

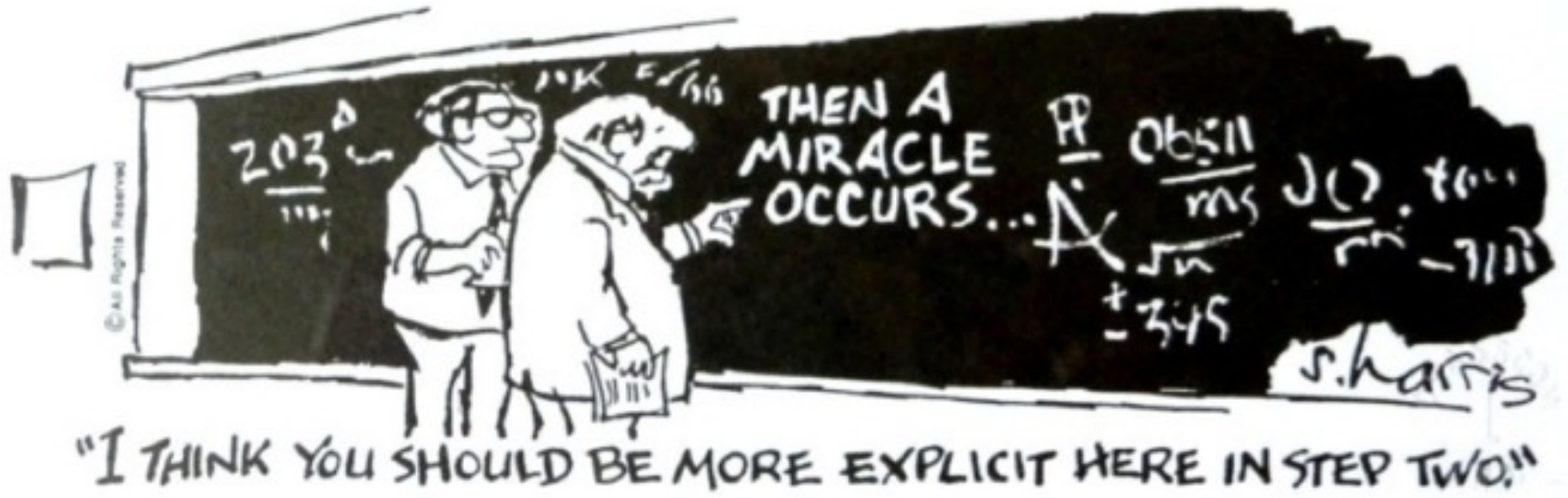
Data, Evidence and Excellence

Presentation to SACPPA conference

Pete Goss

2 June 2021

It's too easy for those outside the classroom to say that data & evidence is the answer...



... but data can be transformative

A Sea of Data

Writing

Cluster 5

- ~ I can use words my teacher shows me
- ~ I can write 4 or 5 sentences
- ~ I can use describing words
- ~ I can write letters that are all the same size
- ~ I can re-read to check my writing makes sense

Cluster 6


- ~ I can use headings and paragraphs
- ~ I can re-read my writing to correct it myself
- ~ I can use some punctuation correctly
- ~ I can write sequenced ideas
- ~ I can write longer texts

Cluster 7

- ~ I can plan before I write
- ~ I can explain who I am writing for and why
- ~ I can write with accurate spelling
- ~ I can use capital letters for names and places
- ~ I can use a variety of verbs
- ~ I can write informative texts

Cluster 8

- ~ I can write 1 full page
- ~ I can publish my work
- ~ I can edit my work
- ~ I can give an opinion in my writing
- ~ I can write using speech marks, commas and apostrophes
- ~ I can check that my sentences make sense





Agenda

1. The big picture
2. Using data to improve learning
3. Making it stick

1: The big picture

Three overarching challenges

-
1. Improve the teaching of the core academic subjects
2. Prepare young people better for a changing world
3. Reduce the wide and growing gaps between educational haves and have nots
- Continuous improvement
+
innovation
- No easy solutions
- The diagram features three numbered challenges listed on the left. A large right-facing curly bracket groups the first two challenges, with the text 'Continuous improvement + innovation' positioned to its right. A second, smaller right-facing curly bracket groups the third challenge, with the text 'No easy solutions' positioned to its right. The background is a solid orange color.

Learning progress is the key

Three axioms:

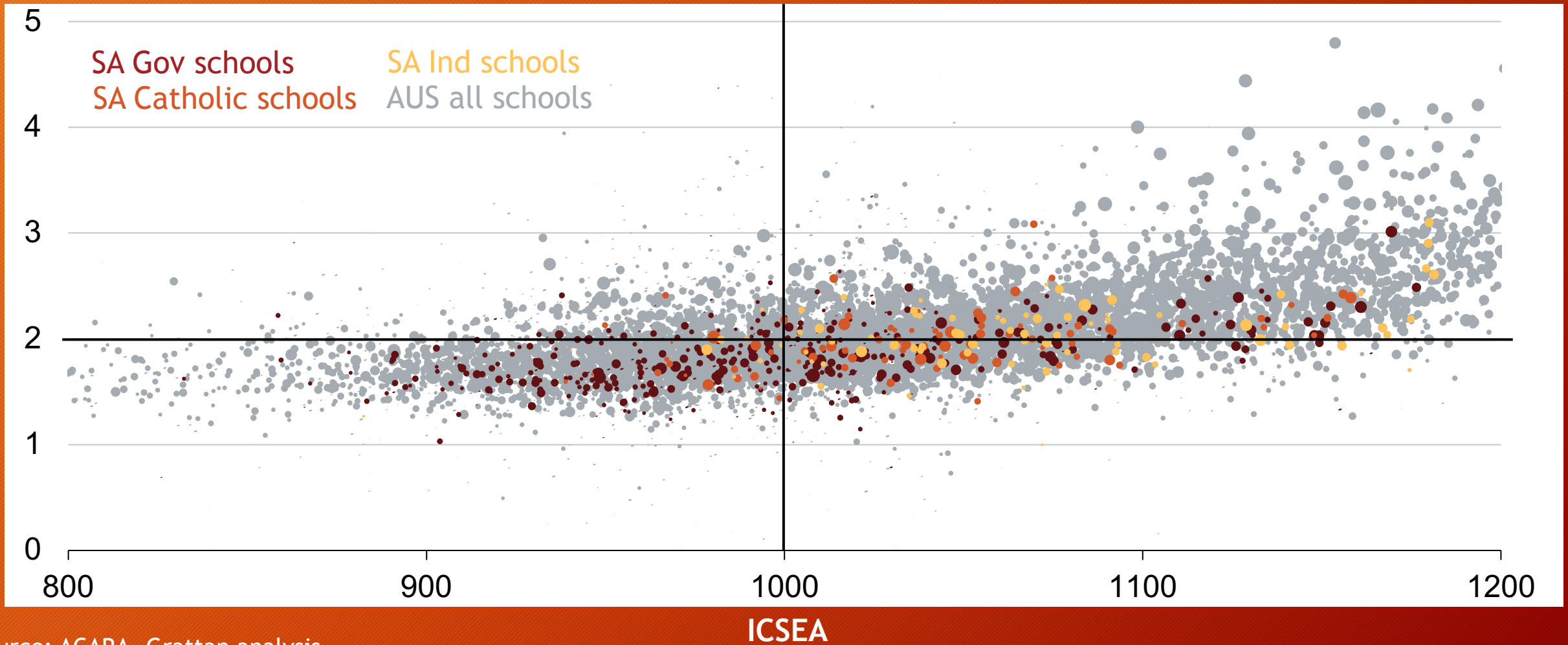
- Success comes from maximising *progress*
- By definition, stronger progress lifts *achievement*
- *Targeted teaching* is essential to maximise progress

One goal:

At least one year's
learning each year
for every student

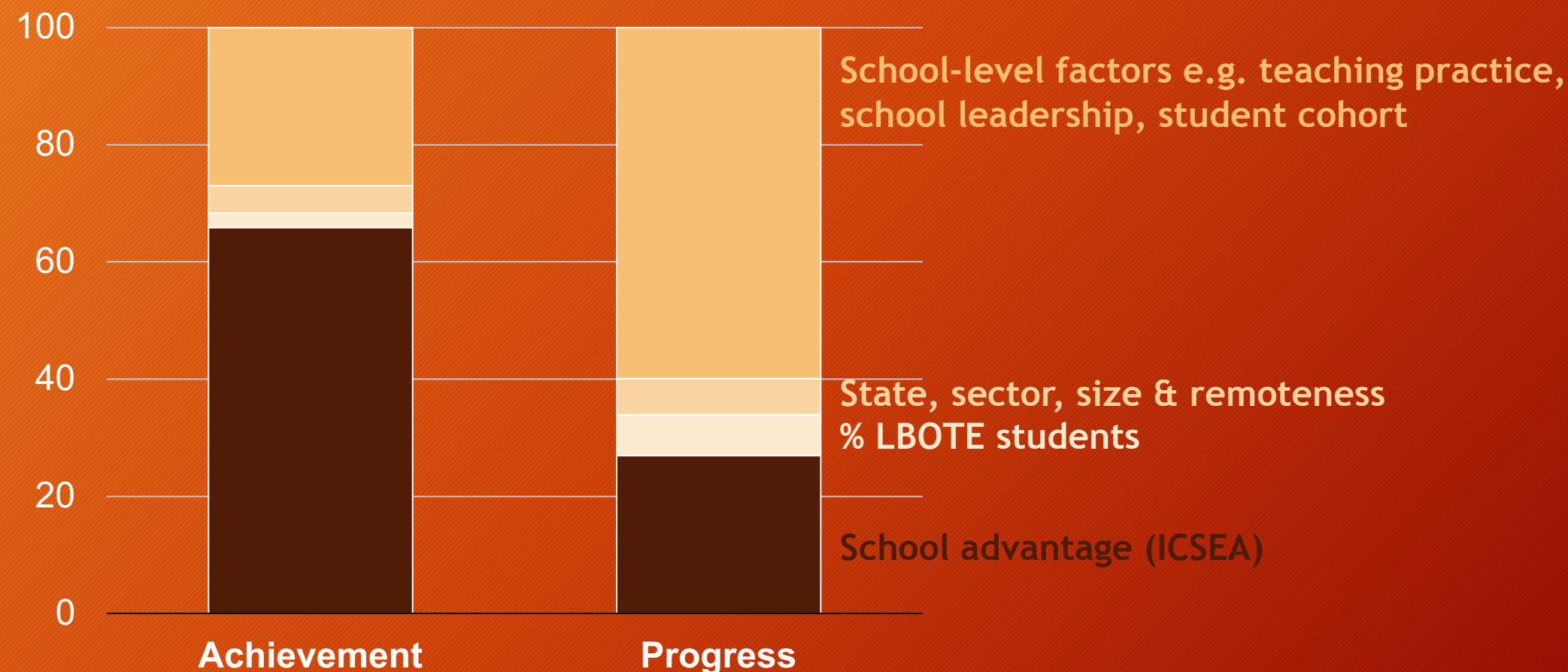
But the story of Australian education is variation

Years of progress from Year 3 to Year 5, by school, numeracy, average across 2010-12 to 2014-16 cohorts

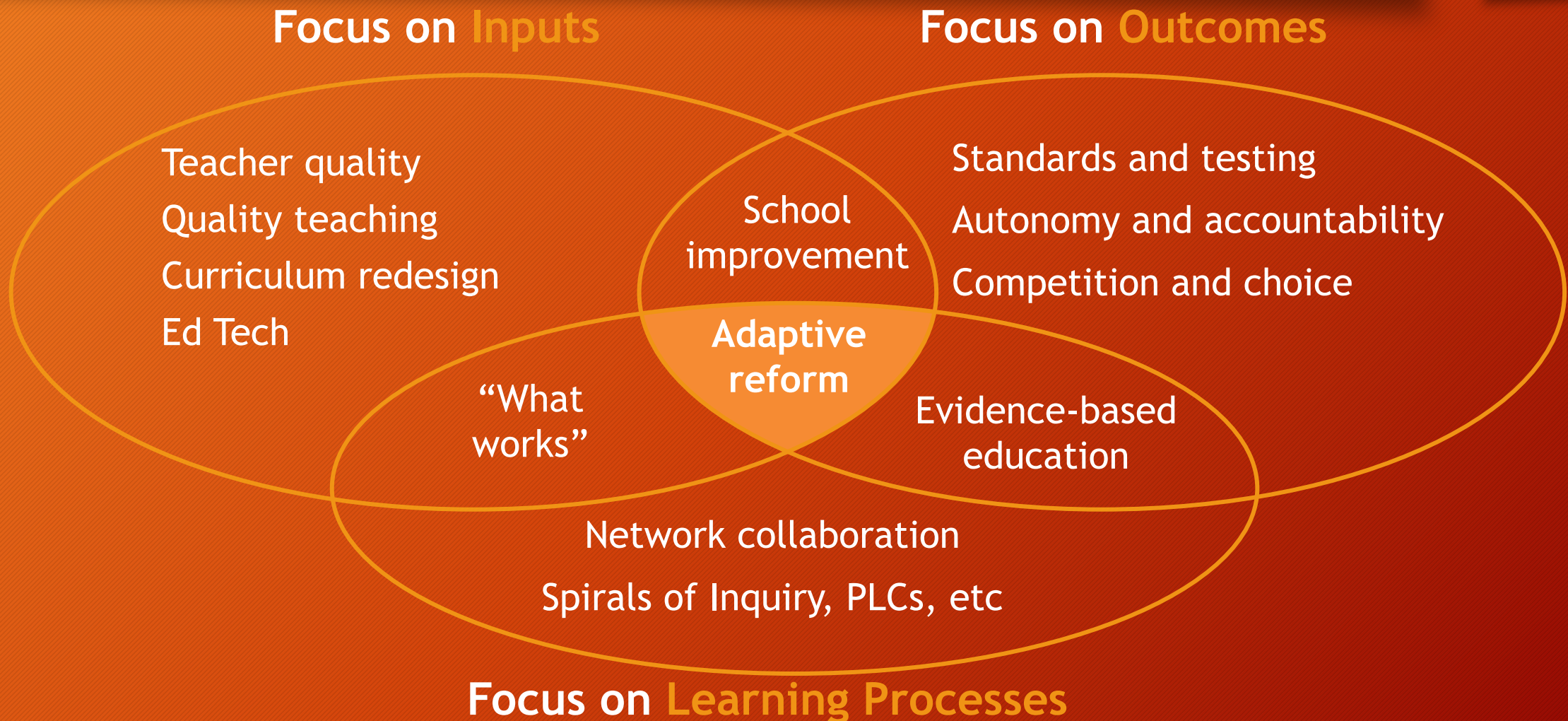


Do not despair. Postcode affects progress much less than achievement

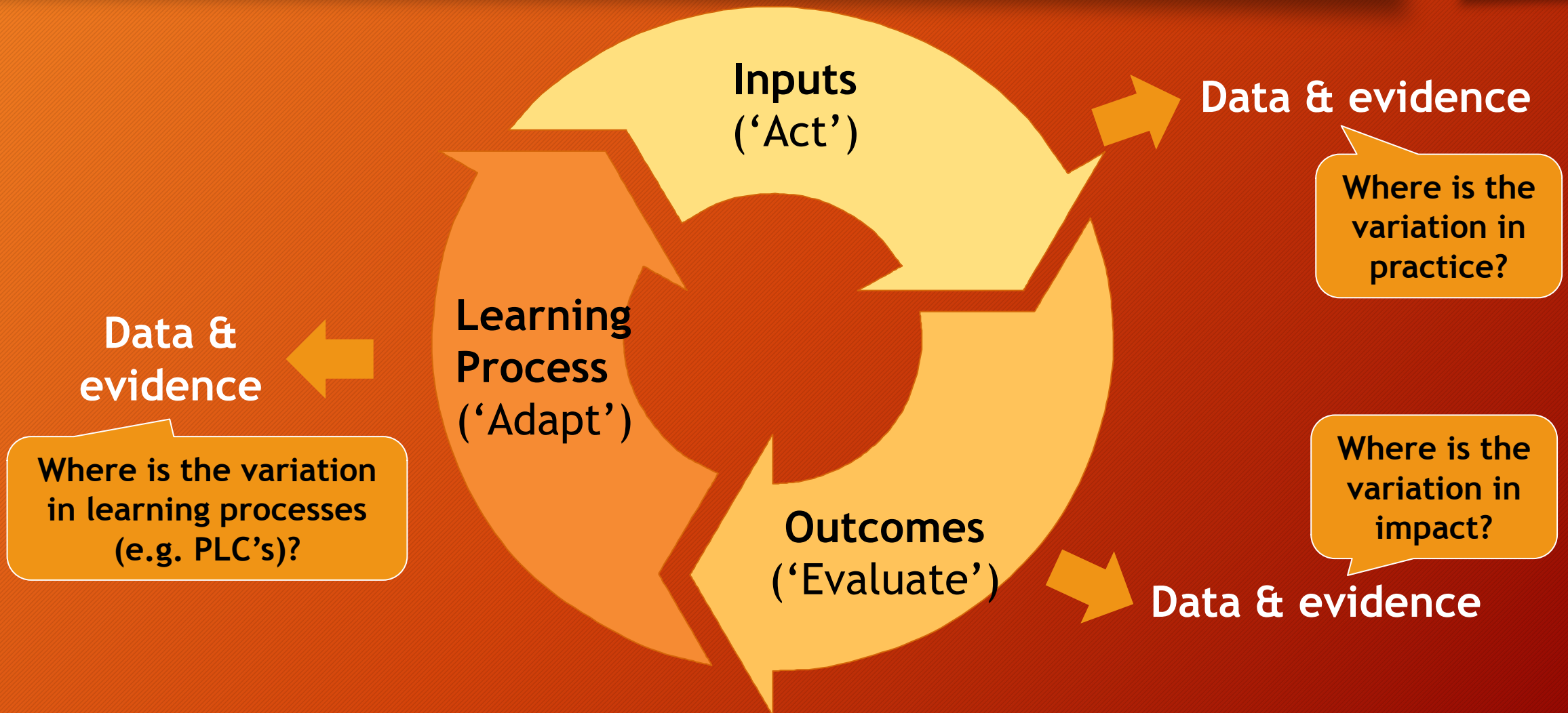
Proportion of school-level variation explained by school factors, per cent



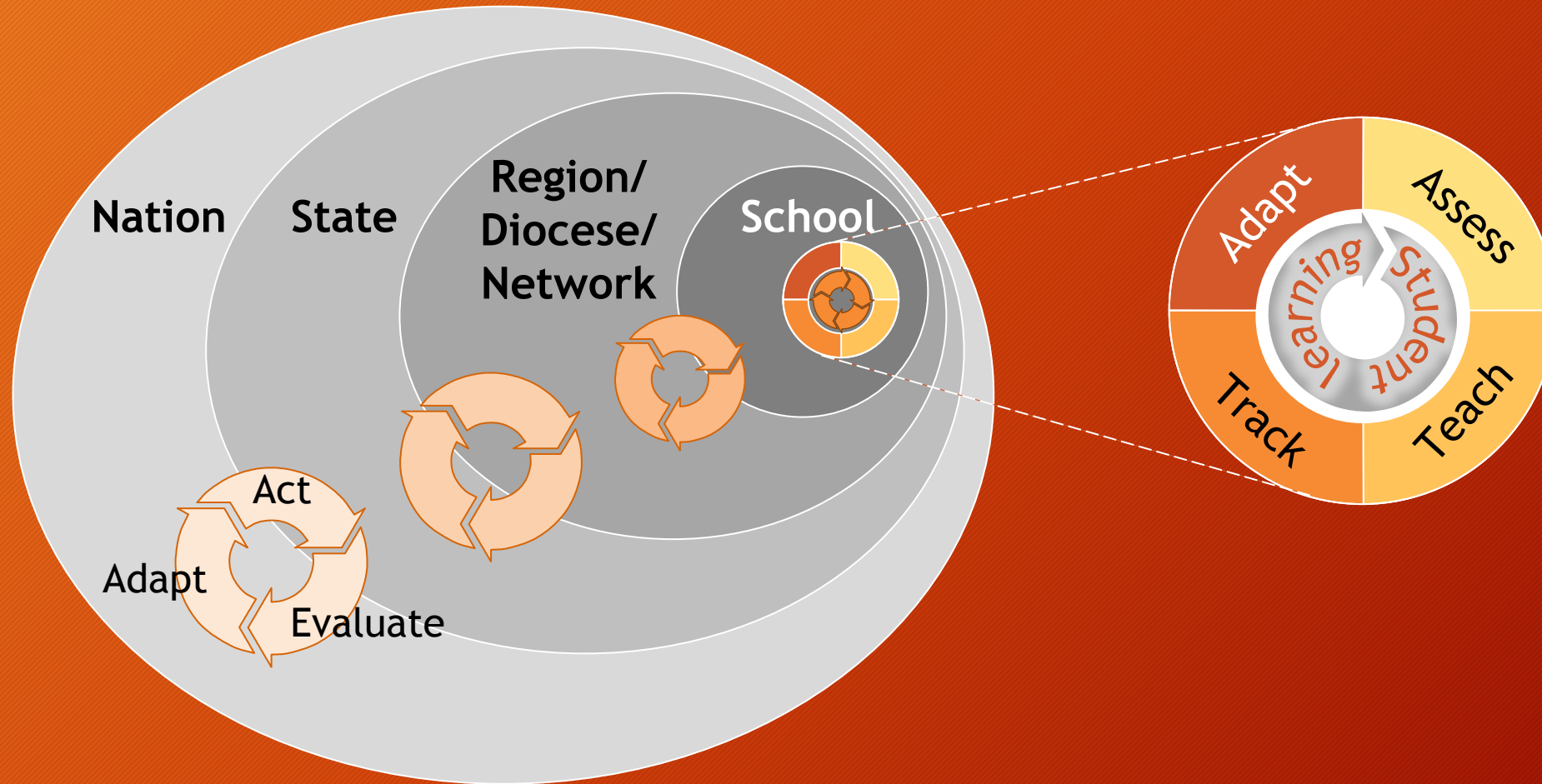
Three main schools of thought on scale-up



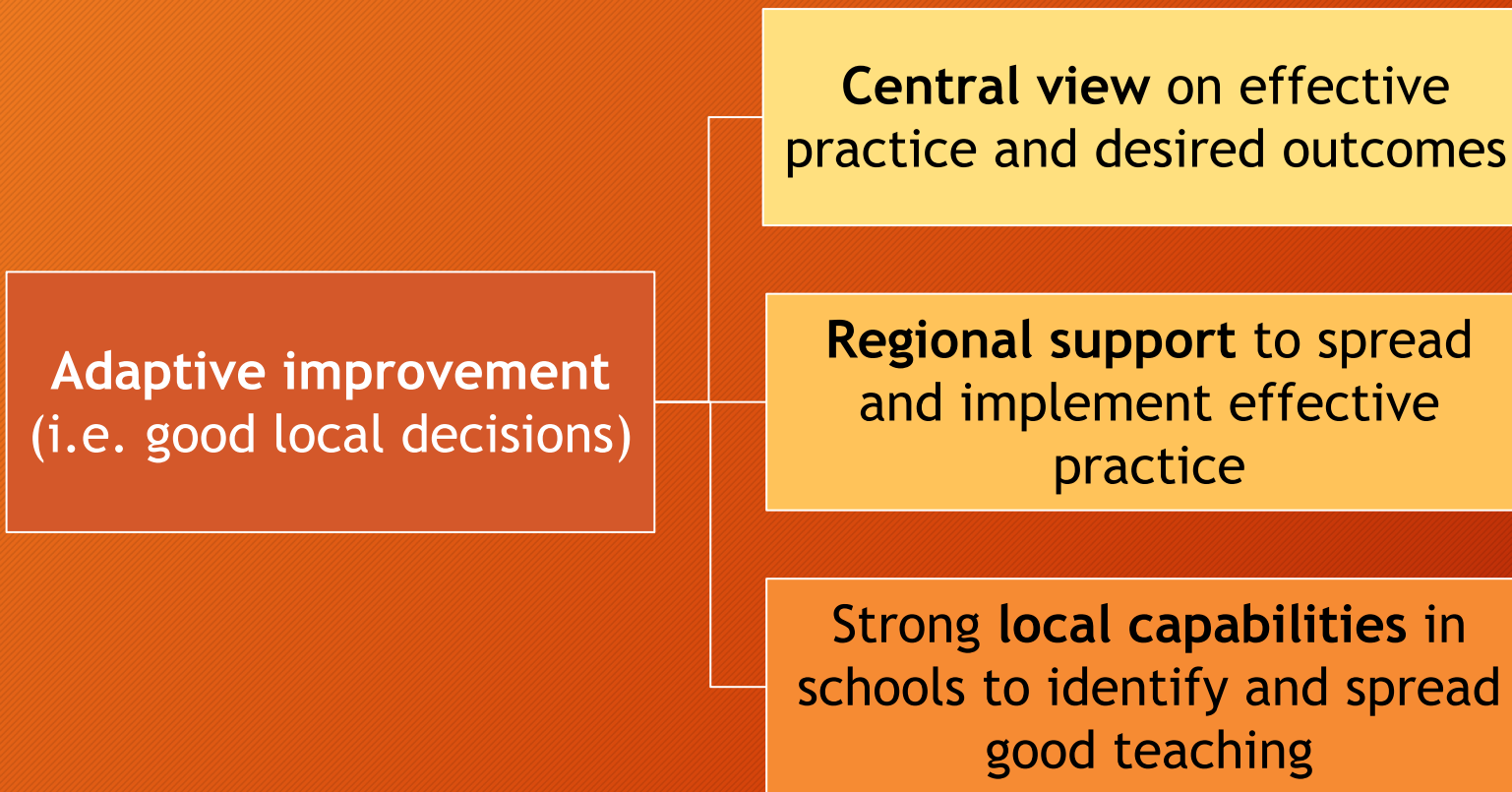
Adaptive reform incorporates all steps



System learning must occur at multiple levels



Adaptive system improvement relies on multiple levels of capability



Data is more rigorous



Data is more relevant

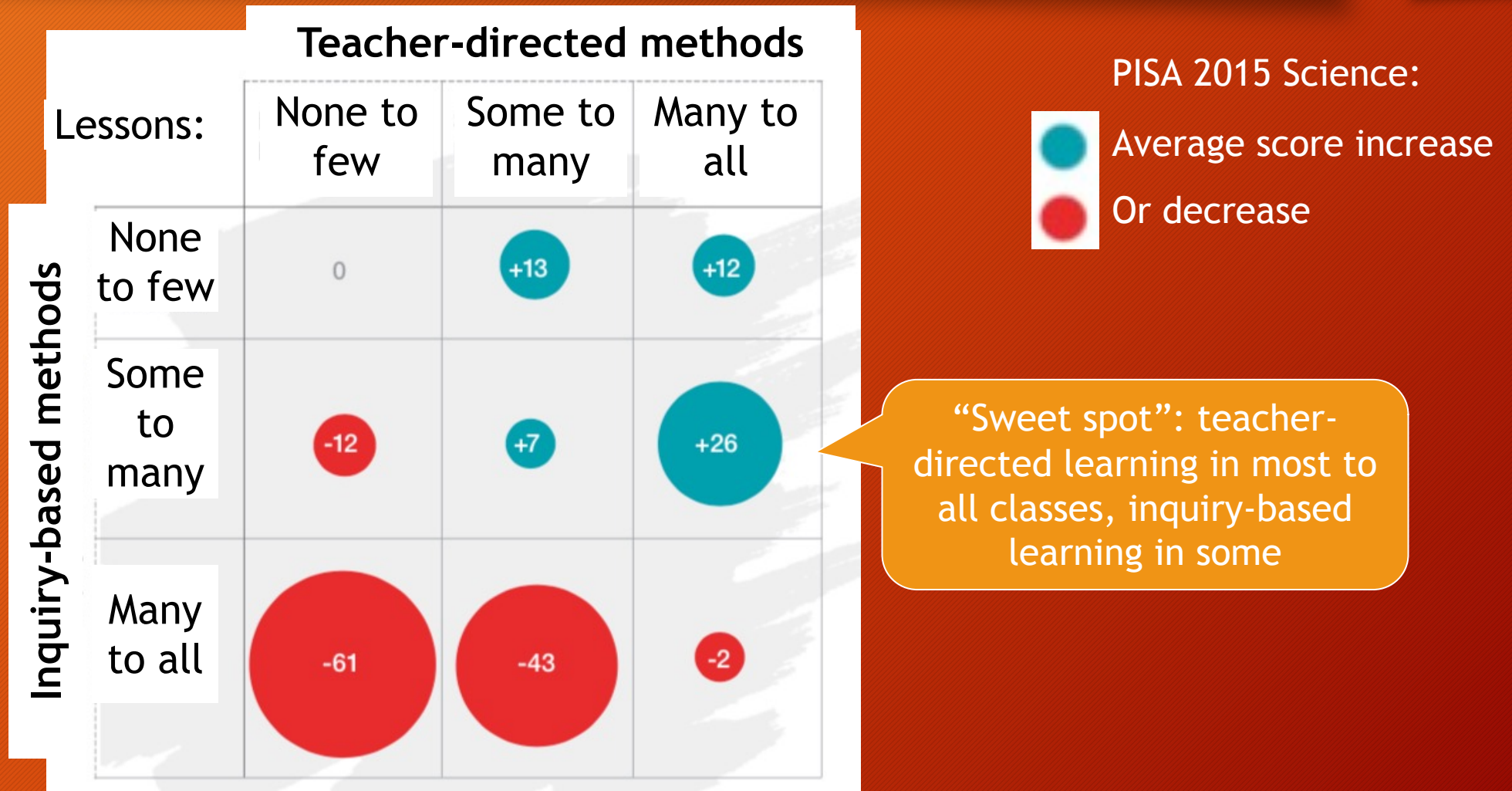
Reflection and table discussion (5 minutes)

What existing piece of data could your school make much better use of?

If you had a magic wand, what piece of data would you want to have for every student, teacher or school?

2: Using data to improve learning

Big data is powerful



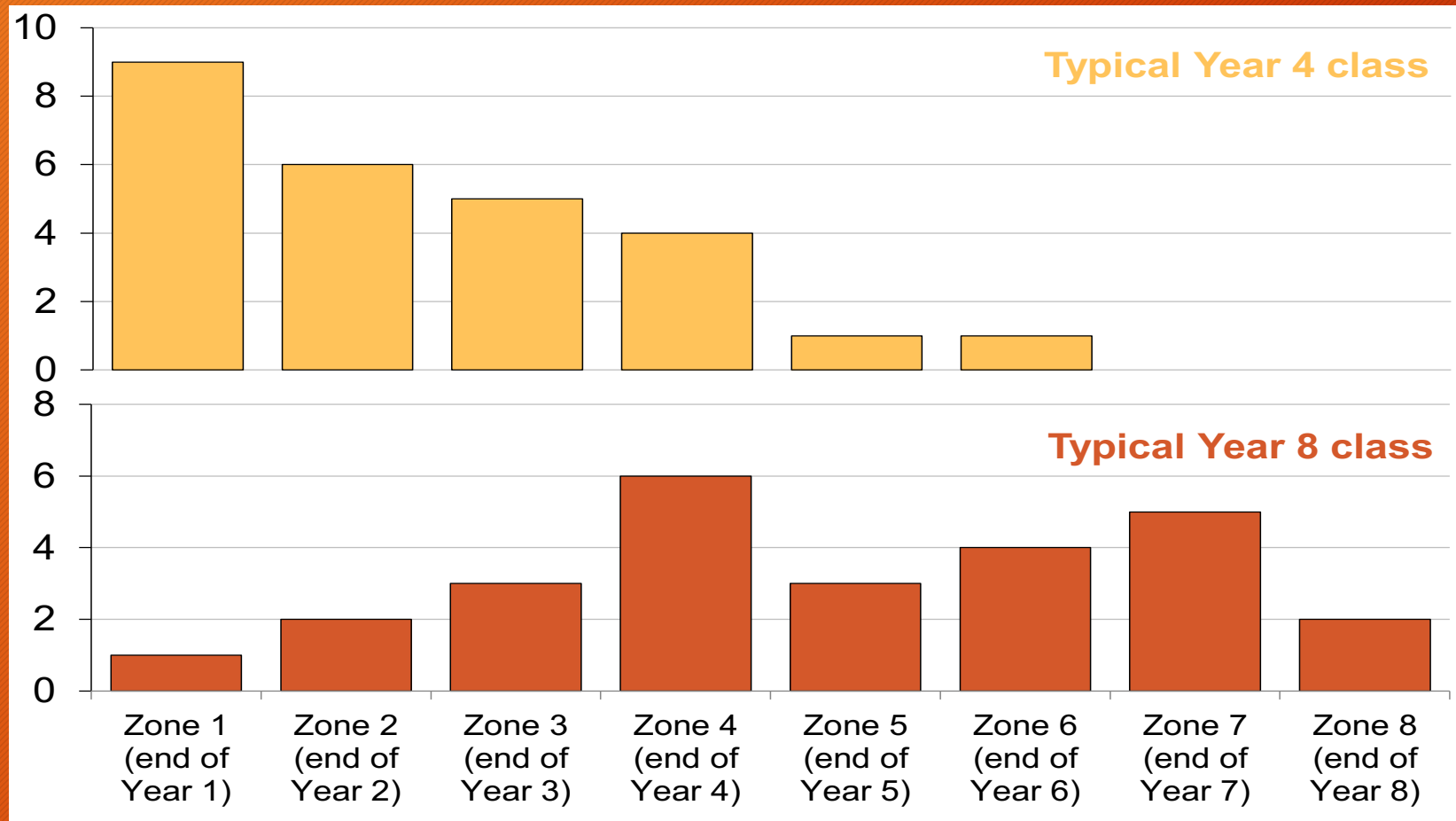
... but small data drives learning



-  Year 6 students
-  Year 5 students
-  Year 4 students
-  Year 3 students
-  Year 2 students
-  Year 1 students
-  Prep students

There is a huge spread of achievement in our classrooms

Number of students in a typical class at different achievement levels



Yet learning needs are individual

“If I had to reduce all of educational psychology to just one principle, I would say this: The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.”

- David Paul Ausubel, American Psychologist, 1968

Practice has not caught up to theory & policy

Theory

+

Policy

≠

Practice



Targeted teaching is a feedback loop

4. Adapt our teaching practices to improve next time round

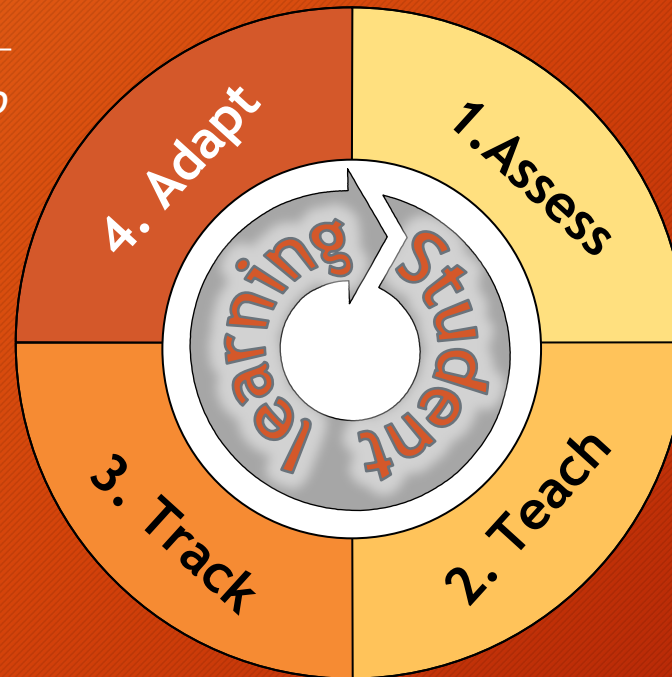
Analyse progress and outcome data to select and refine teaching practice:

- Keep doing what works best
- Improve or stop what doesn't

3. Rigorously track the progress of all our students

Monitor progress of every student to:

- Re-assess their understanding
- Analyse progress vs learning goals
- Support any student who is stalled
- Provide individualised feedback



1. Assess what each of our students knows already

Identify a baseline for every student on an agreed learning progression to:

- Assess current understanding
- Agree appropriate learning goals

2. Target teaching to meet each student's learning needs

Use current achievement data to:

- Plan how to cover the next topic
- Target teaching to address what each student is ready to learn next
- Refine teaching using frequent formative assessment

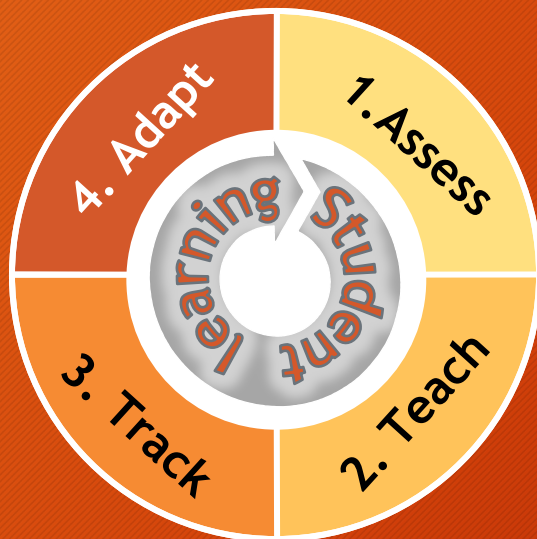
Targeted teaching has two timescales

1. Daily targeted teaching

Focus: how to teach the next lesson/unit

Example questions:

- What do students know now?
- What do they need to learn next?
- Has any student stalled? And if so, what should we do to support them?



2. Improve future teaching practice

Focus: effectiveness of teaching practice

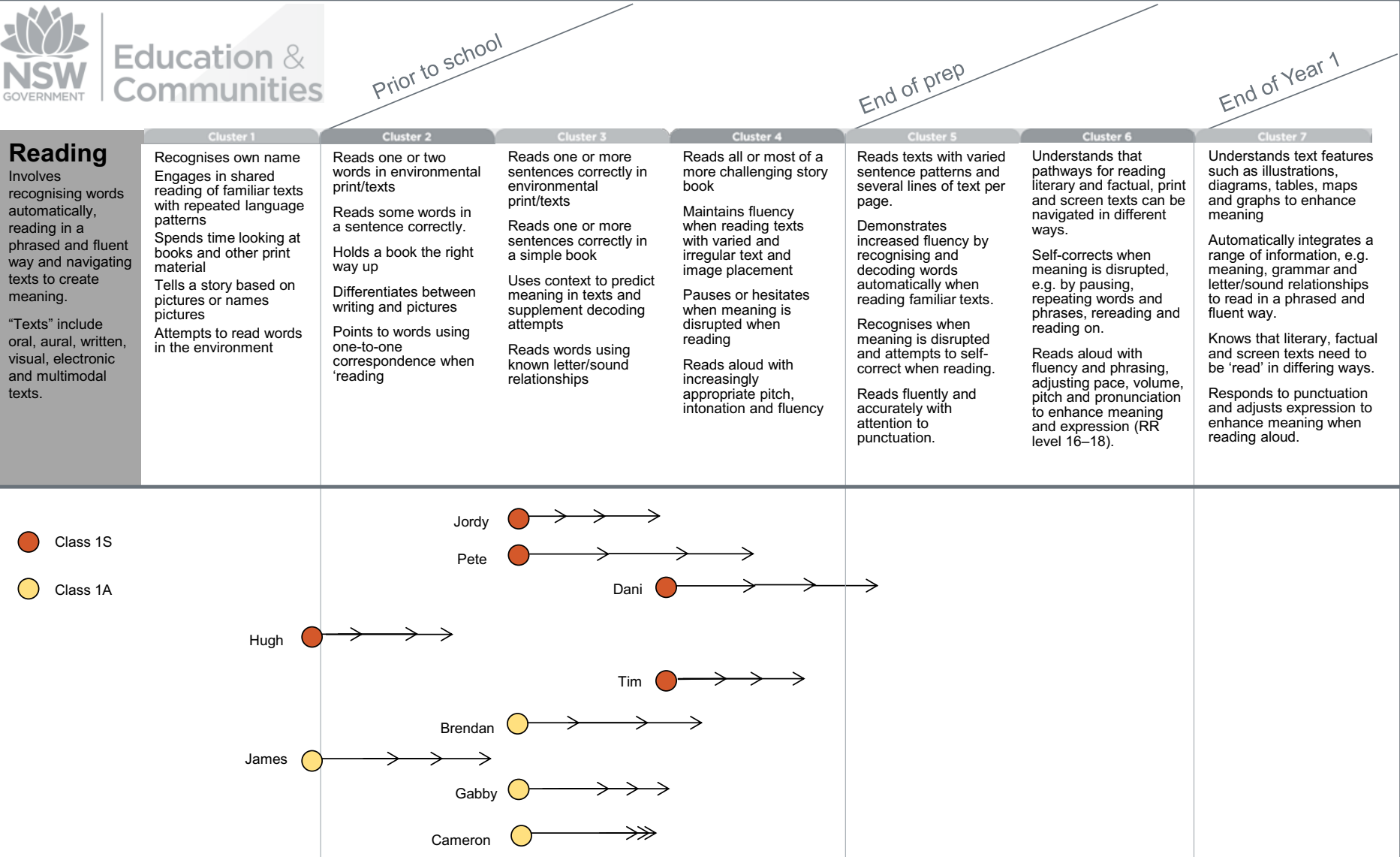
Example questions:

- How much did students learn?
- What teaching practices were linked with stronger (or weaker) student progress?
- What should we do differently next time?

Builds collective teacher efficacy

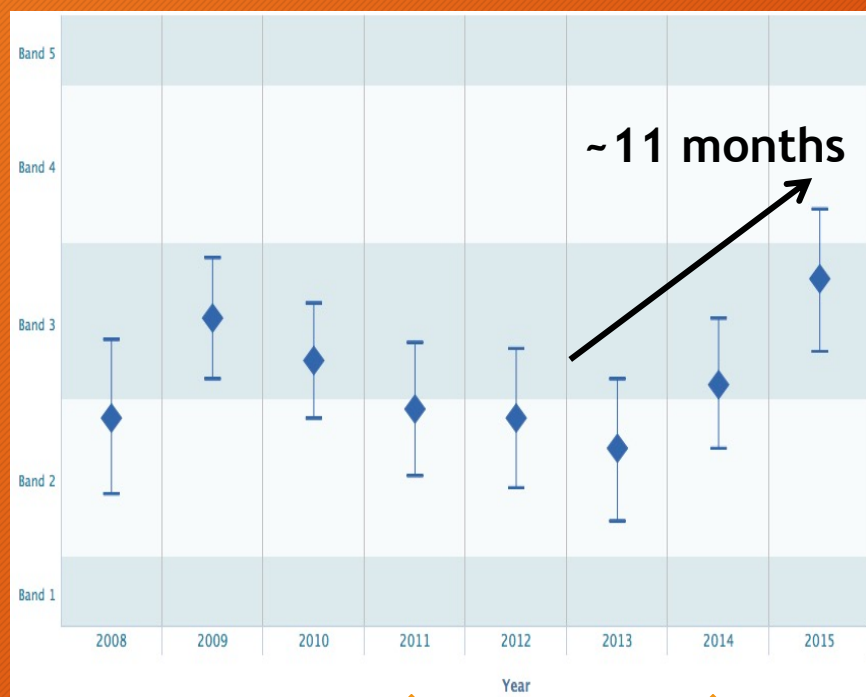


Bright Vale: the NSW literacy continuum



Bright Vale - NAPLAN results

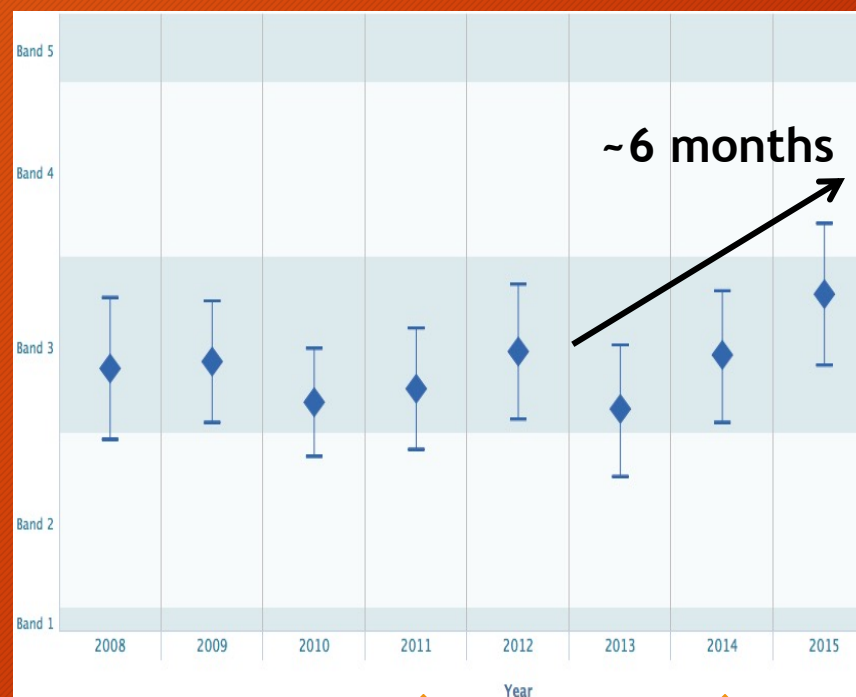
Year 3 Reading



School starts
Early Action
for Success

2011 prep
cohort in Yr3

Year 3 Numeracy



School starts
Early Action
for Success

2011 prep
cohort in Yr3

System support for Bright Vale

Dep't requirements

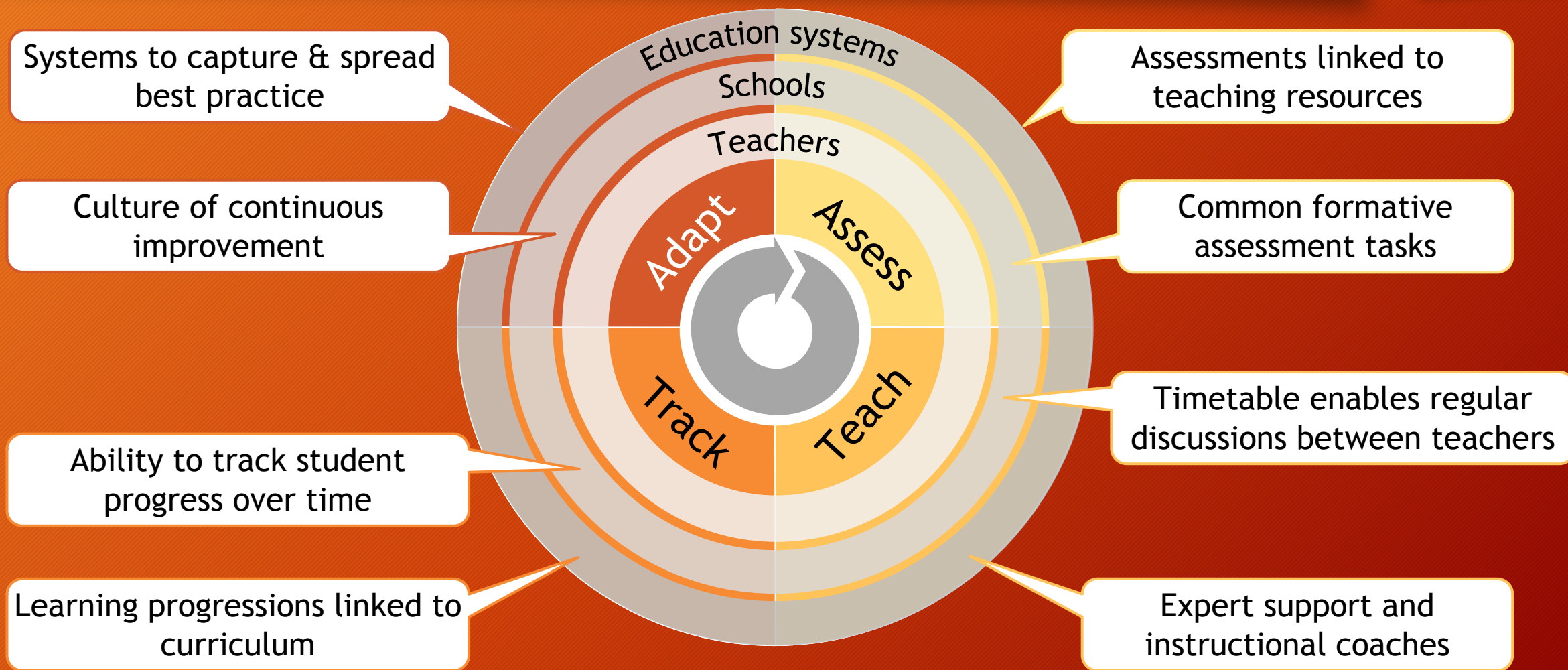
- Use literacy and numeracy continuums to assess learning
- Plot every student's progress every 5 weeks; report data to DEC every 10 weeks
- Use specified pedagogical approaches e.g. Targeted Early Numeracy (TEN)

**Changing
context
changes
behaviour**

Dep't support

- Instructional leaders
- Funding for training
- Additional funding for intensive targeted interventions for struggling students

School and system support is vital

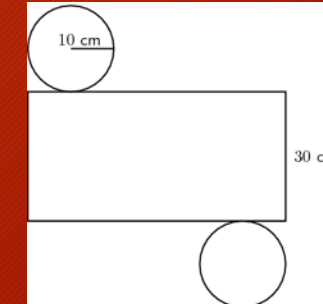
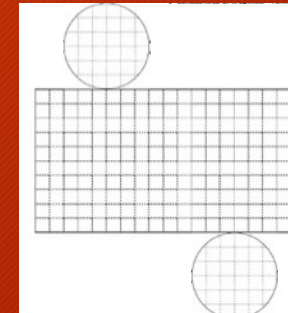
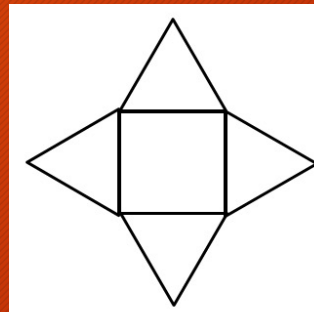
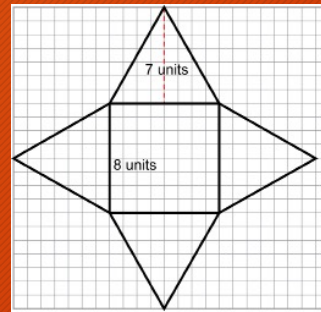
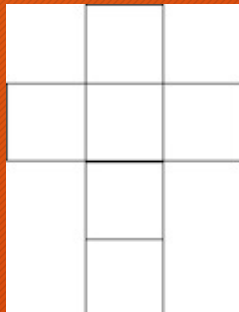
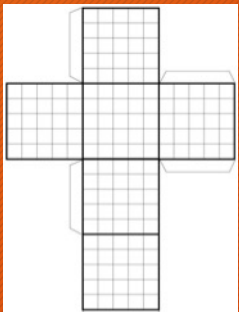


Data isn't always the answer: Big Sky College - middle years mathematics

Fortnightly schedule -four fifty-minute maths periods per week

	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Week 1	Scaffolding numeracy	Differentiated lesson	Differentiated lesson	Reciprocal teaching
Week 2	Scaffolding numeracy	Differentiated lesson	Differentiated lesson	ICT

Each differentiated lesson uses
pre-prepared materials that cover ~6 grade levels



Some other tips and tricks

	Who?	What?	How might it help you?
Build your own learning continua	Start-From-Scratch Primary* (Vic)	Spend two years creating literacy and numeracy continua 'to build ownership'	Use what is already there... then make it your own
"The Toby test"	Camberwell South Primary (Vic)	Grade a pre-moderated piece of writing across whole primary school	Value of collective teacher judgement
Maths Assessment Interview	St Aspire* (NSW)	1-on-1 tests at the start of a year - using all the educators at hand	Share the data load
Dedicated writing classes	Samford State School (Qld)	Rearrange the timetable to get a 5:1 teacher ratio once per week	Personalised attention without 'data' per se
On-demand tests	Big Sky College* (Vic)	Cross-check their analysis of student progress against a standardized test	Confirm where to focus
<i>Tell them from me survey</i>	NSW Department	Link outcomes to teaching practice as perceived by students	Close the feedback loop
"Show me how you taught that"	Ballarat Clarendon College (Vic)	Item analysis of common assessment tasks THEN immediate playback	Close the feedback loop

* Names changed

Reflection and table discussion (5 minutes)

What recent improvement effort has been the most successful in your school?

How did practice, outcomes, or learning change?

3: Making it stick

Improvement is a journey, not a destination



Each cycle should build teacher capability and improve student outcomes

Each successful cycle builds professional responsibility and makes jobs easier

Over time, success builds the adaptive capacity of your whole school

Choosing strategically

Identifying a high-potential area to focus on:

- Are we performing better/worse than expected?
- Are we adding more value than we used to?
- Is there high variation in practice?
- Are we using evidence-based practice?
- Is there high variation in outcomes?

Goal is to maximise near-term impact on student learning

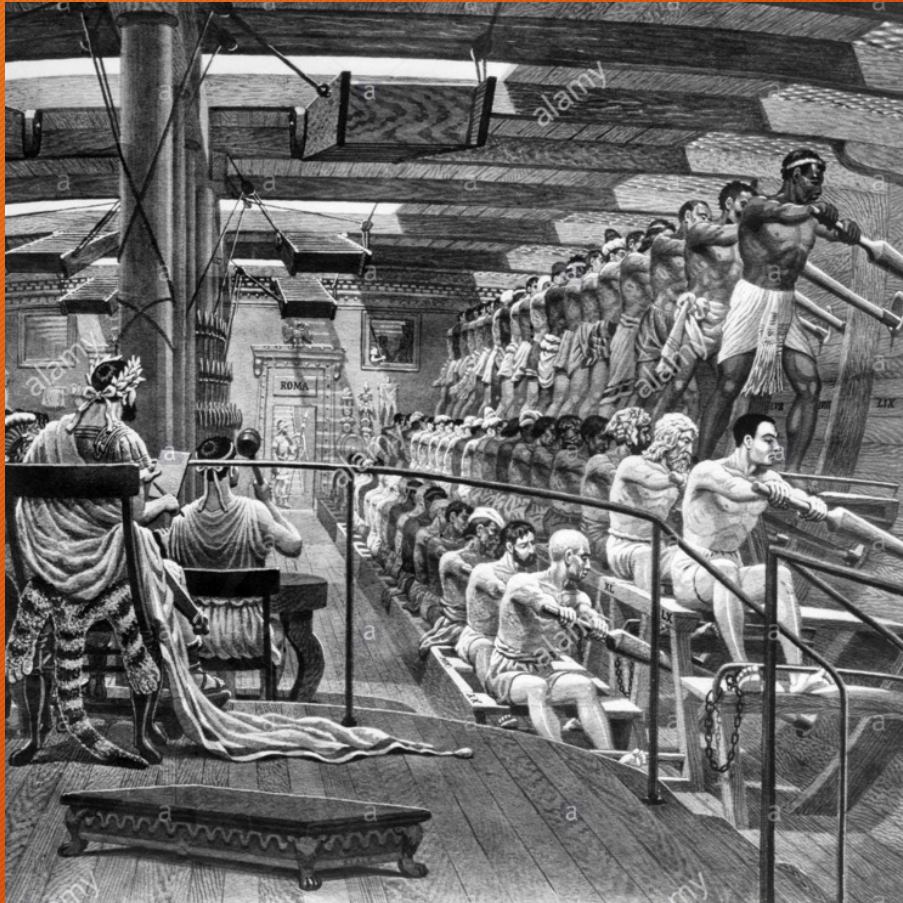
Identifying a good strategic choice:

- Is it big enough to care?
- Can we robustly measure our impact?
- Are teachers open to change in this area?
- Could a change make teachers jobs easier?
- Can we access deep expertise in this area?

Goal is to get key staff to experience the journey of continuous improvement by design, and build professional responsibility

High-potential versus strategic choices

High potential:

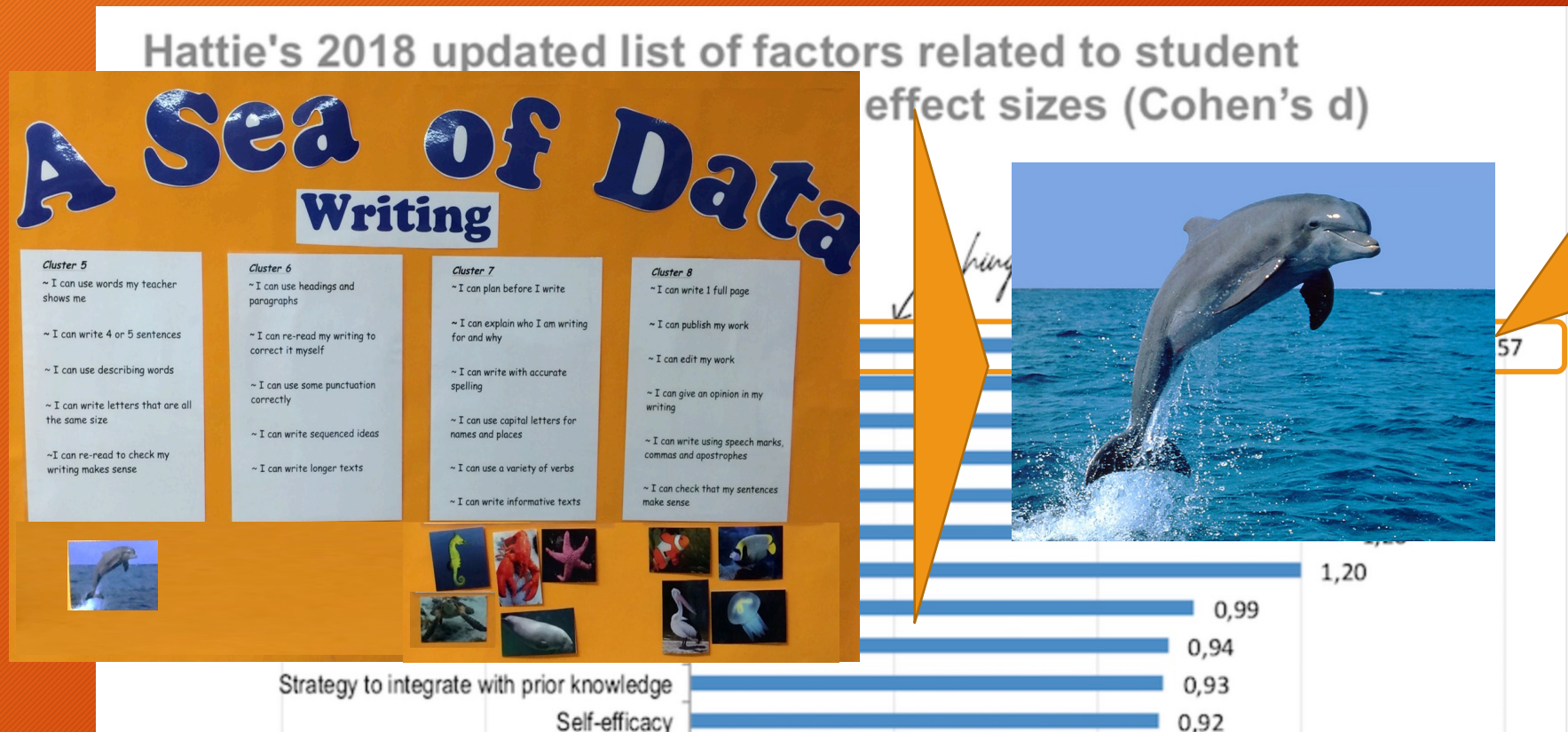


Strategic:



What I would measure with my magic wand: collective teacher efficacy

Collective Teacher Efficacy is the collective belief of teachers in their ability to positively affect students.



Bright Vale teachers:

“For the first time ever we can measure our impact on our students”

“We feel more accountable... to our students, their parents, and each other”

Building collective teacher efficacy

Collective efficacy is easy to sell:
“When teachers believe, students achieve”

But *beliefs* in collective abilities are not sufficient



REVIEW ARTICLE

<https://doi.org/10.1057/s41599-019-0381-z>

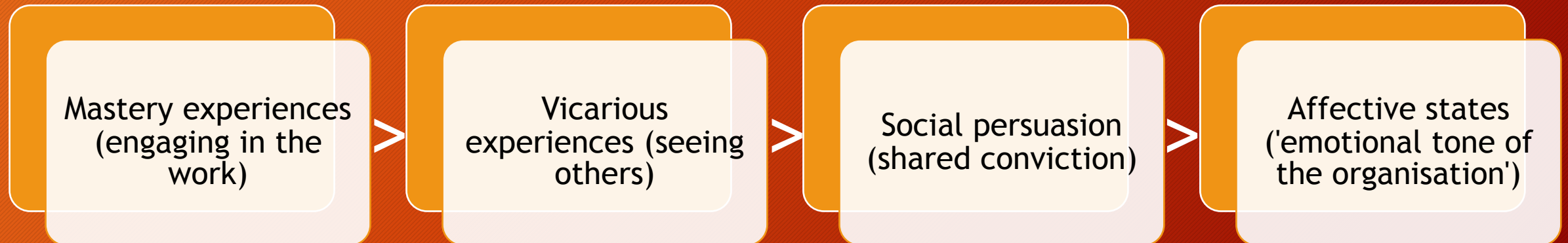
OPEN

Collective efficacy: toward a new narrative of its development and role in achievement

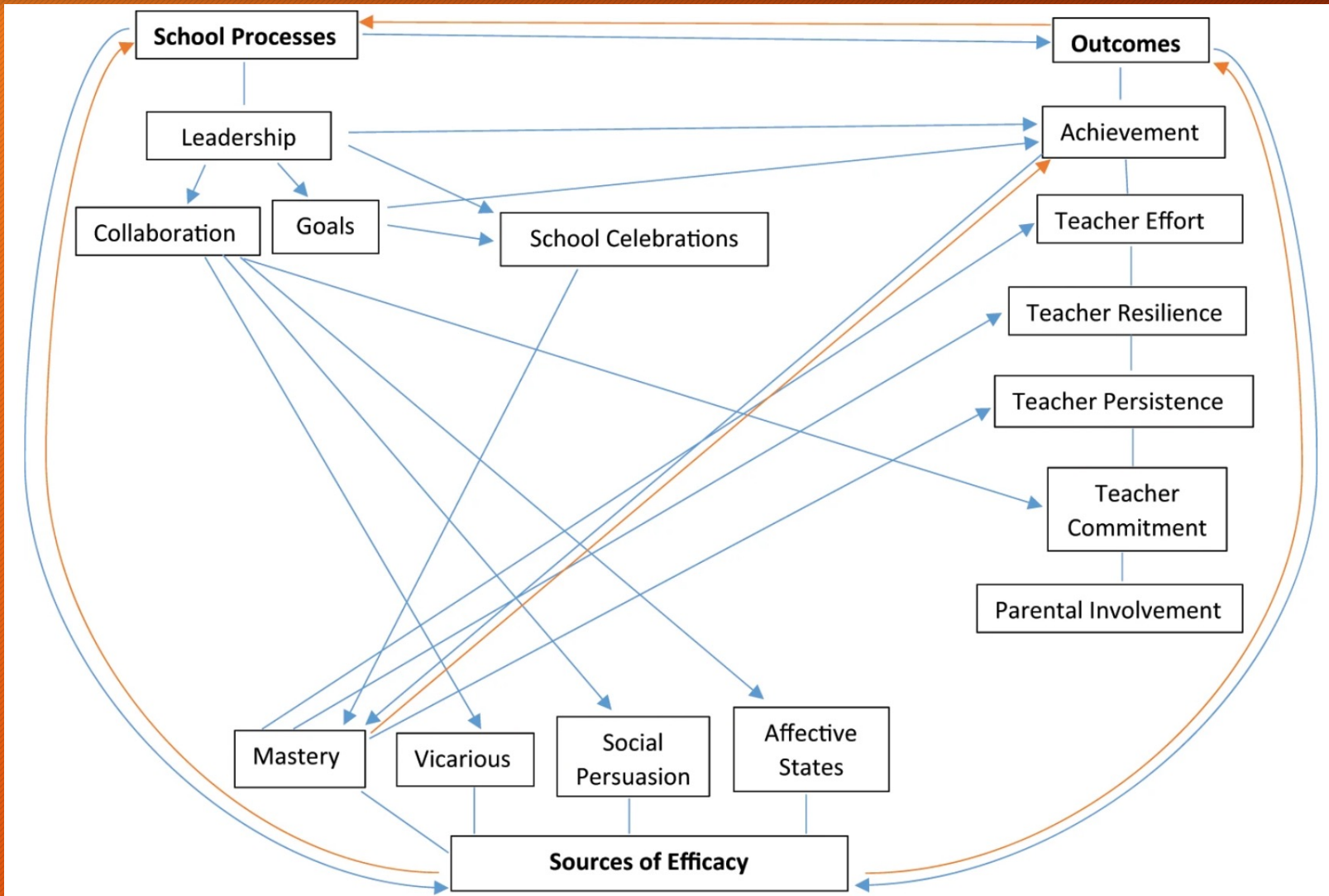
T.J. Hoogsteen^{1*}

PEALE

The international bestseller by
the father of positive thinking



It's not about 'building collective efficacy'; do the right things and reap the benefit



Source: Hoogsteen (2020) Figure 2

Goal setting + Collaboration + Goal monitoring
+ *Celebration* = *Mastery* = *Collective efficacy*

Reflection and table discussion (5 minutes)

How is the collective efficacy in your school?

- Low? Tread gently
- Medium? Share vicarious experience
- High? Hit the gas!

Be honest!
What is your
evidence?

Given this, is your current focus around data the best strategic choice?

Questions