



Catholic
Education
Tasmania

Student Focused
Christ Centred
Learning for Life

The following resource has been
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Teaching Matters Summit.

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Strong reading instruction is a public health imperative

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TEACHING MATTERS

*SCIENCE OF LEARNING
NATIONAL SUMMIT*



Presentation Overview



- What IS reading and why is it important?
- What is “literacy”?
- How can public health principles help in reading instruction?
- Response to Intervention: A gift from public health
- Leaving the door ajar for pseudoscience
- The E’s (ease) of reading instruction in a public health framework



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.



What is reading?

- A biologically secondary skill – needs to be taught.
- A skill that draws on biologically primary skills (in oral language in particular).
- A skill that enables humans to derive meaning from printed text of a range of novelty and complexity levels.



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Biologically primary Vs biologically secondary skills

(Geary, 2008)



Biologically primary

Turn-taking

Reading facial expressions

Learning to walk

Acquiring language

Things that can be learnt
“in the village”



Biologically secondary

Reading, writing, and spelling

Algebra

Trigonometry

Learning a musical instrument

Things that need to be taught
to children (at school)

See David Didau: *Education isn't natural. That's why it's hard.*

<https://learningspy.co.uk/psychology/can-learn-evolutionary-psychology/>



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/>)



There is only one *reading*, but there are multiple forms of “literacy”

- Civic Literacy
- Social Literacy
- Digital Literacy
- Financial Literacy
- Health Literacy
- Legal Literacy.
- Media Literacy
- Global Literacy
- Economic Literacy
- Aesthetic Literacy
- Spiritual Literacy
- Ethical Literacy
- Environmental Literacy
- 21st Century literacies (collaboration, cooperation, creativity).
- **Or are these simply “competencies” or knowledge domains?**



Reading Vs Literacy

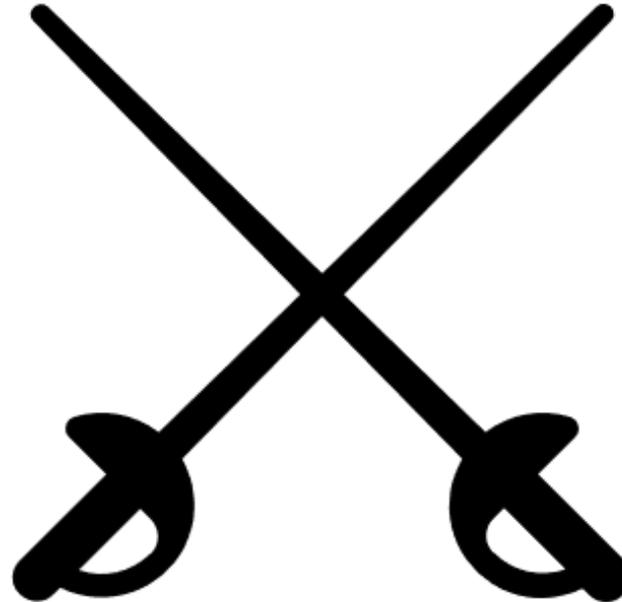
Reading

Studied and valued by cognitive psychologists.

Neuroscience frameworks .

Analysis of (micro) subskills.

A verb



Literacy

Studied and valued by education academics.

Sociological frameworks.

Focus on (macro) meaning

A noun





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

RISK FACTORS

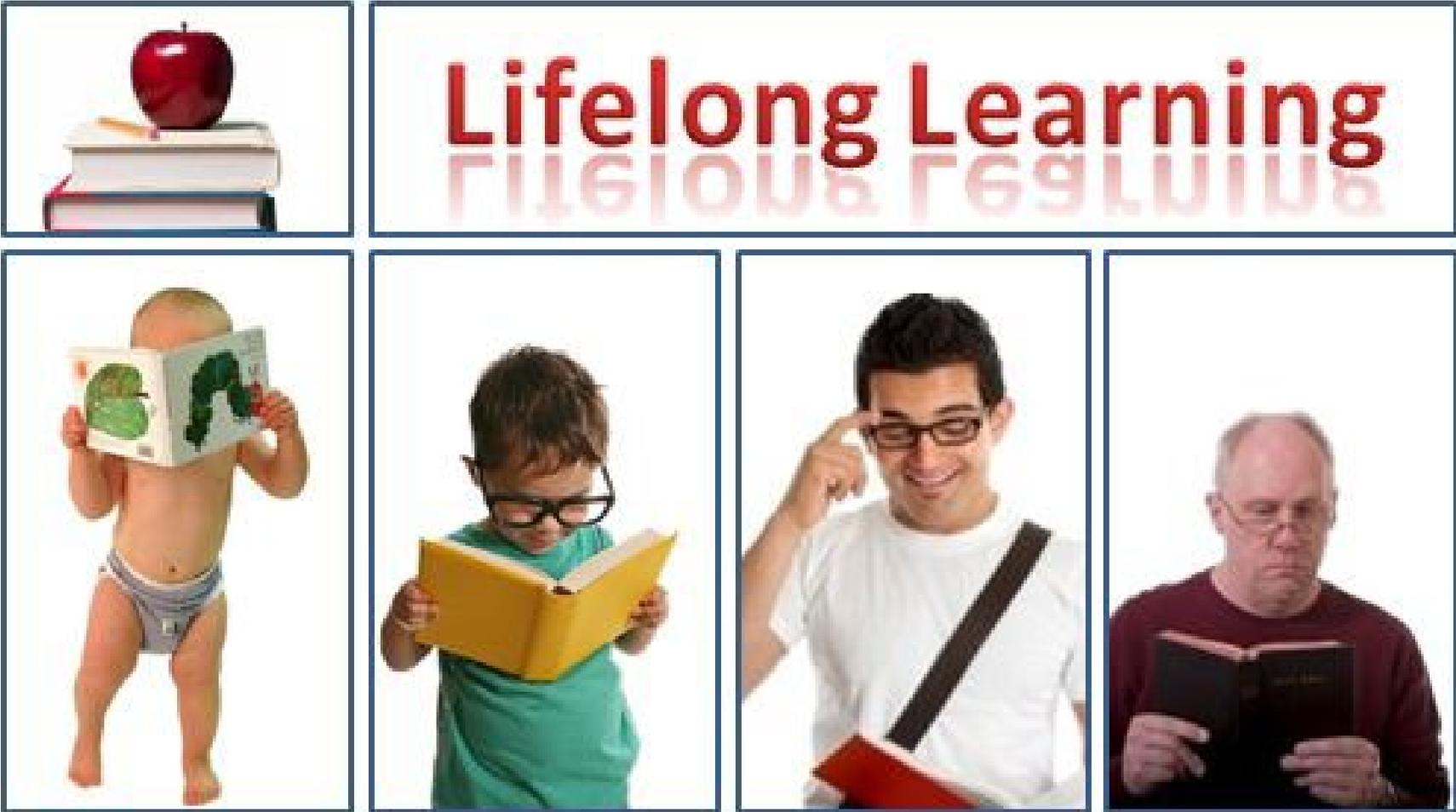
- **Academic under-achievement**
- **Coercive parenting**
- **Sensation-seeking personality**
- **History of conduct disturbance**
- **Lack of connectedness**
- **Substance-abusing peers**
- **Emotion-focused coping**

PROTECTIVE FACTORS

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



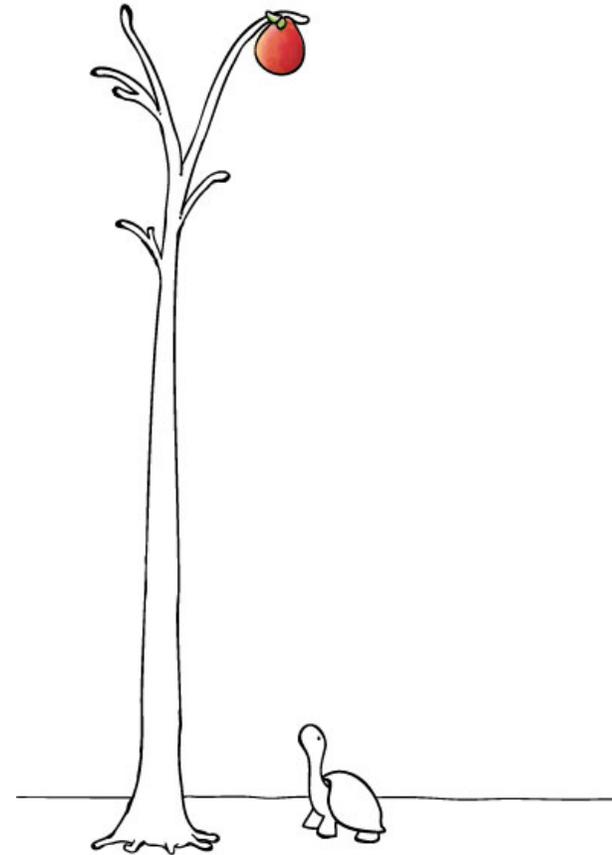
Reading enables ...



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

Correlates

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

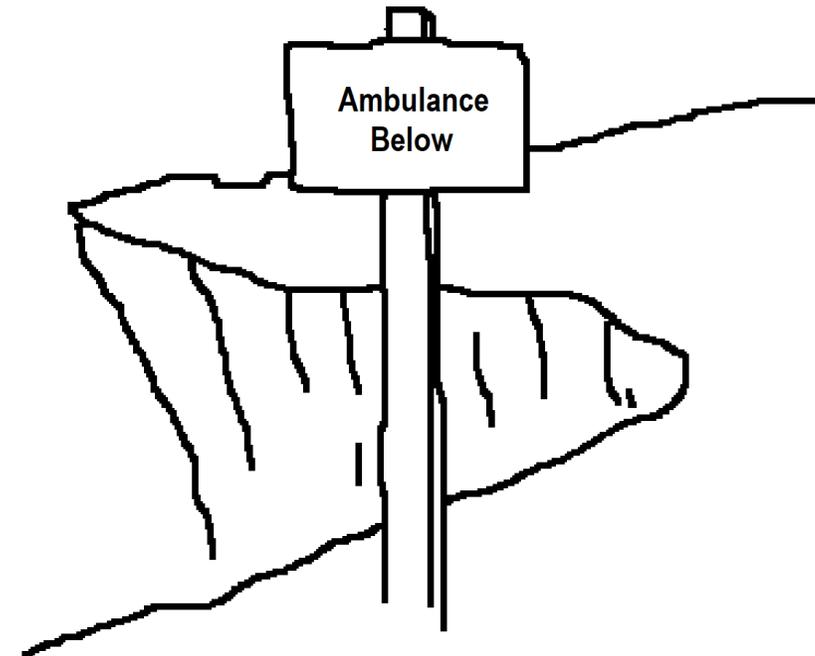


What does public health thinking have to do with reading instruction?



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



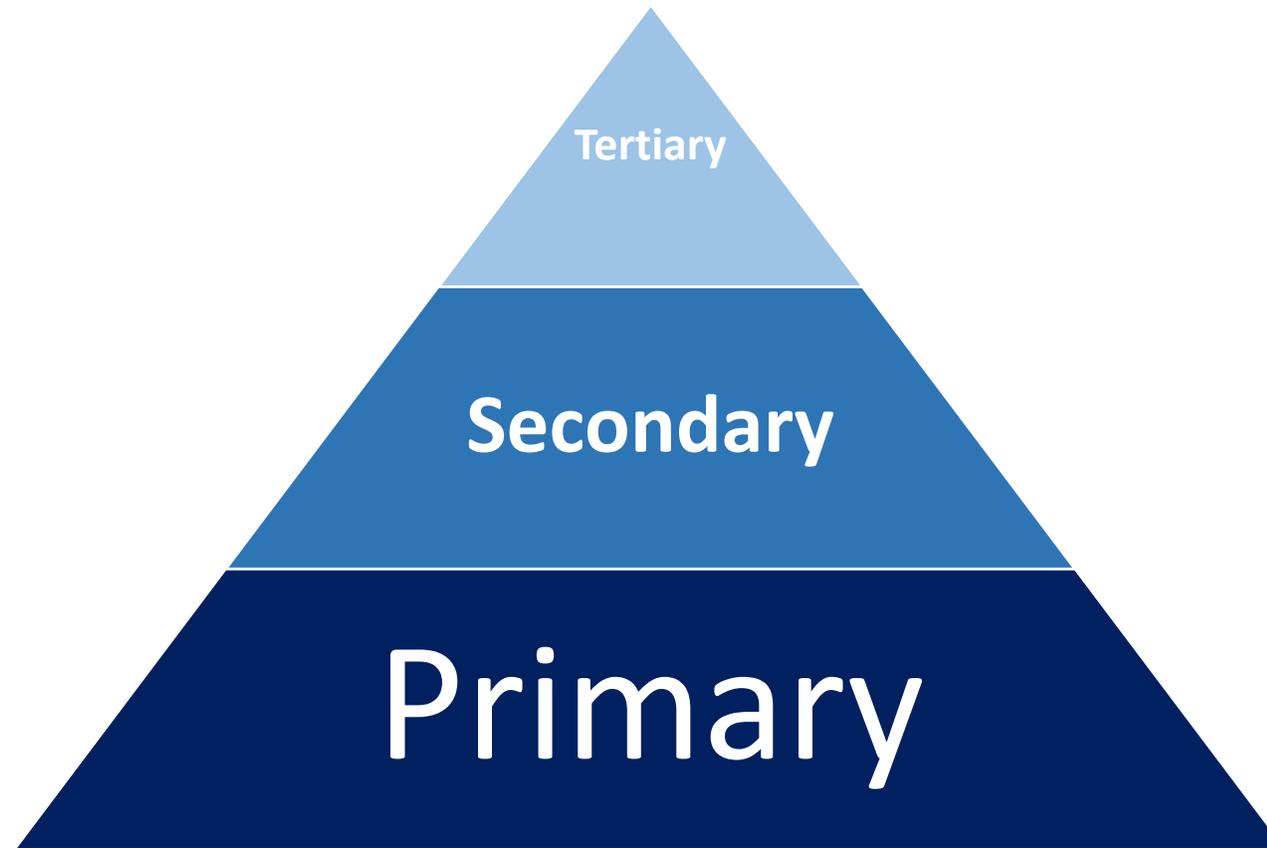
How can public health principles assist in reading instruction?

- Population-level thinking – looking first for **similarities** rather than differences in need
- **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**

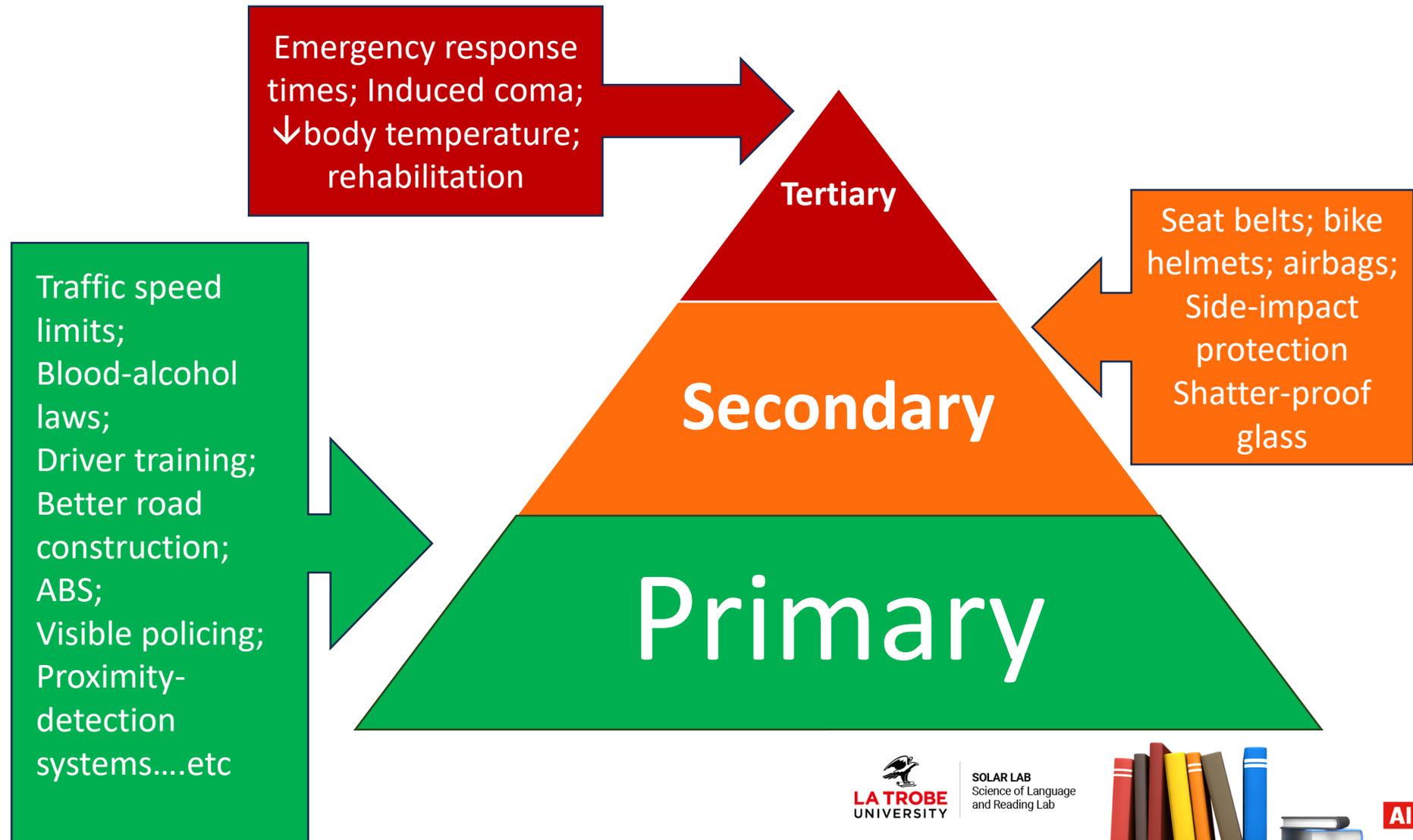


Public health: primary, secondary and tertiary* prevention

*levels of prevention, not education sectors

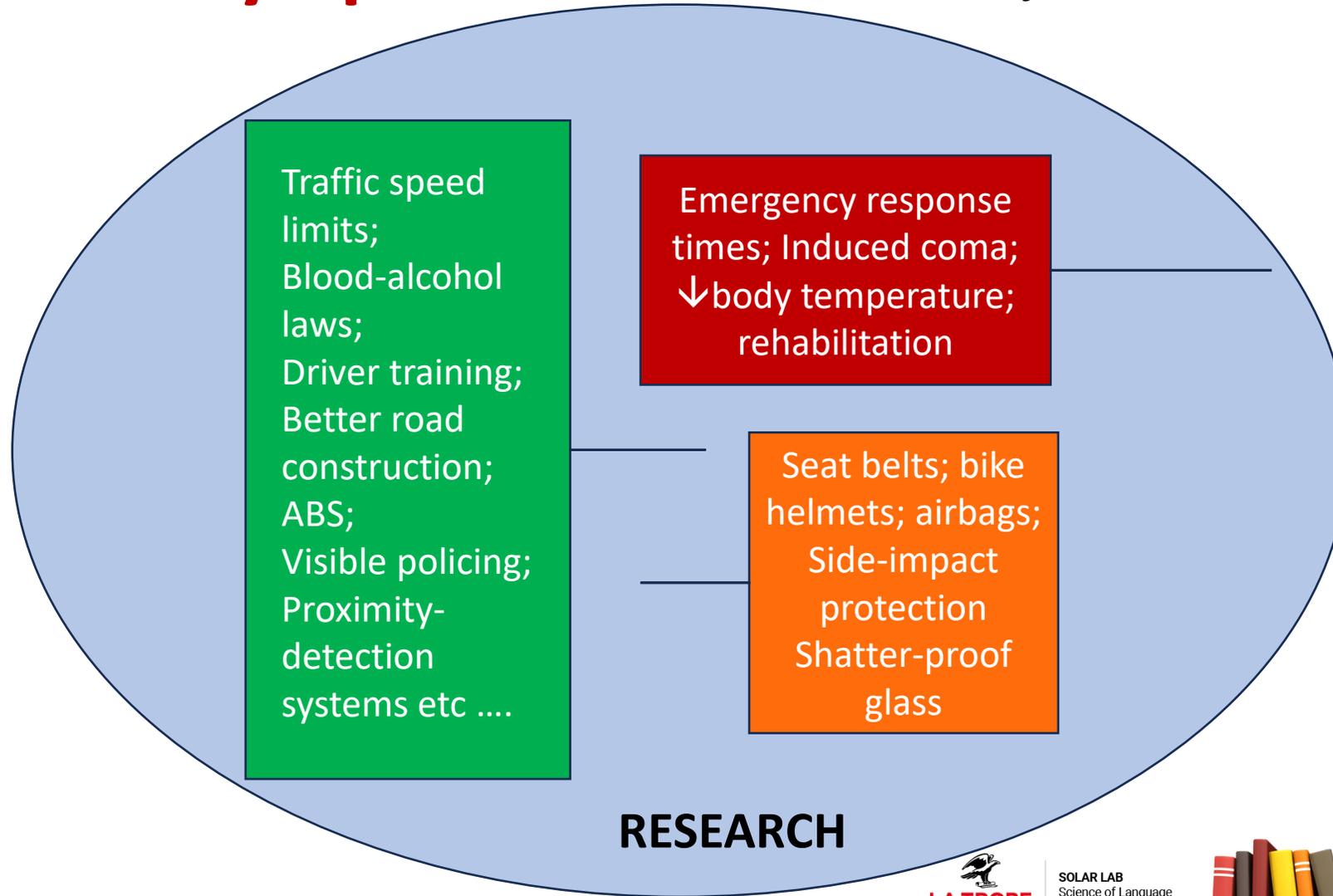


Public health: primary, secondary and tertiary* prevention A road safety worked example



Public health: primary, secondary and tertiary* prevention

A road safety worked example

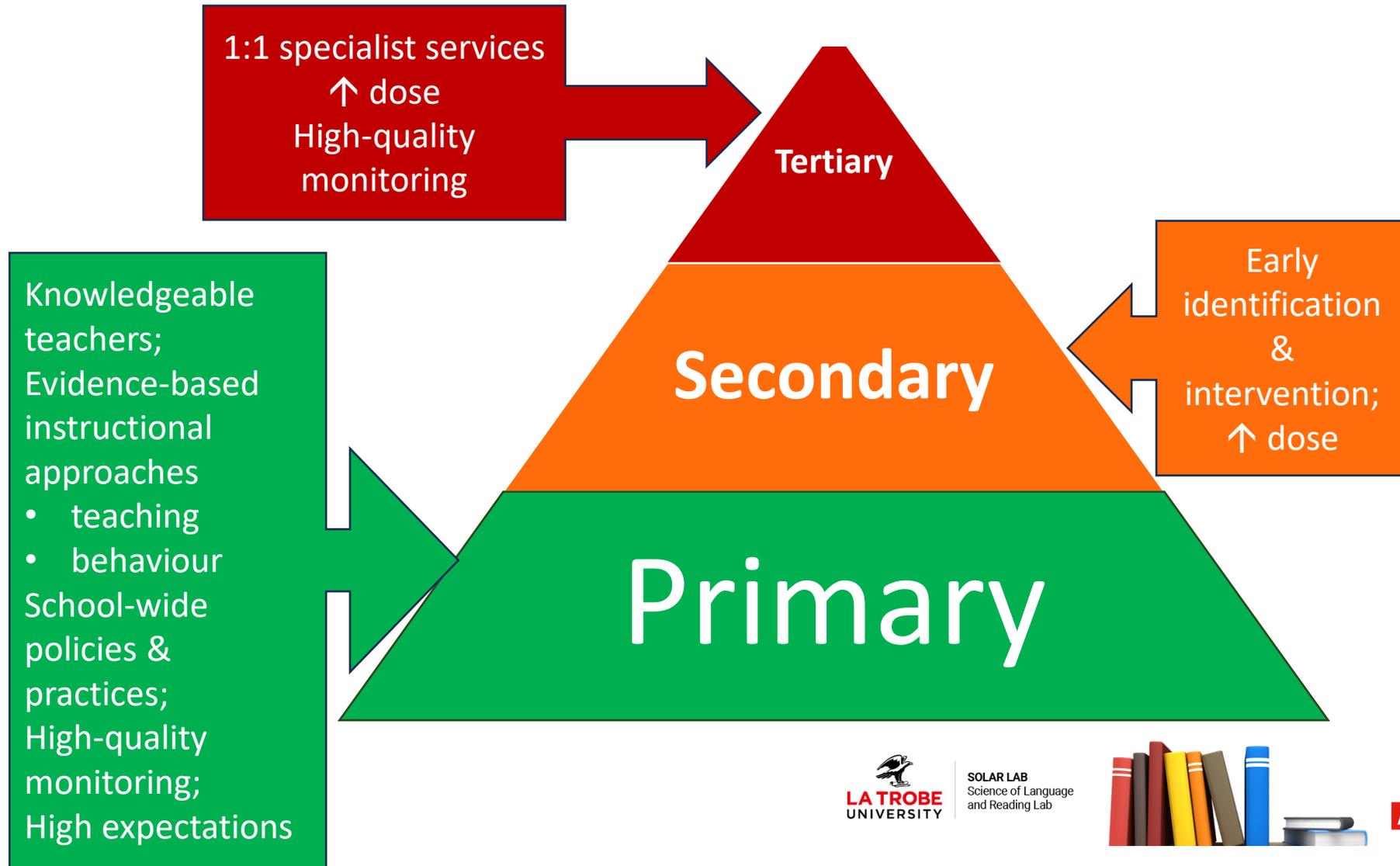


Road safety: key assumptions

- ✓ 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 new evidence emerges
- ✓ The bulk of the resources are directed at prevention
- ✓ There are accountability mechanisms in place when implementation is poor

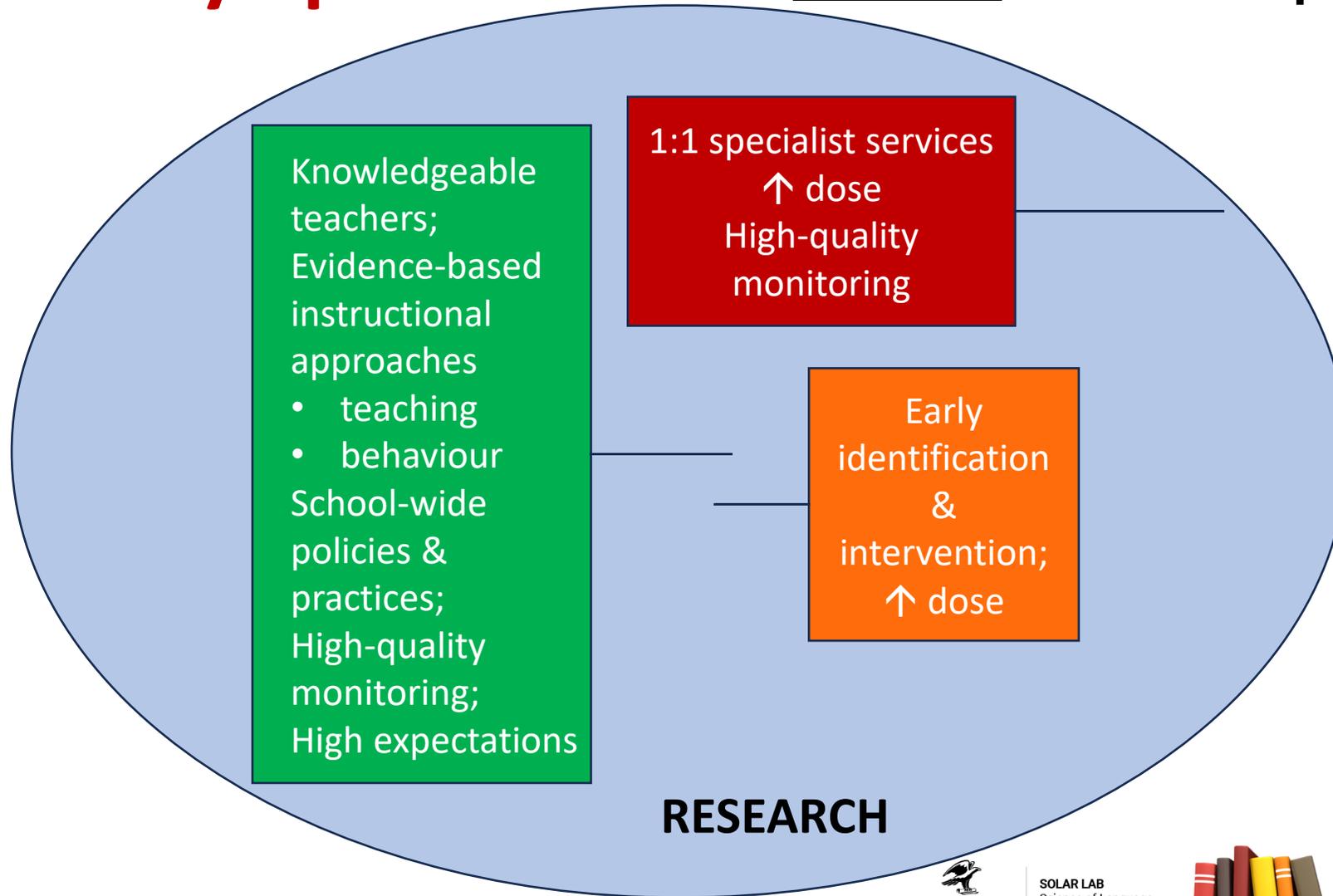


Public health: primary, secondary and tertiary* prevention An education worked example

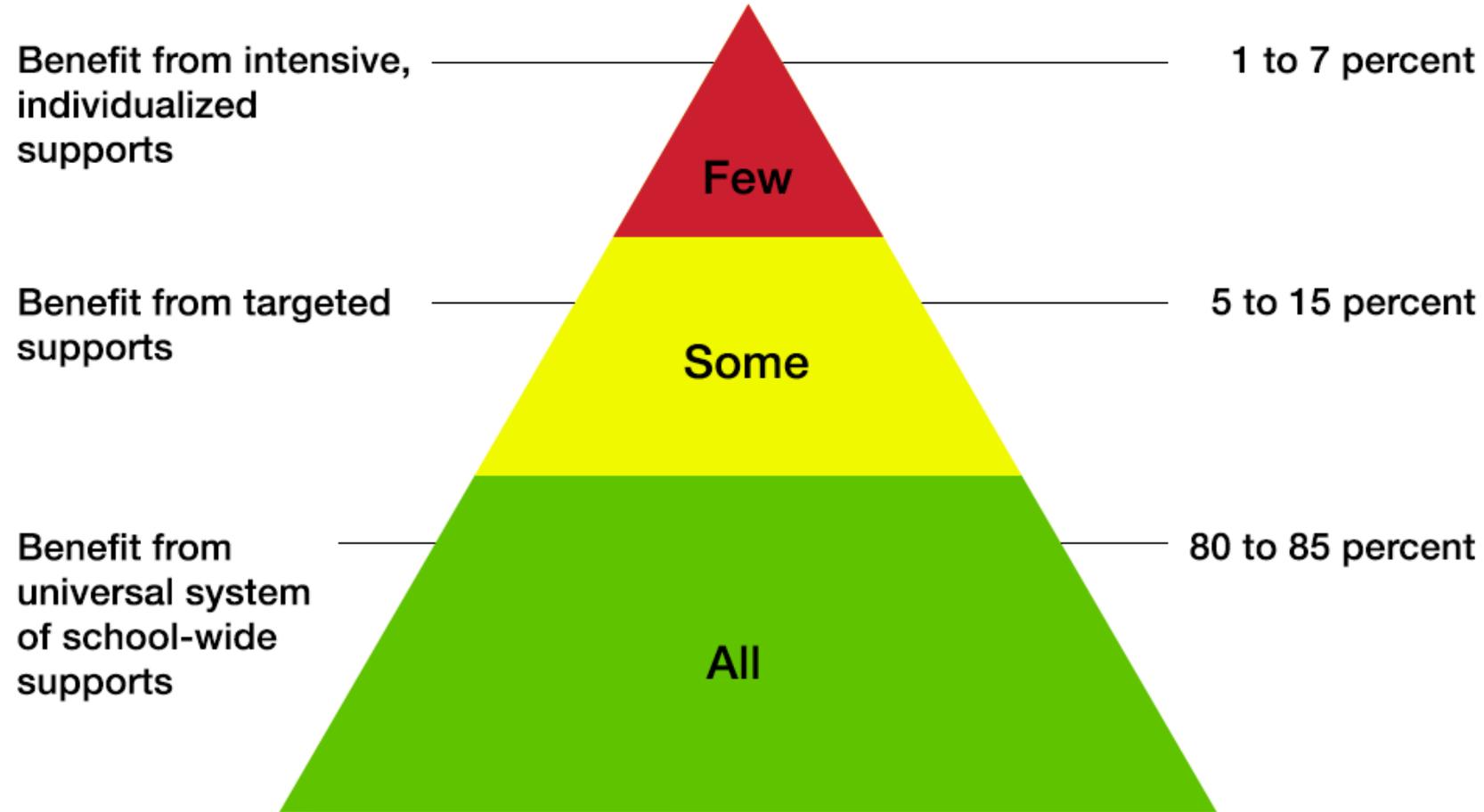


Public health: primary, secondary and tertiary* prevention

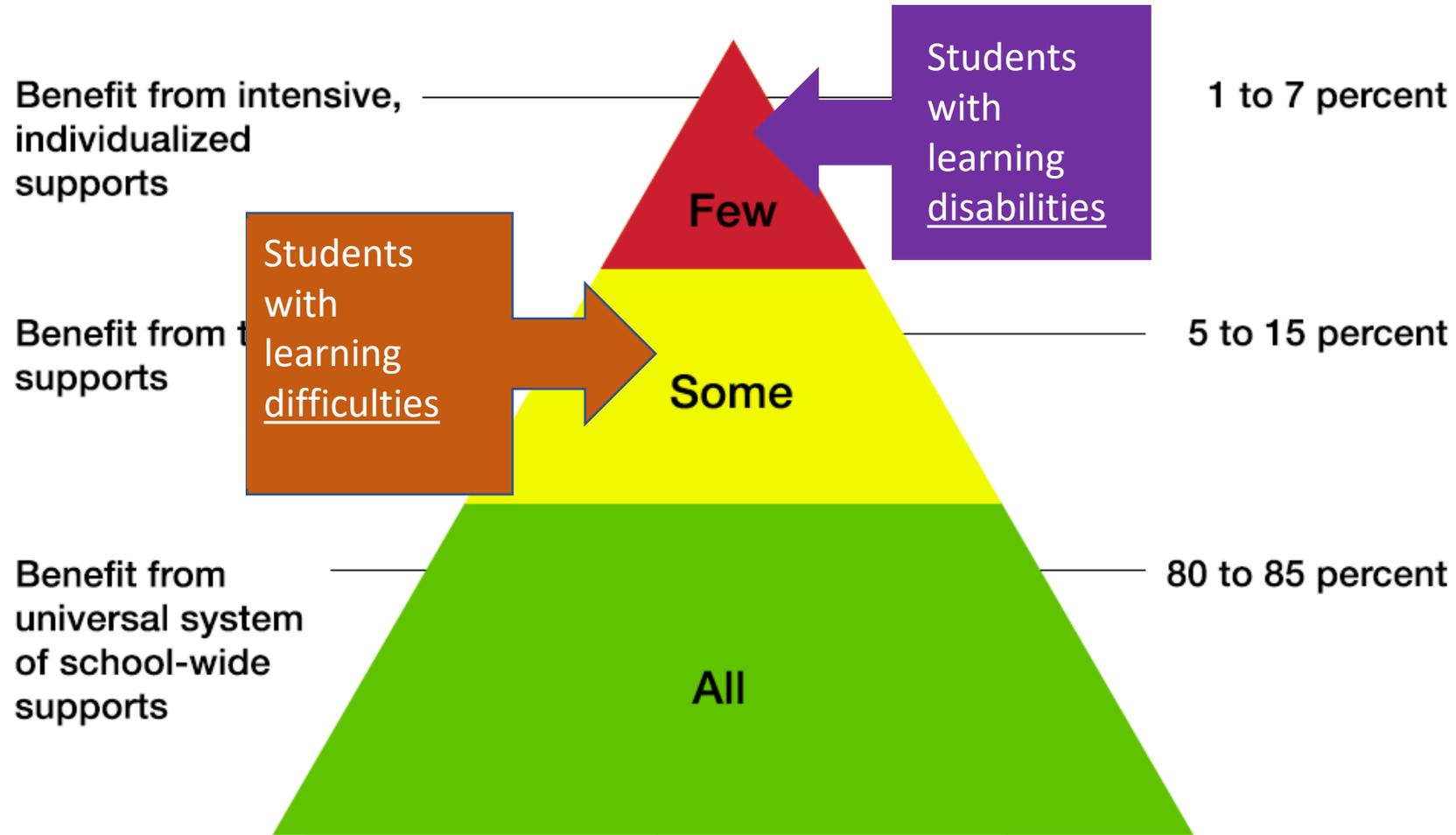
An education worked example



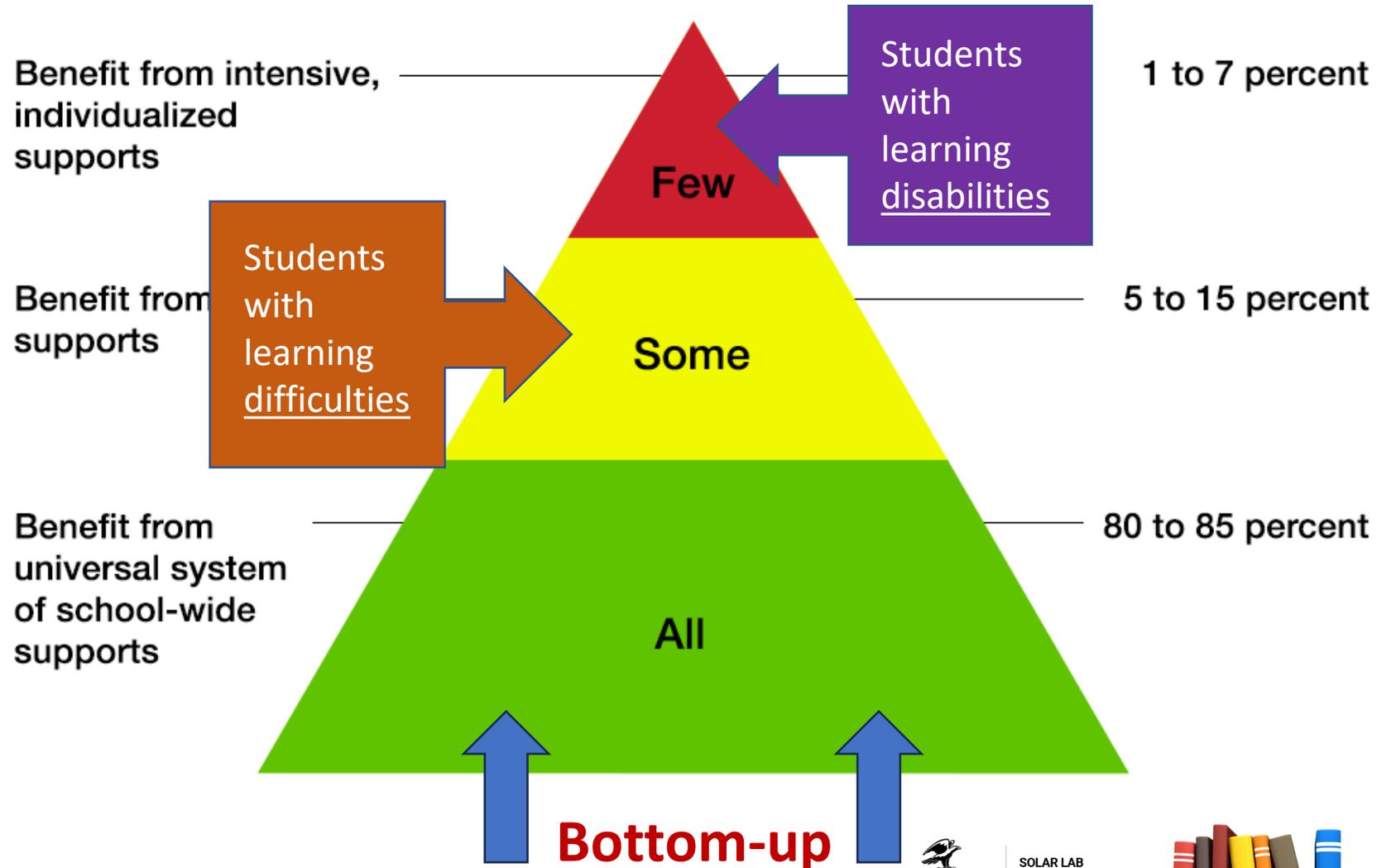
Response to Intervention (Instruction)

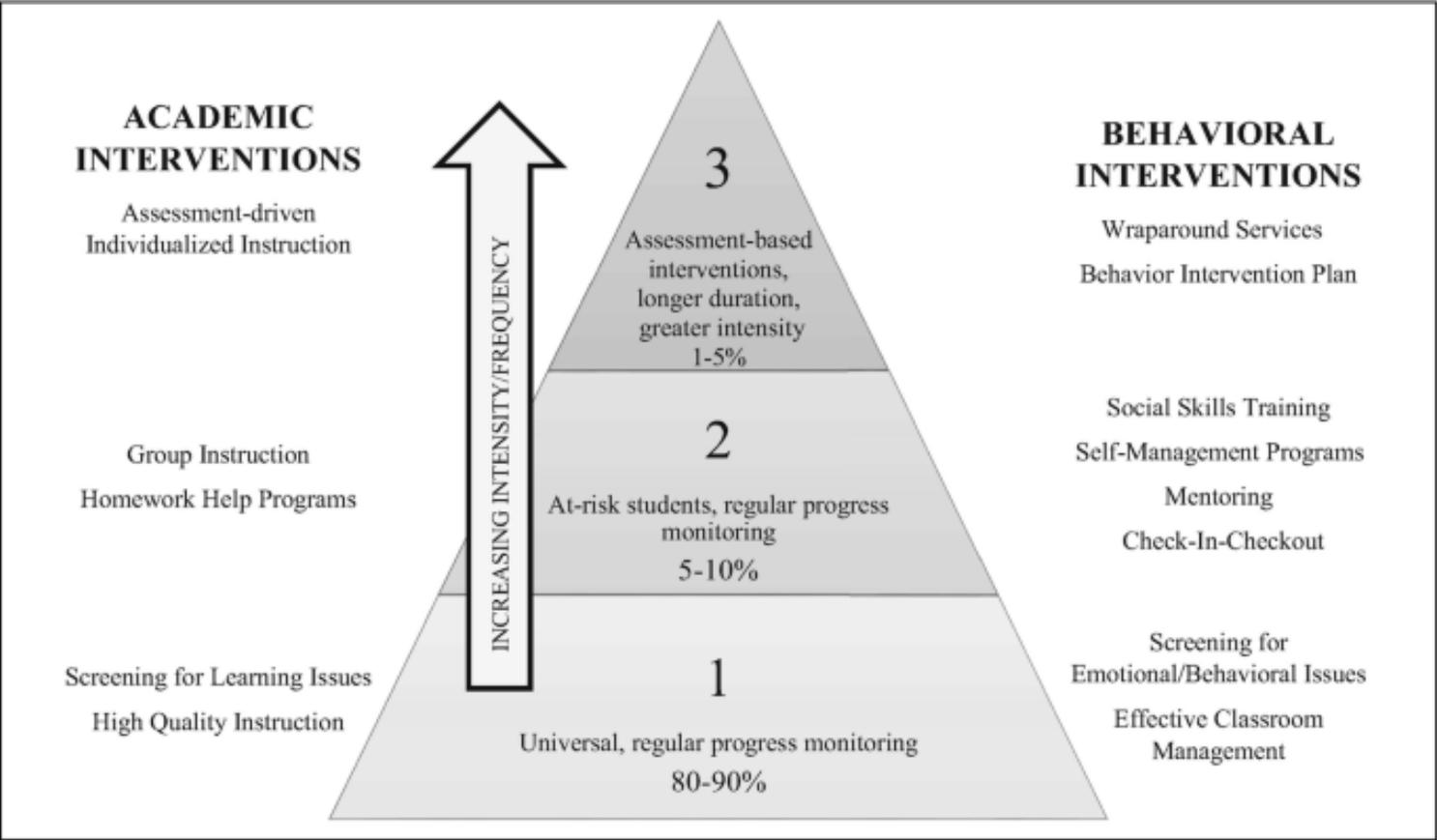


What does RTI “look” like?



What does RTI “look” like?





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.



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



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



RTI means *use your best china every day*



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

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.

Uniformity of (rigorous) tool selection allows for accurate monitoring at scale over time

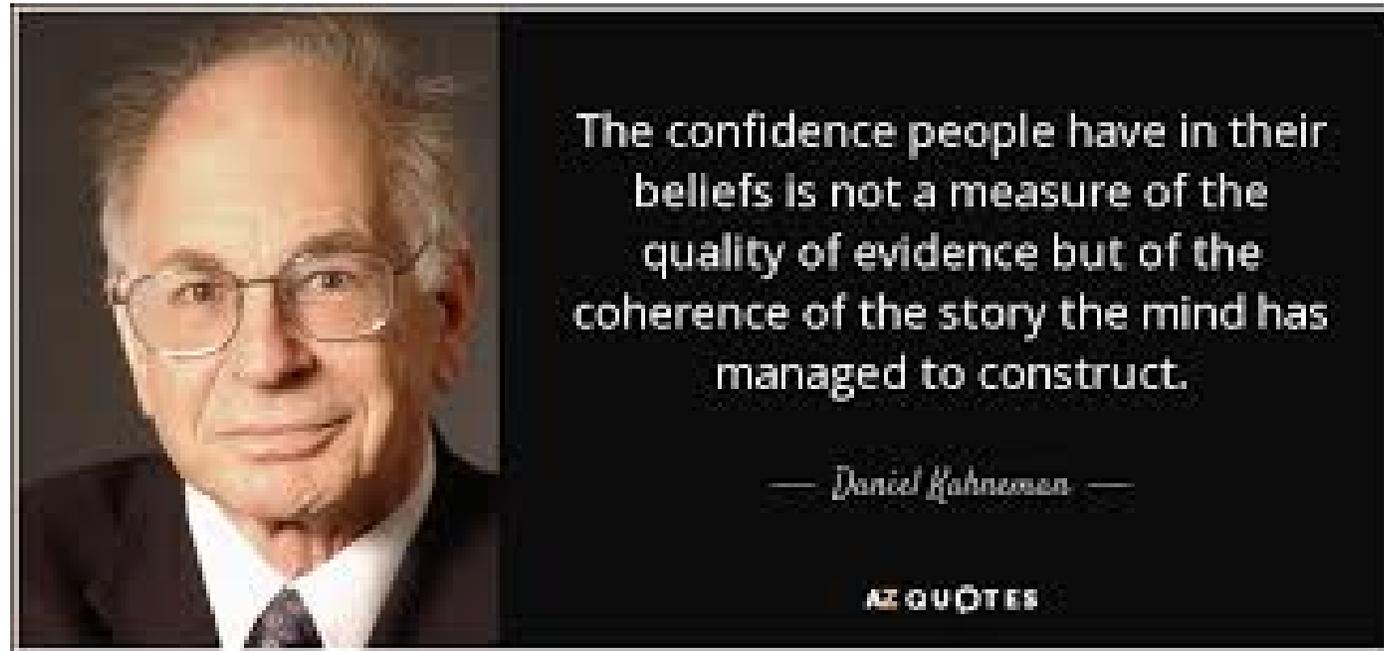
Progress monitoring in an RTI framework

- **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**



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

**Because humans are subject to (unconscious)
cognitive biases**

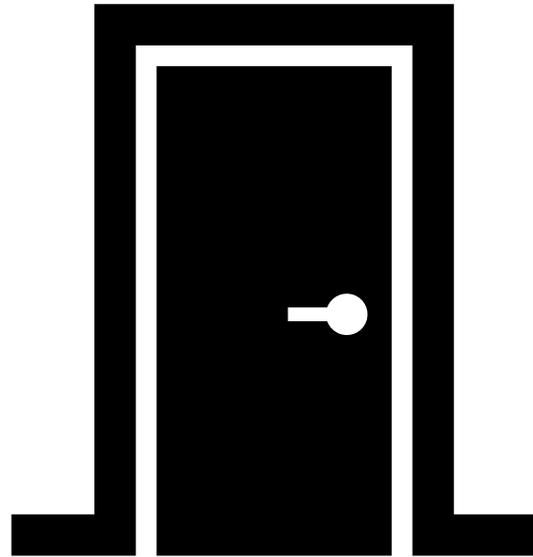


Reading success / struggle: A perfect storm

- 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.
- Much reading failure can be **prevented** using public health thinking.
- Being part of the **social and economic mainstream** is very difficult without strong reading, writing, and spelling skills.



Students who can't read proficiently Vs those who can



[Filip Kominik](#) via Unsplash



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)



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>



Don't leave the door ajar for pseudoscience



<https://www.thectl.org>



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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.



Things that don't work / have no / insufficient evidence to justify their use in education

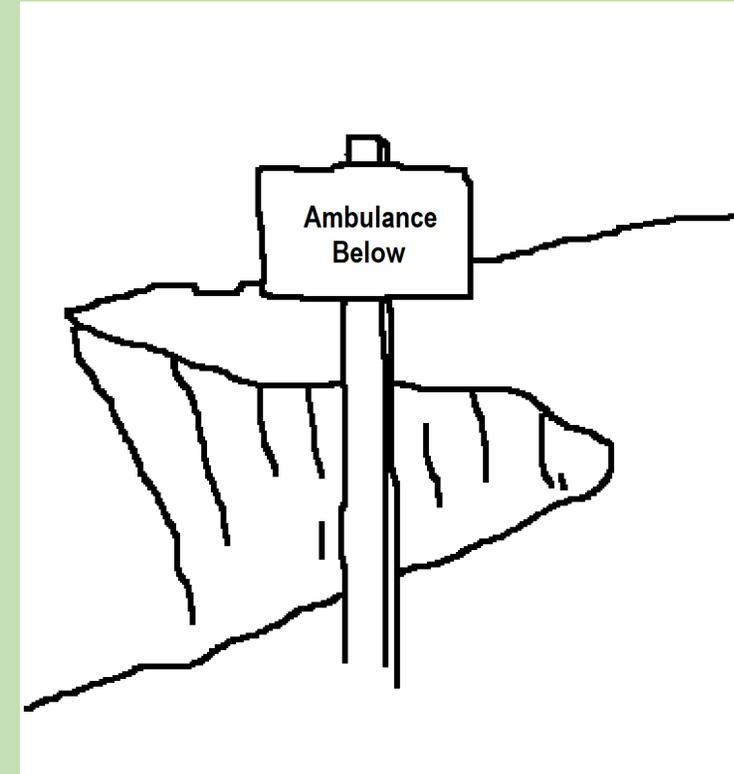
- ❖ CogMed
- ❖ Neuro-feedback
- ❖ Brain Gym
- ❖ Special diets
- ❖ Arrowsmith Program
- ❖ Learning Styles
- ❖ Whole-Brain / Brain-Based Learning
- ❖ Story Dogs
- ❖ Growth Mindset
- ❖ Coloured lenses / overlays
- ❖ Remember – there is an opportunity-cost associated with time/money/hope wasting.



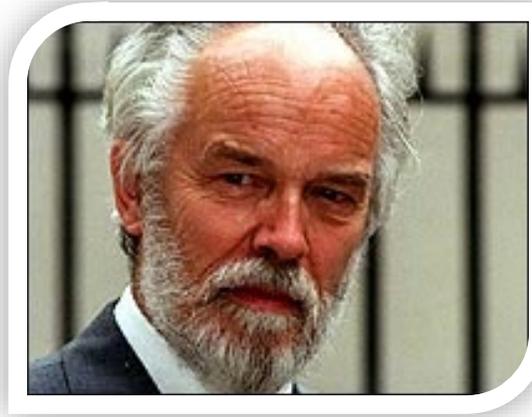
Applying public health thinking to reading instruction means it is

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



Former Chair of the UK Youth Justice Board, Rod Morgan (2007):



“It may be too much to say that if we reformed our schools, we would have no need of prisons. But if we better engaged our children and young people in education, we would almost certainly have less need of prisons.”

Effective crime prevention has arguably more to do with education than sentencing policy”.





Image: <https://koala.sh/>



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



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The Snow Report: www.pamelasnow.blogspot.com





Thank **you**

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