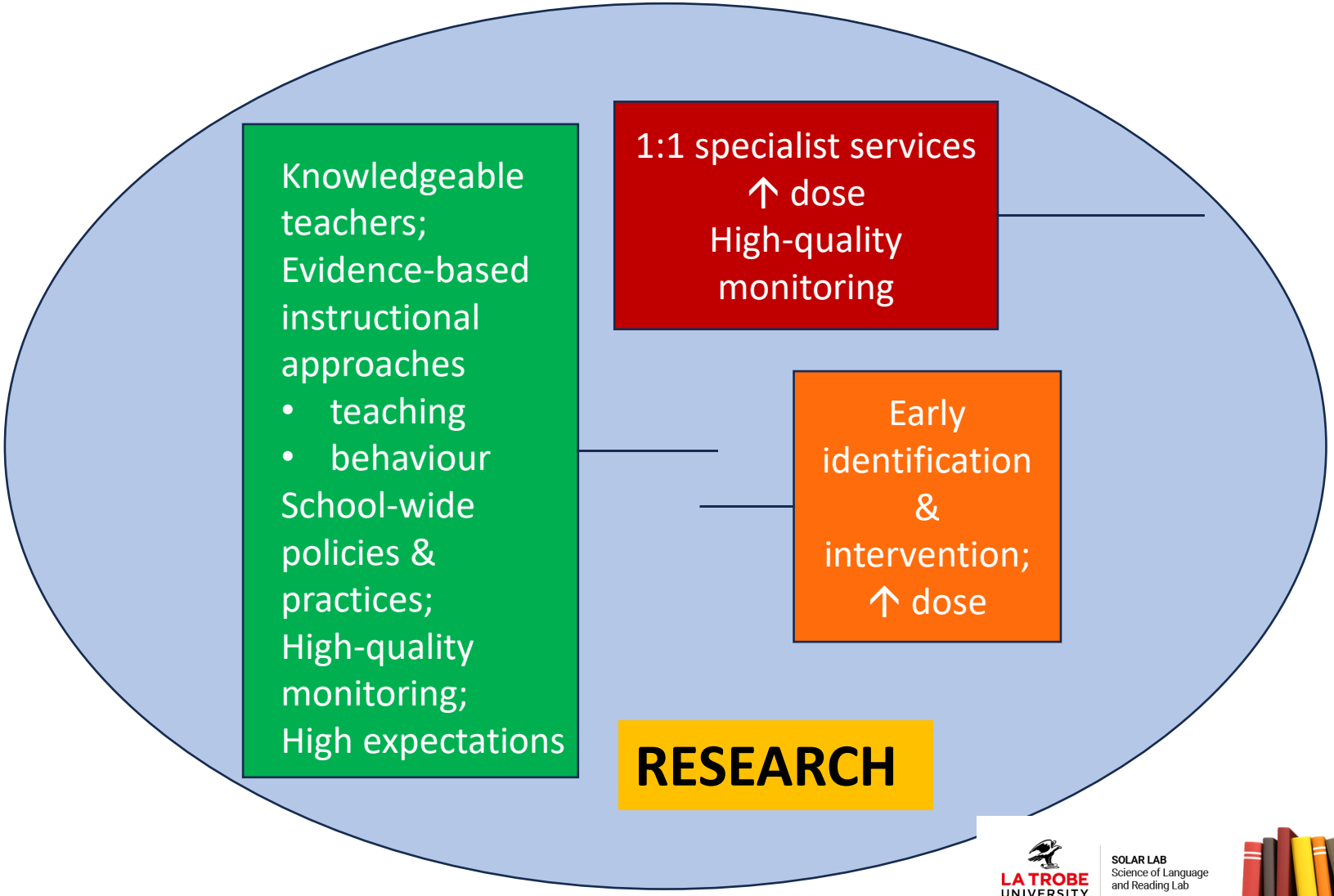
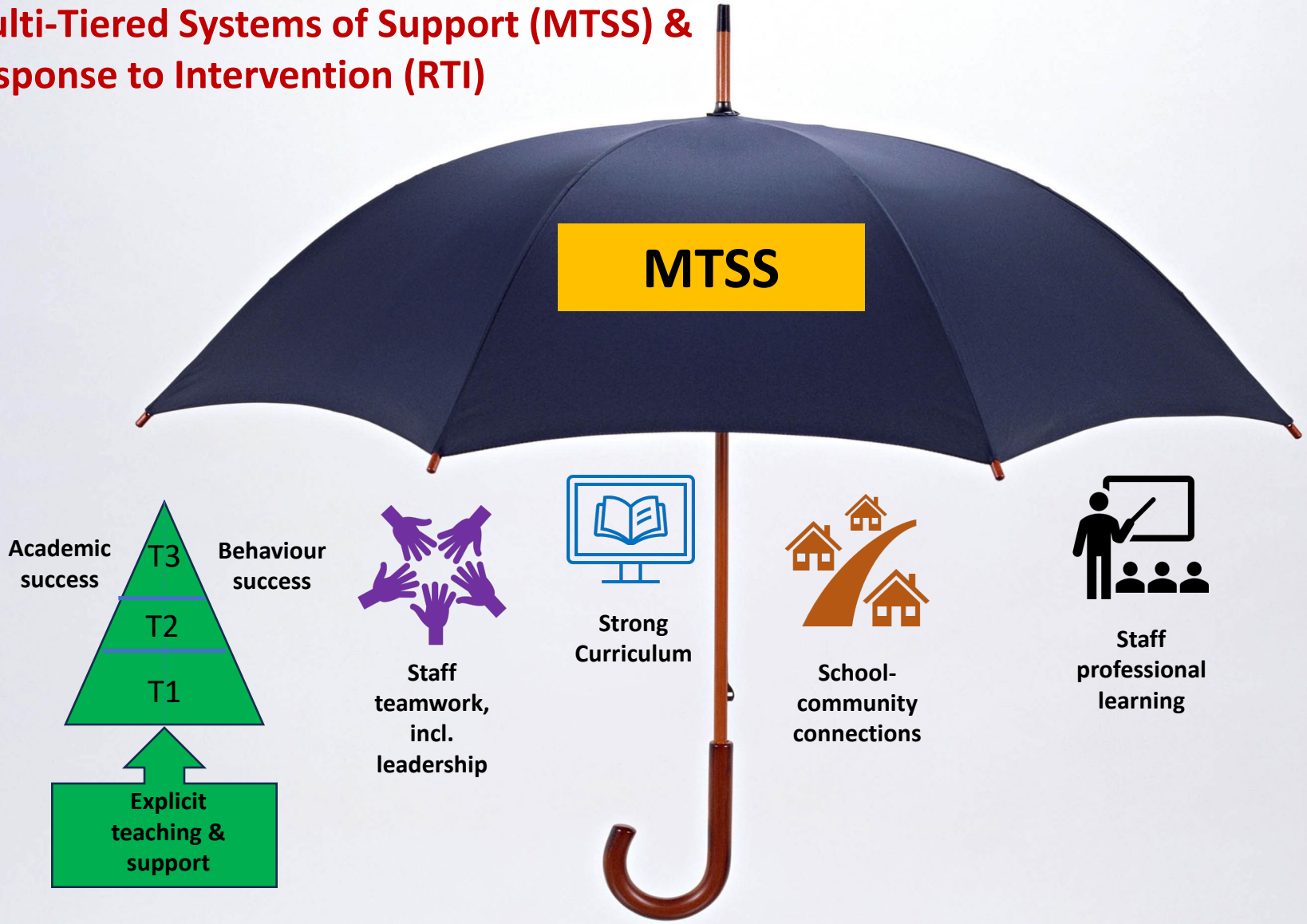


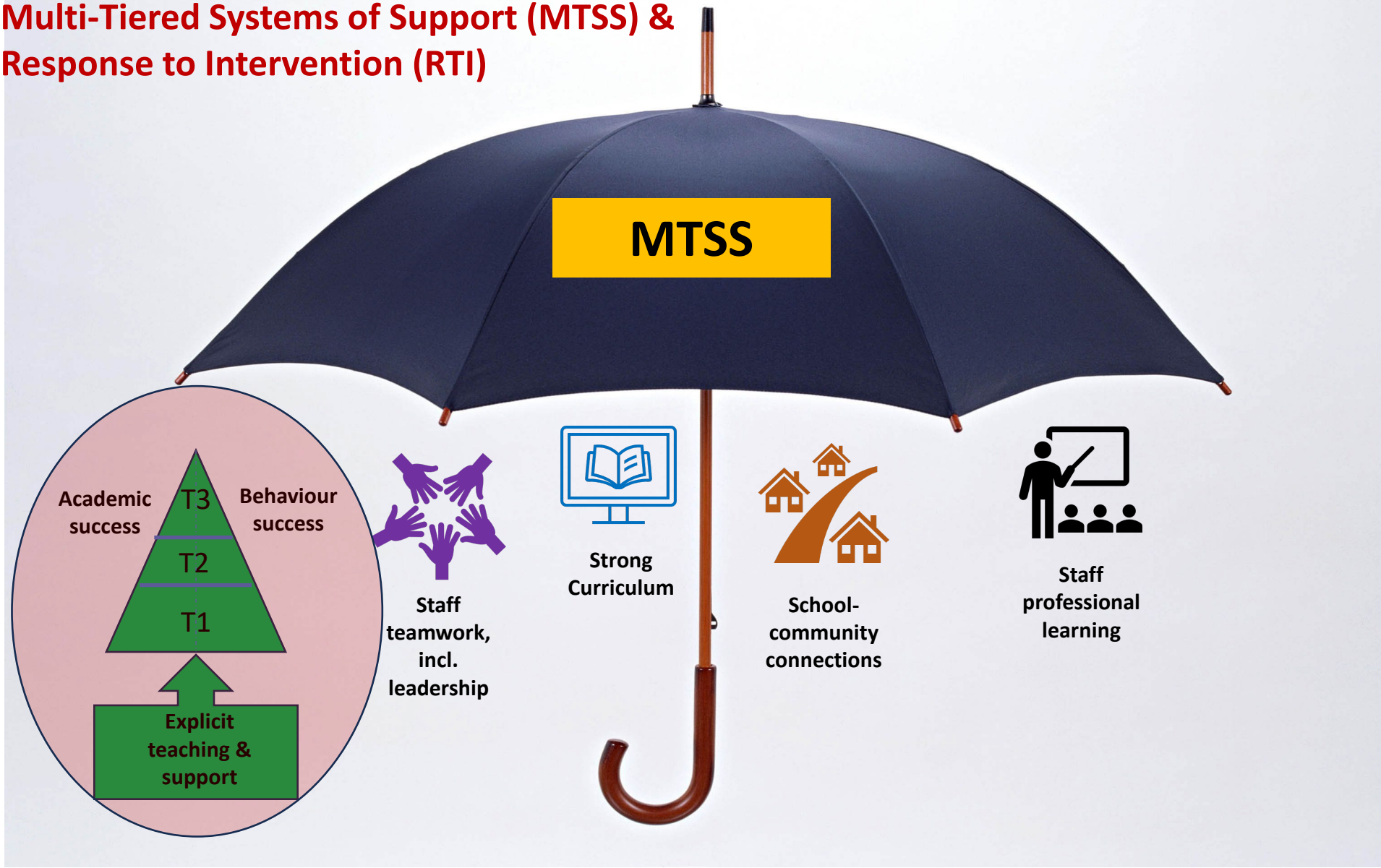
How have we done?

Multi-Tiered Systems of Support (MTSS) & Response to Intervention (RTI)



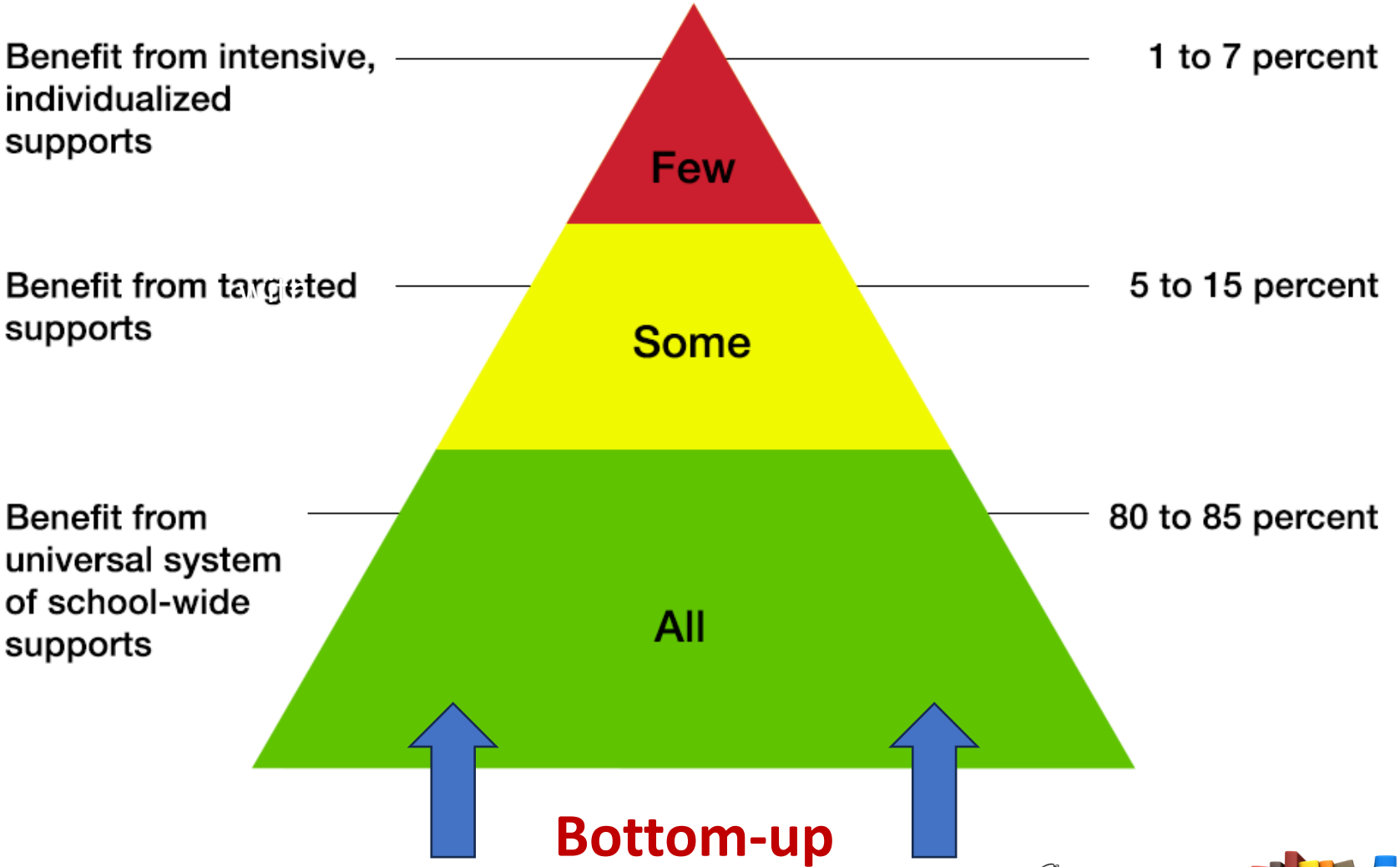
Images source: MS PPT

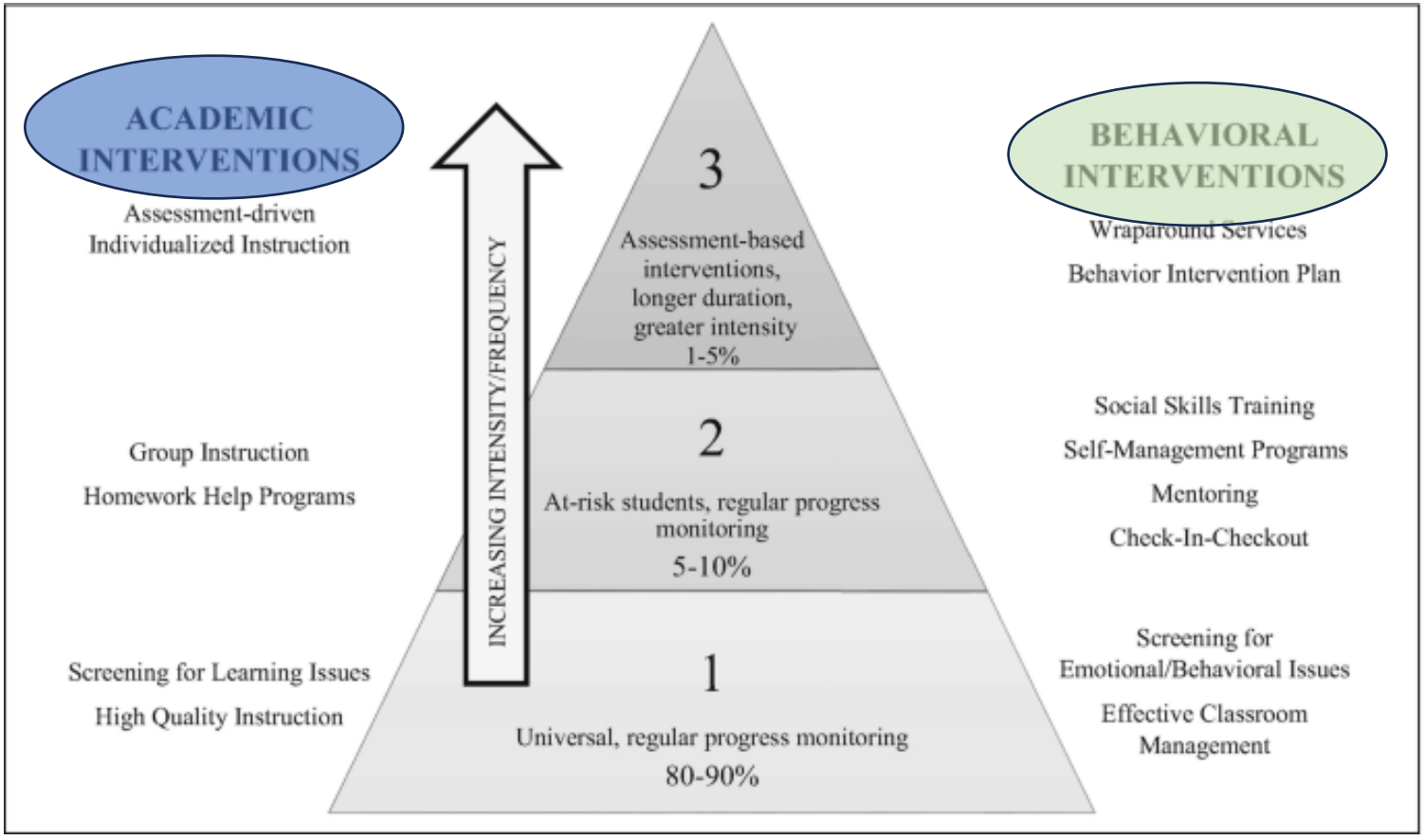
Multi-Tiered Systems of Support (MTSS) & Response to Intervention (RTI)



Images source: MS PPT

Response to Intervention

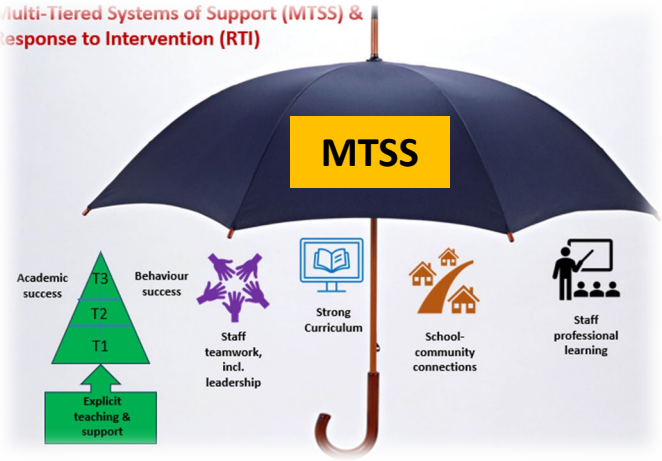




White, B. A. (2022). Planning for Special Education Services: A Primer for Health-Care Professionals. In *Handbook of Treatment Planning for Children with Autism and Other Neurodevelopmental Disorders* (pp. 215-238). Springer International Publishing.

MTSS (1)

- More proactive than RTI alone; RTI is a key element
- Like RTI, has a focus on <u>all</u> students
- Emphasises that **all students are "Tier 1 students first"**
  - All (T1); some (T2); few (T3)
- Reliant on evidence-based / evidence-informed approaches

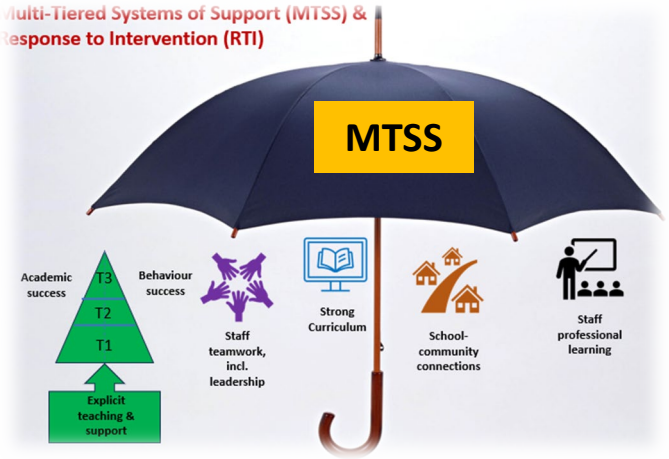


➢ **Must include:**

- **Professional learning** / coaching
- Strong **curriculum design and delivery**
- **Universal screening**, progress monitoring and diagnostics to inform decision-making at RTI tiers
- School-community **collaboration**
- **Teamwork**: teachers; leaders; allied health professionals; parents; students

MTSS (2)

- Positive and proactive **behaviour support**
- **Leadership** investment and support
- Belief that **all children can learn to read**
- **High expectations** of and for all children
- Understanding that learning is a **reflection of teaching**
- Has a **systemic** rather than a single classroom focus
- Strong emphasis on **relationship** between academic achievement and behavioural self-regulation



MTSS in action: an Australian example

Sunday, 28 September 2025

Green lights at Blue Haven: A primary principal's story of school transformation

Image source: MS PPT

Much has been written and debated about ***evidence-based practice*** *in education in the last decade or so, particularly as this pertains to reading instruction. It is pleasing that we are now shifting our lens to* ***practice-based evidence*** *- accounts of major transformation as a result of a school leader's re-orientation of pedagogy in a school. Regular readers will recall Sue Knight's immensely popular 2021 Snow Report guest post about how leaders can motivate, drive, and sustain change.*

In this post, we hear from ***Paul McDermott****, who has been a Primary School Principal for 25 years and a teacher for 33 years. He has worked across sectors and has been recognised for leading significant school improvement in multiple settings. He is currently a Chief Education Officer with the School Excellence team in the New South Wales Department of Education and a Director on the Board of Ochre Education.*

Paul was most recently the Principal at Blue Haven Public School which was the ***Australian Government Primary School of the Year in 2019****. Paul was also awarded* ***Government Primary School Principal of the year in 2019****.*

Paul is passionate about school improvement and collaboration and currently supports a number of schools across New South Wales. He shares the Blue Haven transformation story below.

Image source: Paul McDermott

Home | About me | Selected academic articles: 2000 to present time | Selected books / book chapters | Bendigo Early Language and Literacy Community of Practice Homepage

https://pamelasnow.blogspot.com/2025/09/green-lights-at-blue-haven-primary.html

RTI: key assumptions and principles

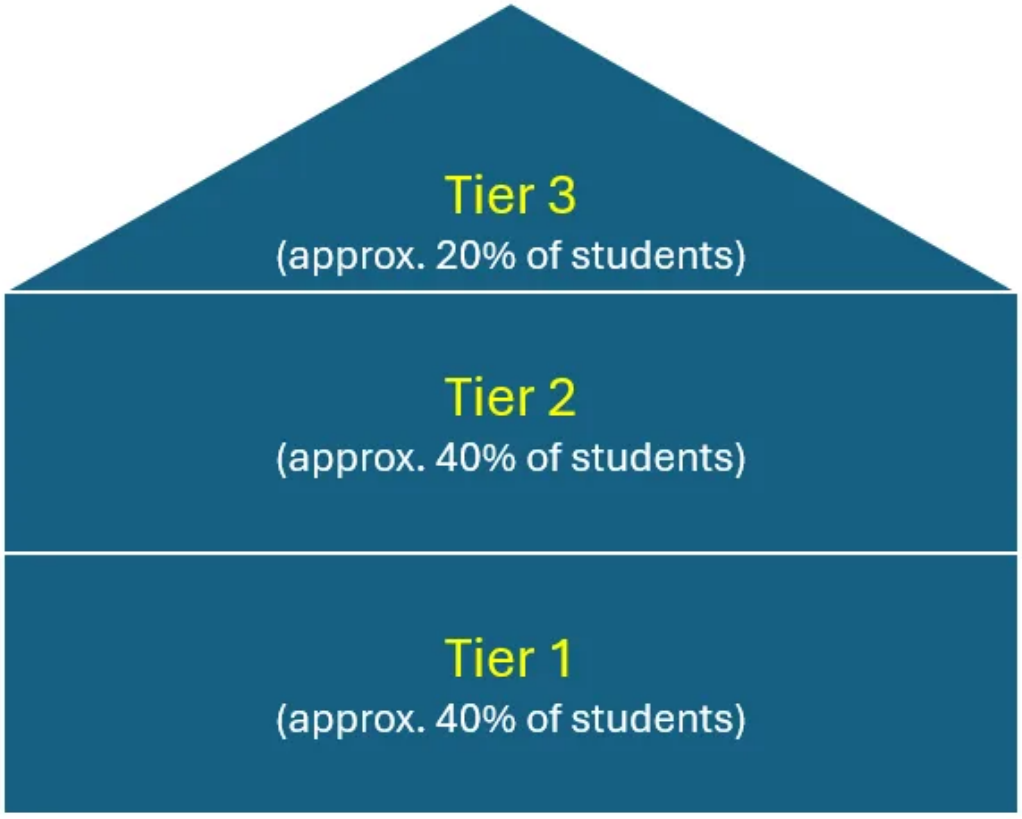
- ✓ **All children can learn**
- ✓ Learning is strongly influenced by the **quality of the instruction** students receive
- ✓ All students are exposed to **evidence-based** instruction
- ✓ Student **progress is monitored** via the use of valid screening, diagnostic, and/or curriculum-based measures
- ✓ Tier 1 is characterised by **high-quality explicit instruction**
- ✓ Tiers refer to **levels of support**, not students
- ✓ **Instruction** is monitored, reviewed, and revised
- Accountability for outcomes sits with teachers / teaching – it is a **quality assurance mechanism**

RTI means *use your best china every day*

It’s not RTI if:

- ☒ Tier 1 is not based on evidence-based, explicit teaching
- ☒ More than 15-20% of students are struggling in Tier 1
- ☒ Effective progress monitoring is not used
- ☒ Data does not translate into actions
- ☒ Different pedagogies are employed at Tiers 2 and 3
- ☒ We don’t believe all children can learn – notwithstanding obvious greater challenges for some than for others

What happens when Tier 1 is not strong?



The *'RTI House'* – The distribution faced by schools at the beginning of their journey into low-variance, evidence-informed reading and spelling instruction

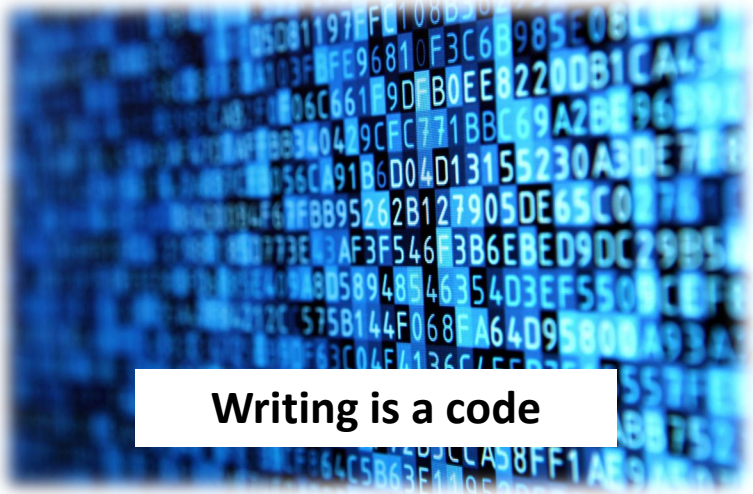
Bill & Christie-Lee Hansberry

https://playberrylaser.com.au/articles/playberry/to-stream-or-not-to-stream-in-structured-reading-and-spelling-lessons/

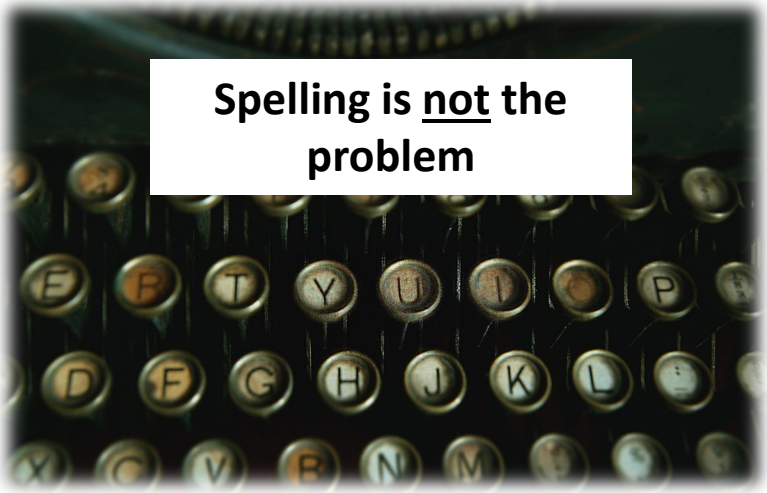
PRACTITIONER EXPERTISE:

TEACHER* KNOWLEDGE REQUIREMENTS OF HIGH-QUALITY TIER 1 READING INSTRUCTION

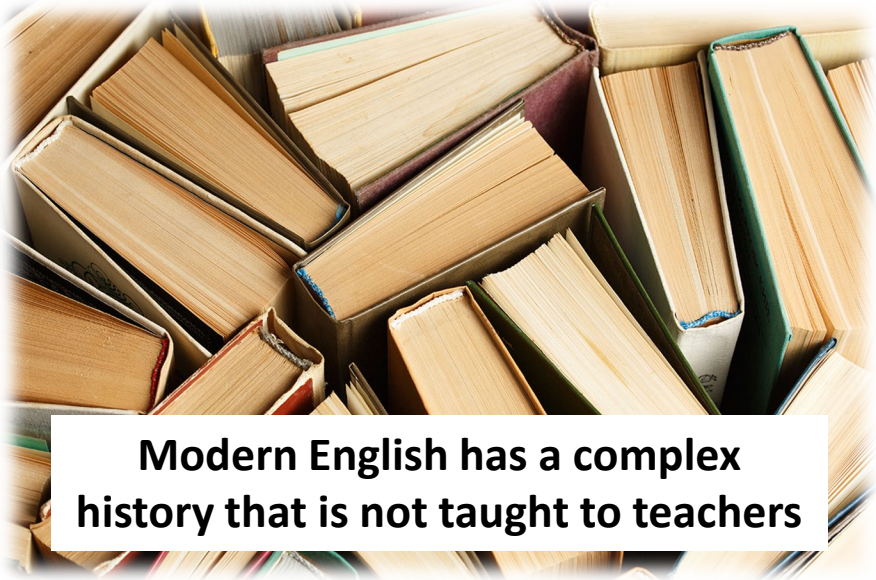
*Beneficial for other professions too



Writing is a code

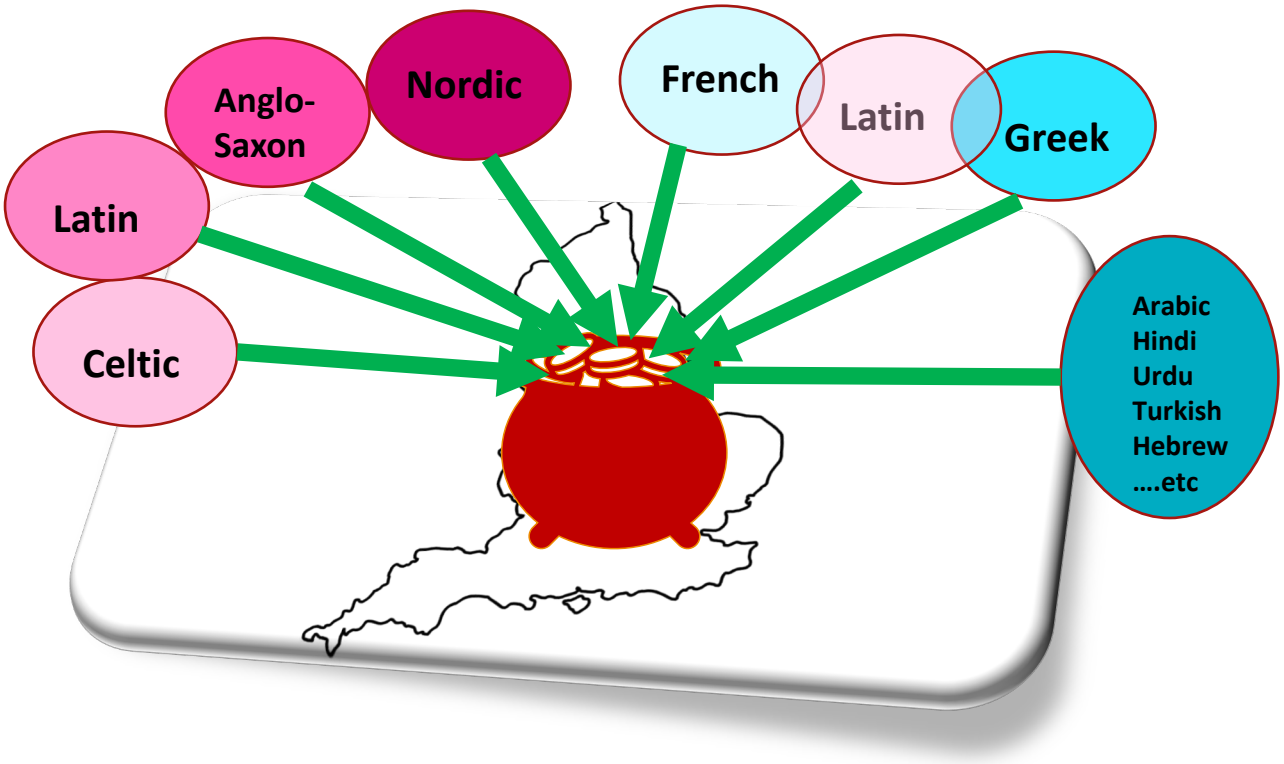


Spelling is <u>not</u> the problem



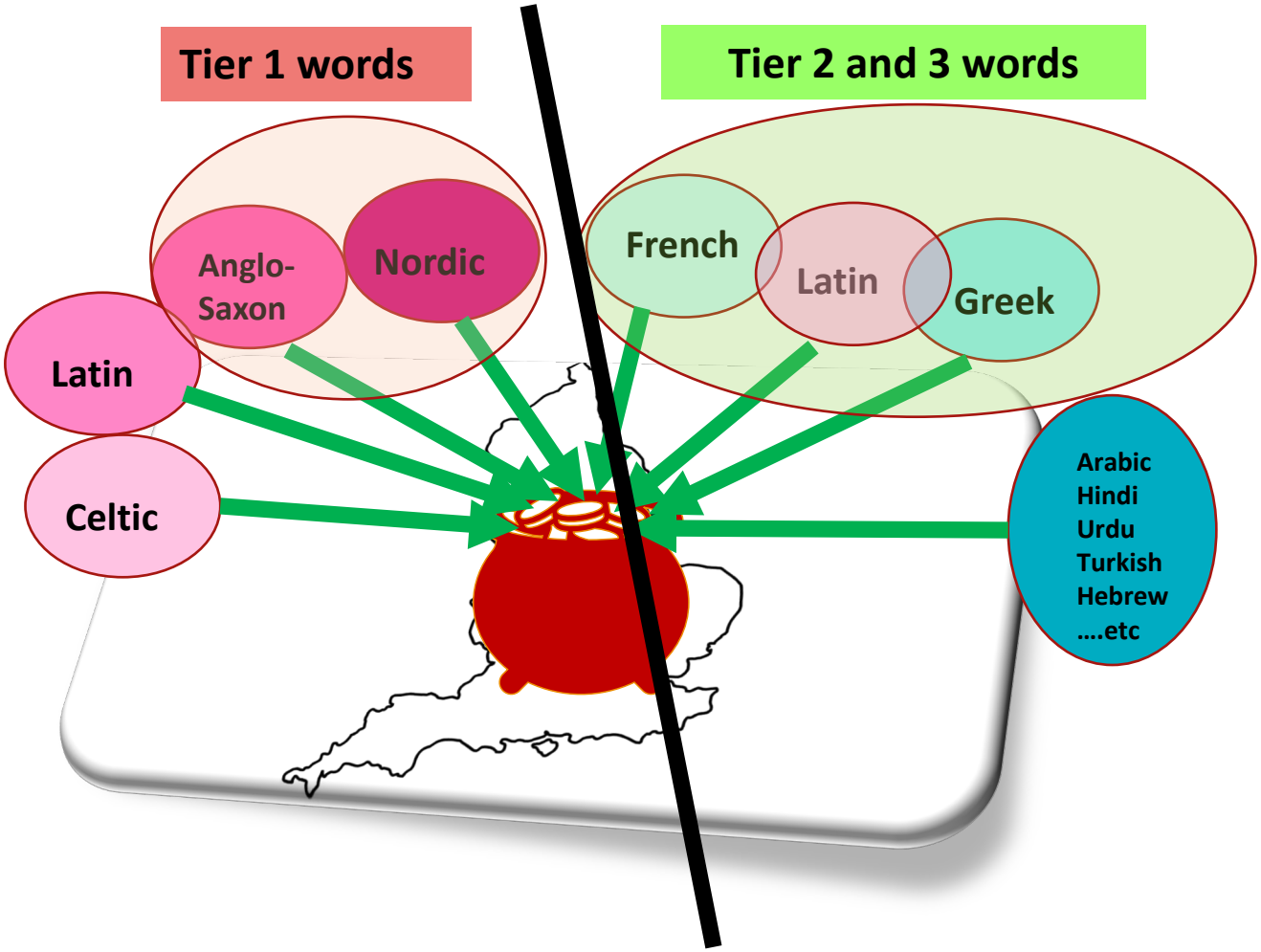
Modern English has a complex history that is not taught to teachers

All students must learn to decode



The “lexical bar”

Corson, D. (1997). The learning and use of academic English words. *Language Learning*, *47*(4), 671-718.



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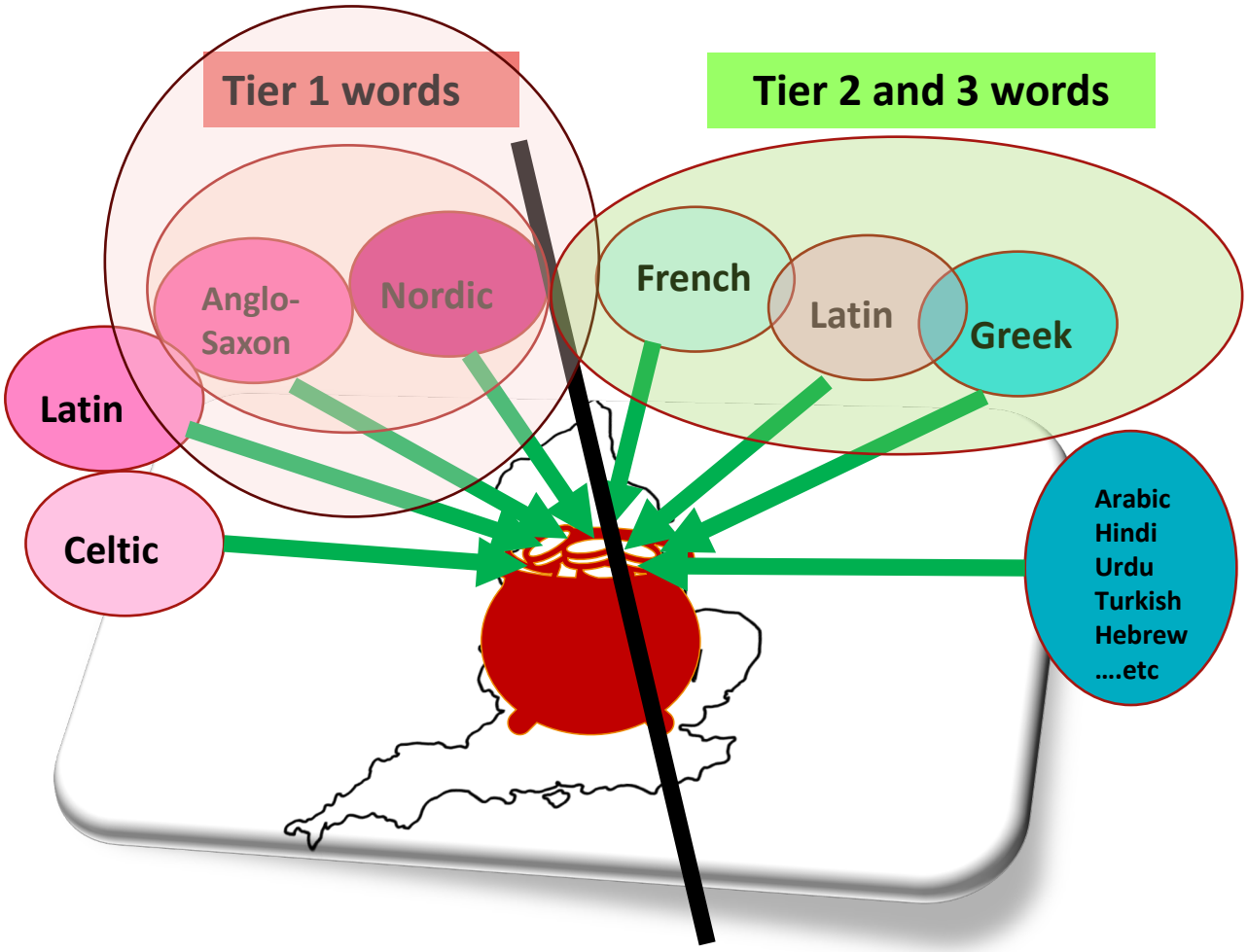
Life's Starter Pack



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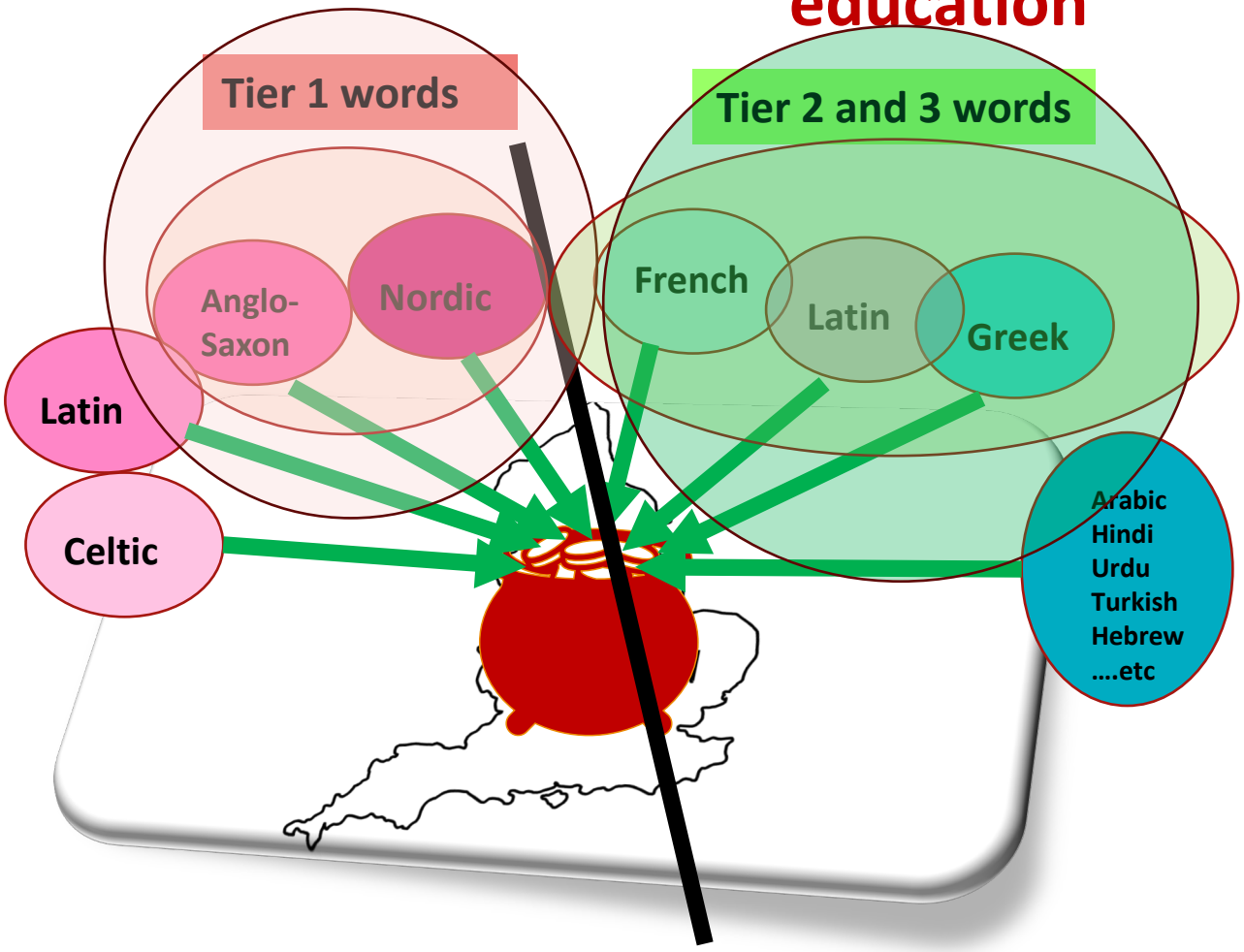
Life's Starter Pack

The value-add of education



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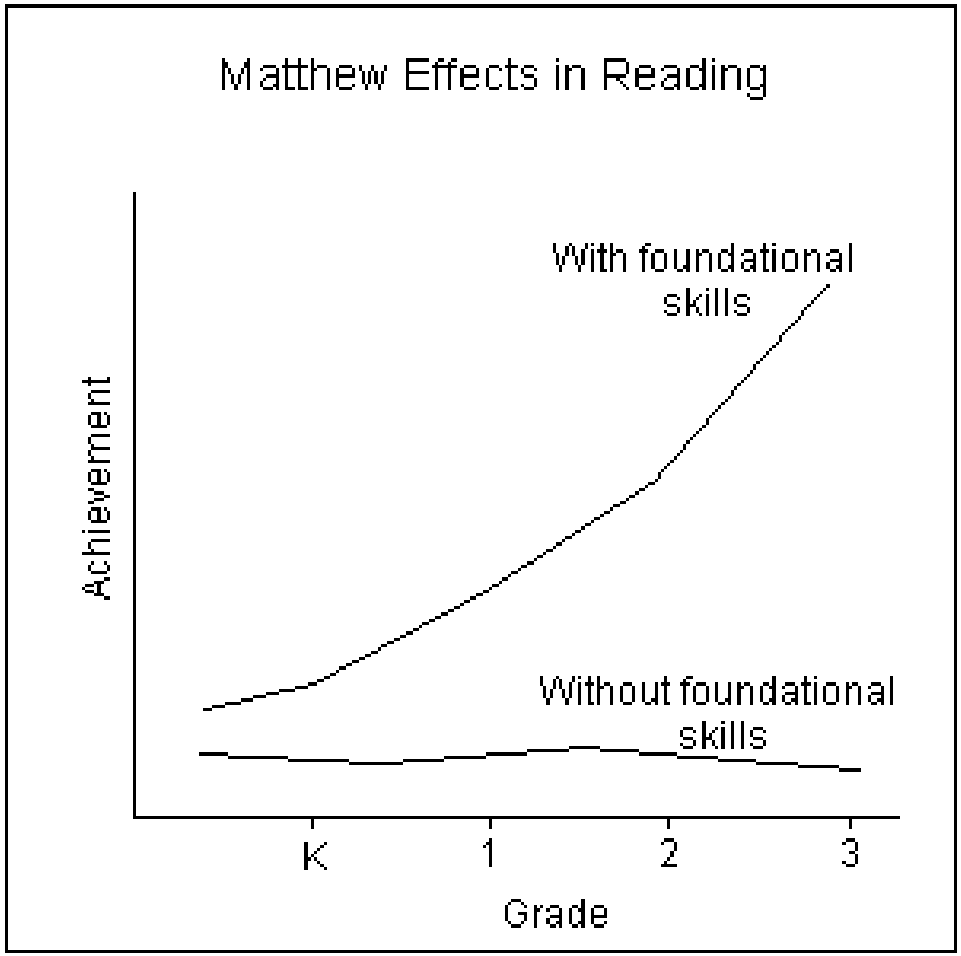
The “Matthew Effect” in *learning* to read



Stanovich (1986)

The “Peter Effect” in *teaching* reading

Applegate, A. J., & Applegate, M. D. (2004). The Peter effect: Reading habits and attitudes of preservice teachers. *The reading teacher*, *57*(6), 554-563.

Ann. of Dyslexia
DOI 10.1007/s11881-015-0112-0

Language and reading instruction in early years' classrooms: the knowledge and self-rated ability of Australian teachers

Hannah L. Stark[1,2] • Pamela C. Snow[3] •
Patricia A. Eadie[1] • Sharon R. Goldfeld[2,4,5]

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syllables	tel - e - phone
morphemes	tele-phone

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International Journal of Speech-Language Pathology

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/iasl20

Australian speech-language pathologists' self-rated confidence, knowledge, and skill on constructs essential to practising in literacy with children and adolescents

Caitlin F. Stephenson, Tanya A. Serry & Pamela C. Snow

To cite this article: Caitlin F. Stephenson, Tanya A. Serry & Pamela C. Snow (2023): Australian speech-language pathologists' self-rated confidence, knowledge, and skill on constructs essential to practising in literacy with children and adolescents, International Journal of Speech-Language Pathology, DOI: 10.1080/17549507.2023.2202839

To link to this article: https://doi.org/10.1080/17549507.2023.2202839

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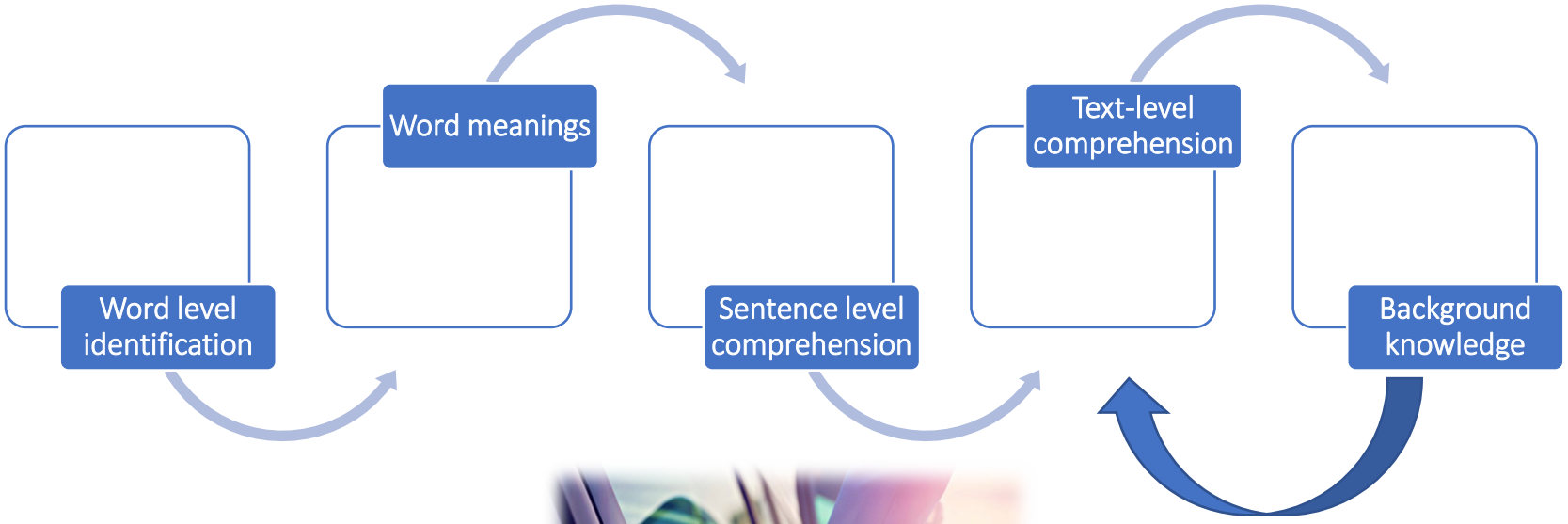
Reading comprehension is a process



Per Hennessey, N.L. (2021). *The reading comprehension blueprint.* Brookes.

SCREENING AND PROGRESS MONITORING IN RTI FRAMEWORKS

Screening: A fundamental public health approach for supporting effective reading instruction

IN PUBLIC HEALTH TERMS, WE SCREEN WHEN:

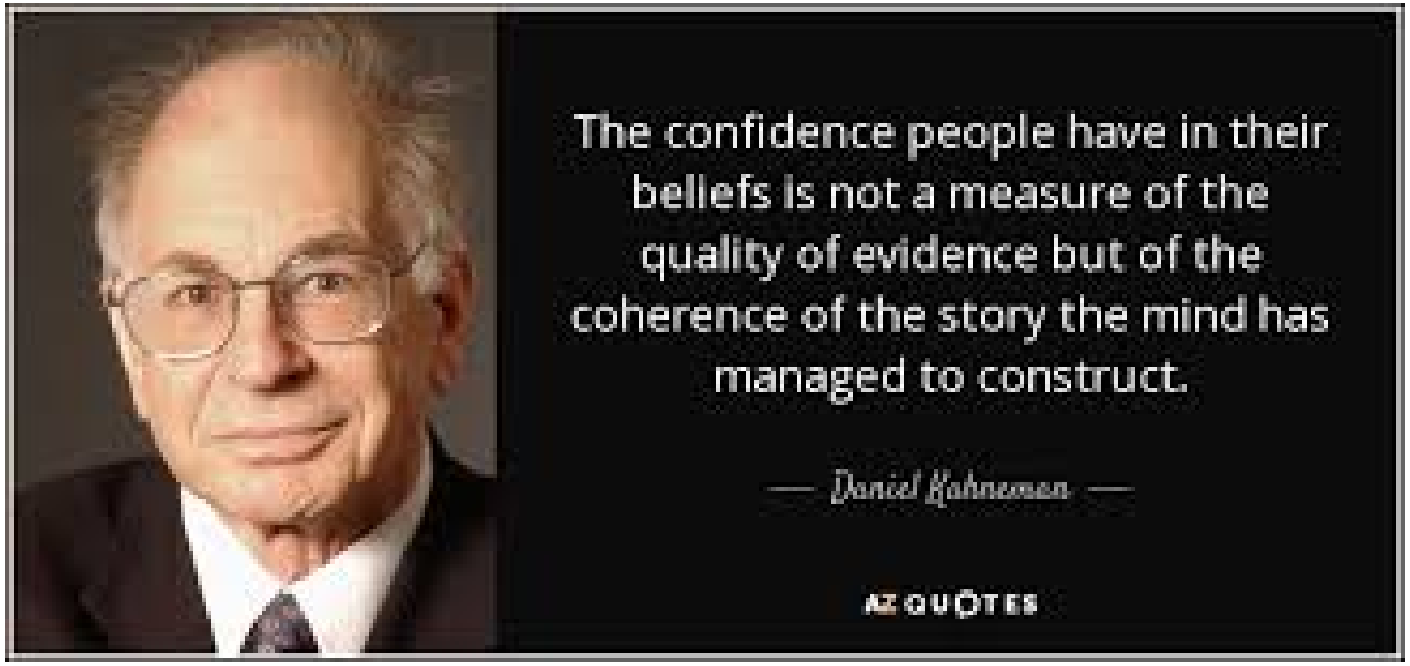
- ✓A problem is important
- ✓It can be detected early
- ✓It might be missed, especially in vulnerable populations
- ✓Early intervention is available
- ✓Early intervention changes outcomes
- ✓Early intervention saves money in the long run
- ✓We can accept a small sensitivity-specificity trade-off
- ✓We have appropriate tools to use

HOW DOES THIS WORK WITH EARLY READING SUCCESS?

- ✓Being a struggling reader is important
- ✓Problems with decoding and/or comprehension can be detected early
- ✓These problems are often missed/misattributed/explained away
- ✓Early intervention SHOULD be available in all schools (e.g. via RTI / MTSS frameworks)
- ✓Early intervention done properly changes outcomes
- ✓The sensitivity-specificity trade-off is acceptable
- ✓Appropriate (often free) tools are available

Why use standardised tests at all?
Why not just rely on teacher ratings?

Because humans are subject to (unconscious) cognitive biases



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Because humans are subject to (unconscious) cognitive biases

Progress monitoring in an RTI framework

- ✓ **Integral** to RTI b/c data-driven
- ✓ Continuous and **timely**
- ✓ Needs to consider **subskills** for reading success
- ✓ **Not "wait to fail"**
- ✓ Must articulate to **actions**
- ✓ Relies on use of **valid and reliable screening and diagnostic tools**, administered and scored as intended by the publisher
- ✓ Optimal if done in the **context of whole-school policy** and practice
- ✓ **"Dose"** is titrated according to response
- ✓ Decisions are **data-driven**

AND THEN THERE'S PSEUDOSCIENCE

Don’t leave the door ajar for pseudoscience

https://www.thecttl.org

Pseudoscience in education (not hard to find)

- Learning Styles
- Brain Gym
- Coloured lenses / overlays
- Special fonts
- Weighted vests
- Special diets for learning
- Arrowsmith Program
- “We only use 10% of our brains”
- Left-brain / right-brain learners
- Anything with the words “brain-based” in the title

Image: MS PPT

Pseudoscience and neuromyths in education

- X In any classroom, there are left-brain and right-brain learners
- X We only use 10% of our brains
- X Mirror writing is a sign of dyslexia
- X Children have a “learning style”
- X All children learn differently
- X Because reading is about deriving meaning, instruction must begin with meaning
- X Children diagnosed with dyslexia need a different kind of intervention from other struggling students
- X If parents read to their children more in pre-school years, reading problems would disappear.

"Respectable" in some circles but not supported by evidence

- Discovery / student-led learning for initial exposure to new knowledge/skills
- Reading Recovery / Whole Language / Balanced Literacy / Three Cueing / Running Records
- Multiple Intelligences
- CogMed
- Neuro Feedback
- Story Dogs

❖Growth Mindset – evidence is mixed

These are also not hard to find in schools

Evidence-based support for children and young people with additional needs

The Roadmap

Caroline Bowen and Pamela Snow
with Philippa Brandon

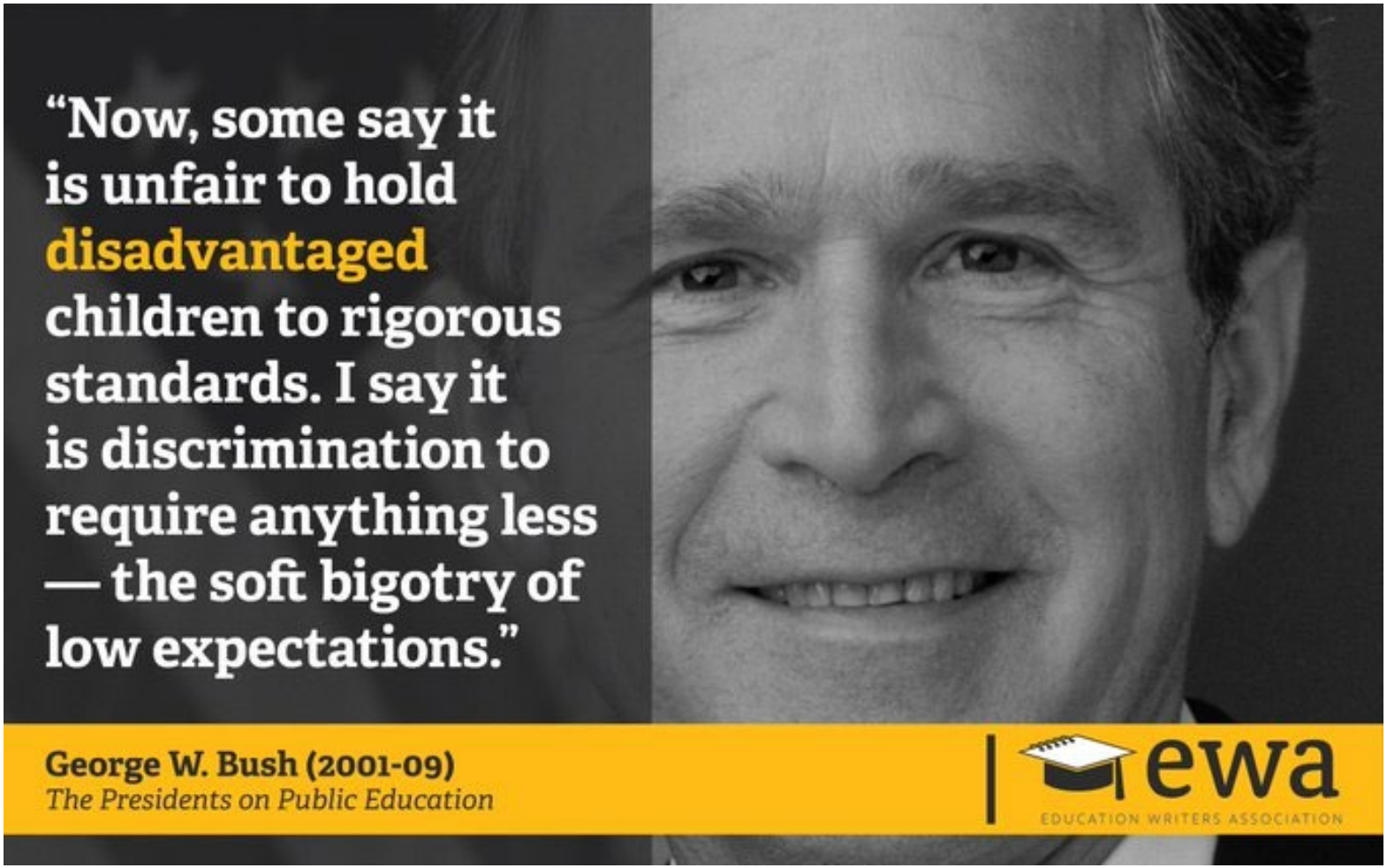
Foreword by Heidi Gregory

BACK TO PUBLIC HEALTH PRINCIPLES

How can public health principles assist in reading instruction / support?

- ✓ Population-level thinking – looking first for **similarities** rather than differences in need
- ✓ **Bottom-up** planning and decision-making / policy
- ✓ Use of **theory-aligned and evidence-based** approaches
- ✓ Awareness of **ideological biases**
- ✓ **Low variance** implementation
- ✓ Effective use of **data**
- ✓ **Transparency and accountability**
- ✓ Forming **connections** between sectors
- ✓ Using **RTI in an MTSS framework**
- ✓ Awareness of **cognitive biases / assumptions**

"Now, some say it is unfair to hold disadvantaged children to rigorous standards. I say it is discrimination to require anything less — the soft bigotry of low expectations."
ewa
EDUCATION WRITERS ASSOCIATION


"Now, some say it is unfair to hold disadvantaged children to rigorous standards. I say it is discrimination to require anything less — the soft bigotry of low expectations."
George W. Bush (2001-09)
The Presidents on Public Education
ewa
EDUCATION WRITERS ASSOCIATION

Reading success / struggle: A perfect storm

- A great deal hinges on being able to read. It is **important**.
- It's a skill that is **biologically unnatural**.
- It draws on the strength and integrity of the **oral language system**.
- It needs to be **taught**, not caught.
- Once children start falling behind, it becomes exponentially **difficult to catch them up**. Few schools have the resources for this.
- There are **behavioural and emotional consequences** for children (primary and secondary) whose reading skills are not at grade level.
- Being part of the **social and economic mainstream** is very difficult without strong reading, writing, and spelling skills.
- Much reading failure can be **prevented** using public health thinking.

Education's relationship with evidence

"Unfortunately, lack of rigor and respect for evidence in reading education are reinforced by the passivity of education leaders who feel that **any idea that can muster a vigorous advocate is legitimate and deserves to be aired**".

Dr Louisa Moats (2000, p.12)

How do professionalism, accountability and community expectations play out in other fields?

Images source: MS PPT

Would this be OK?

"Unfortunately, lack of rigor and respect for evidence in road safety are reinforced by the passivity of road safety experts who feel that **any idea that can muster a vigorous advocate is legitimate and deserves to be aired**".

https://www.wa.gov.au

Some things in life are mutually exclusive, e.g., quality & variability

Applying public health thinking to reading instruction and support means:

Instruction that is

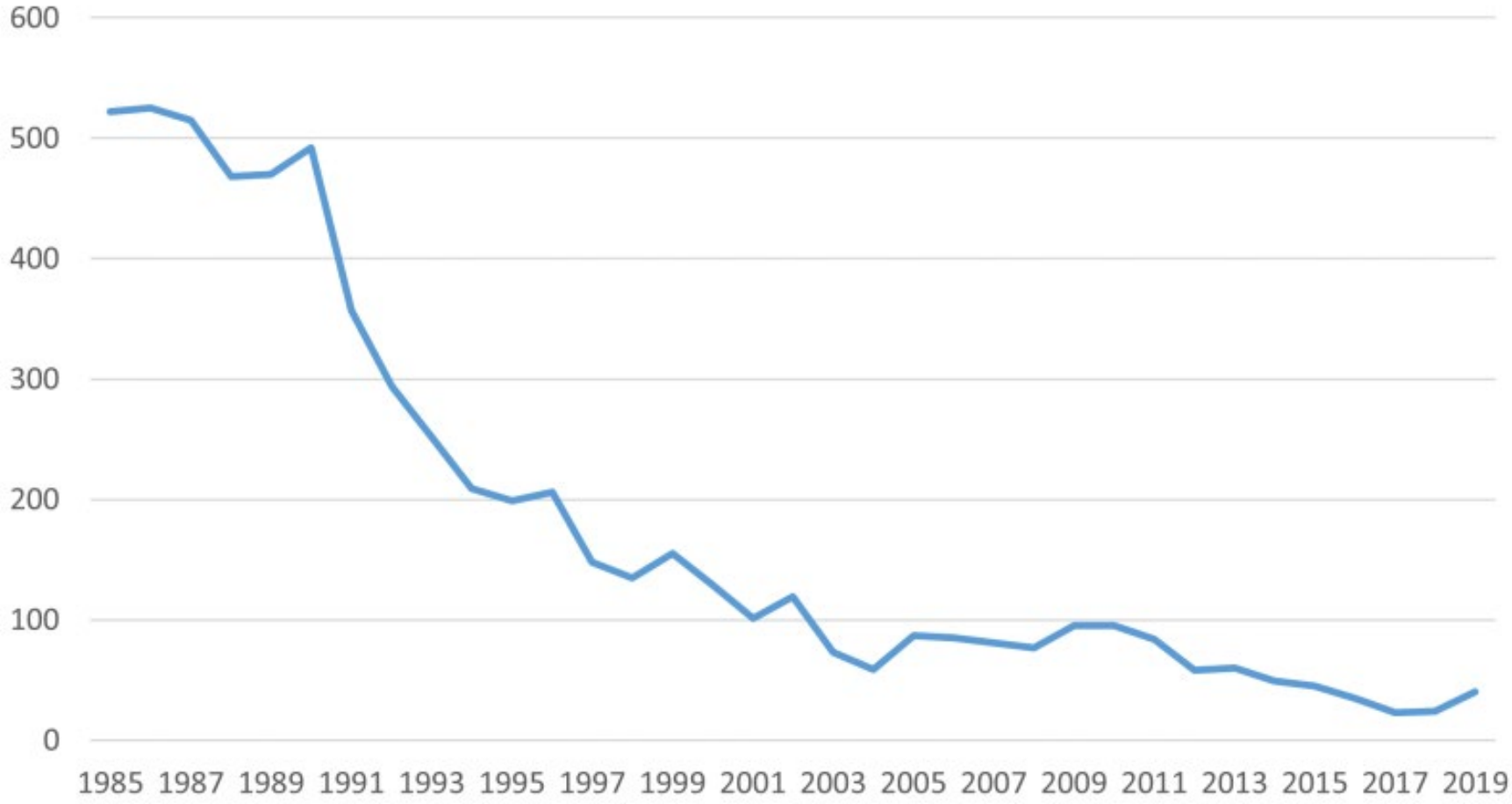
- ✓Evidence-based
- ✓Equitable
- ✓Efficient
- ✓Economical
  - ✓In terms of tax-payer burden
  - ✓In terms of school resources
  - ✓In terms of students' valuable instructional time
  - ✓In terms of parents' resources
- ✓Ethical
- ✓Educational

Image: P. Snow

We have many public health data-driven successes to draw on

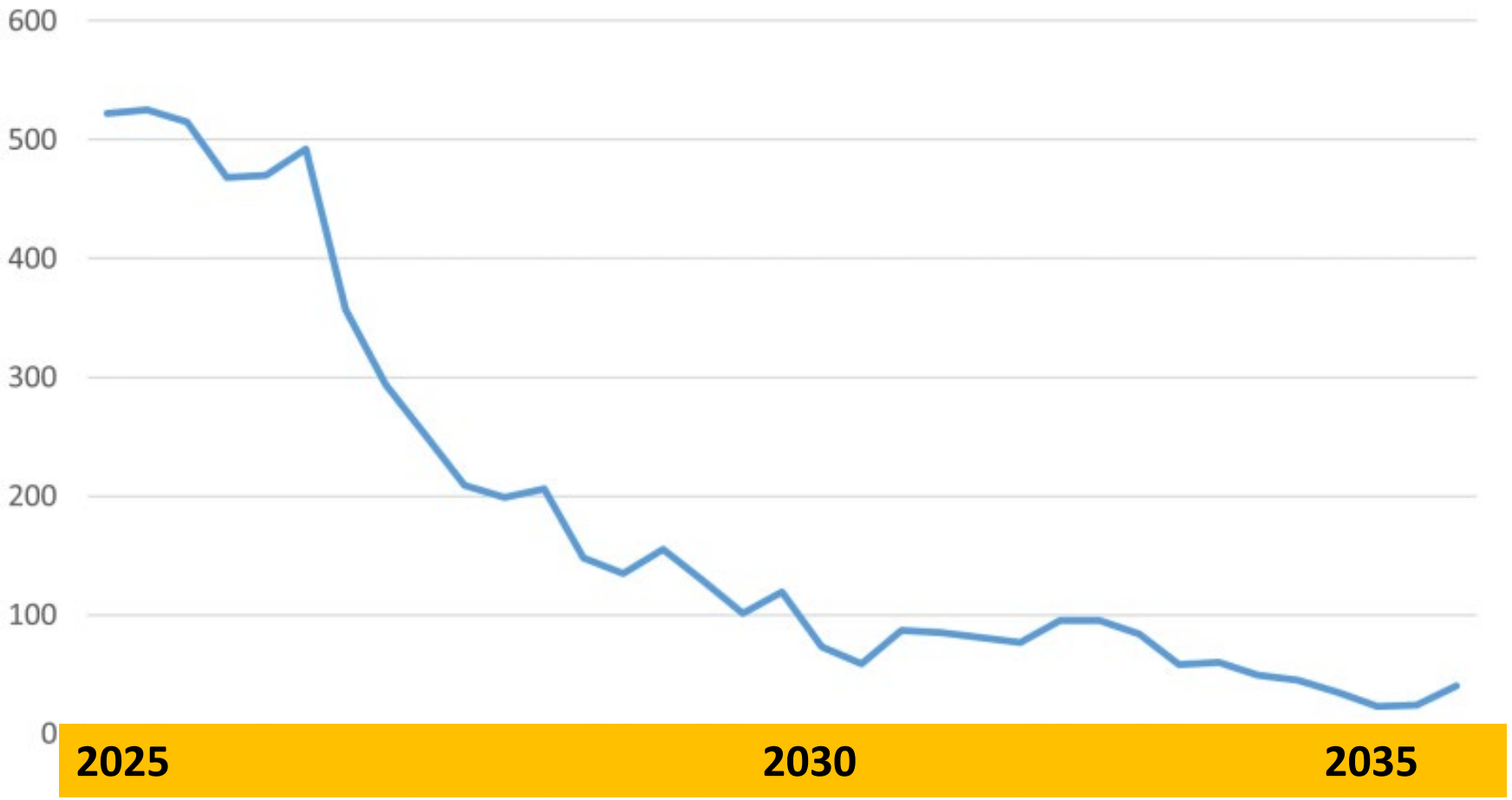
- Road safety
  - Drink-driving
  - Seatbelts
  - Learner Driver requirements
  - Engineering advances
    - vehicle
    - road
    - remote traffic surveillance
- Vaccination / disease prevention
- Maternal and perinatal infant mortality
- Sudden Infant Death Syndrome

Total number of SIDS deaths in Australia 1985 – 2019



Source: https://www.nhmrc.gov.au/about-us/resources/impact-case-studies/safer-sleeping

Rates of reading failure in Australia?



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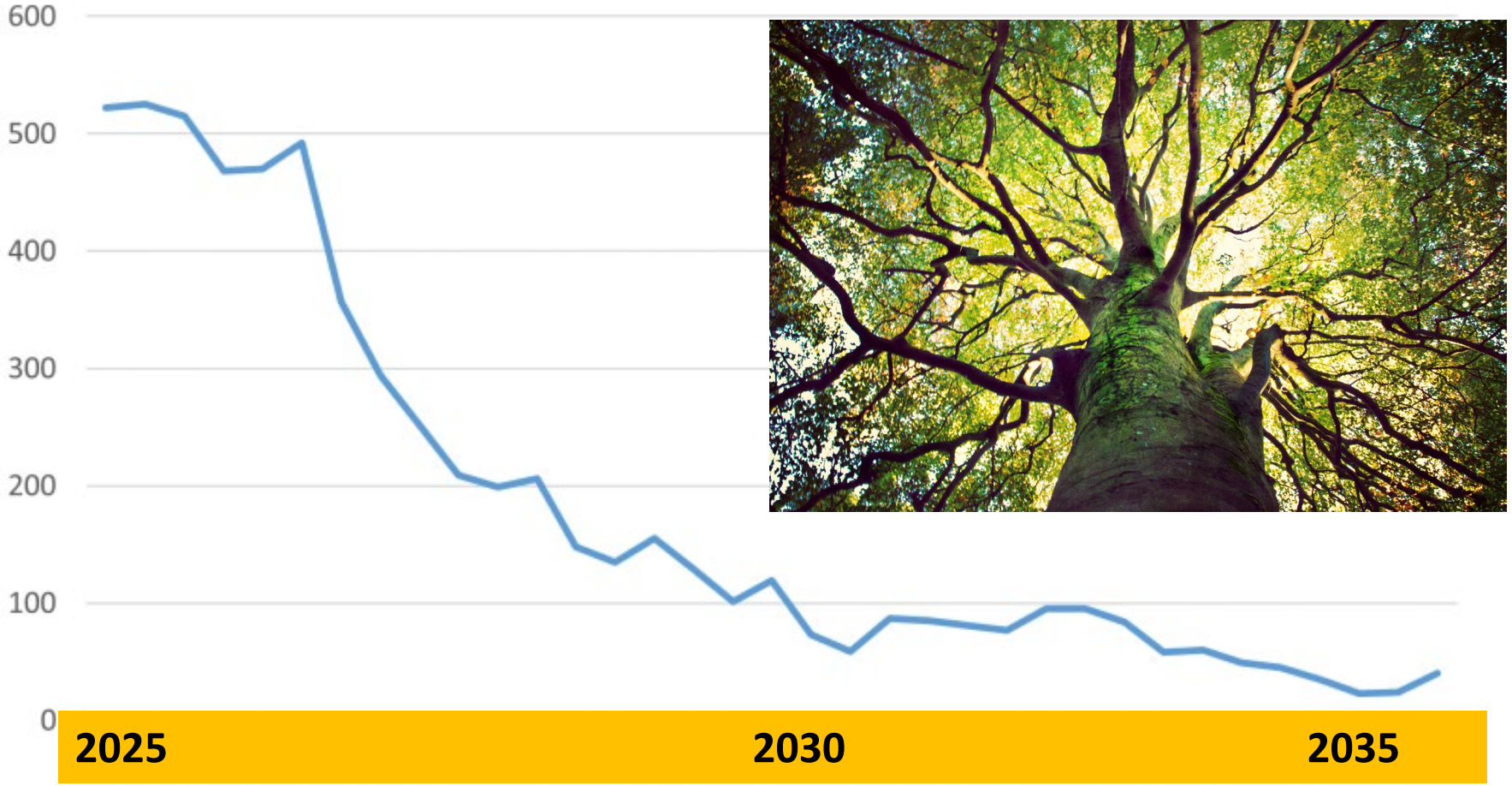

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Image source: MS PPT

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The SOLAR Lab: https://solar.blogs.latrobe.edu.au/

@PCSnow1604 (Formerly @pamelasnow2)

The Snow Report: www.pamelasnow.blogspot.com

Thank you

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