

Why an adaptive education system relies on our most expert teachers

NSW HALT forum, 27 June 2018

Peter Goss, School Education Program Director

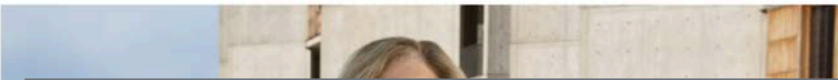


@peter_goss

What on earth is happening in our schools?

True Leaders 2017: Nobel laureate Elizabeth Blackburn, Salk Institute

Boss Oct 12 2017 at 9:00 PM Updated Oct 12 2017 at 9:00 PM



Eddie Woo named 'among world's top 10 teachers'



Australia's 'tolerance of failure' behind declining PISA results, says test co-ordinator

Education basics have been replaced by trendy fads

Inequality in Australian schools costs the country \$20 billion: report

Our brightest kids are being left to fend for themselves

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**

A story from the classroom

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


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Cluster 7

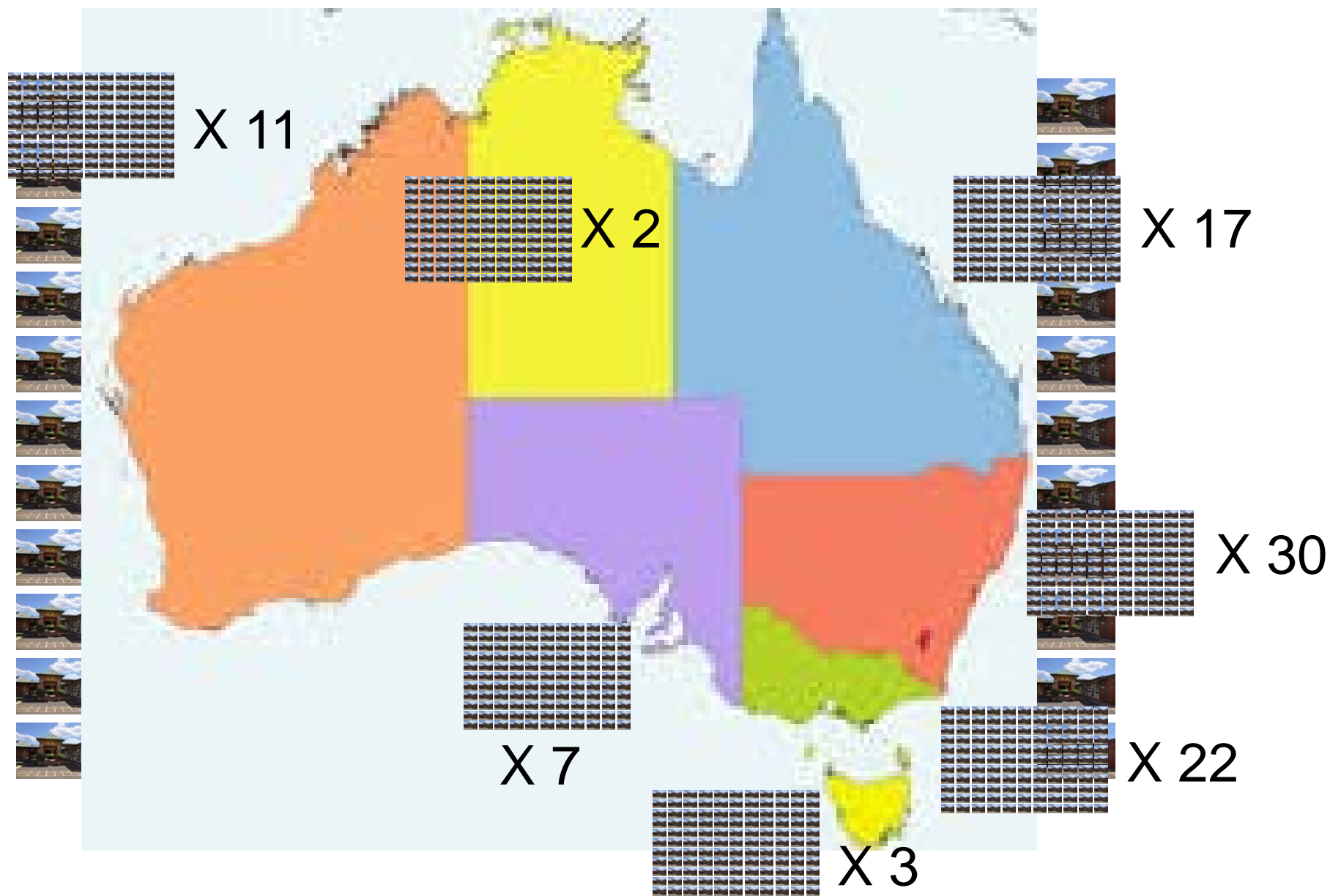
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- ~ I can edit my work
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But how do we do this at scale?



Compare the pair

Healthcare

22 million Australians

**11 GP visits per year,
say 20 minutes per visit**

**Total patient time:
~ 1,000 person-years**

School education

3.8 million students

**1,000 hours of school
(6 hours x 5 days x 40 weeks)**

**Total student time:
~ 600,000 person-years**

Yet we want learning to be personalised.

How are we doing today?

Why an adaptive system would be better

Towards an Adaptive Education System

Making the most of our most expert teachers

The usual messages...

Money spent ... up

Students completing Year 12 ... up

PISA results ... down

NAPLAN results ... flat

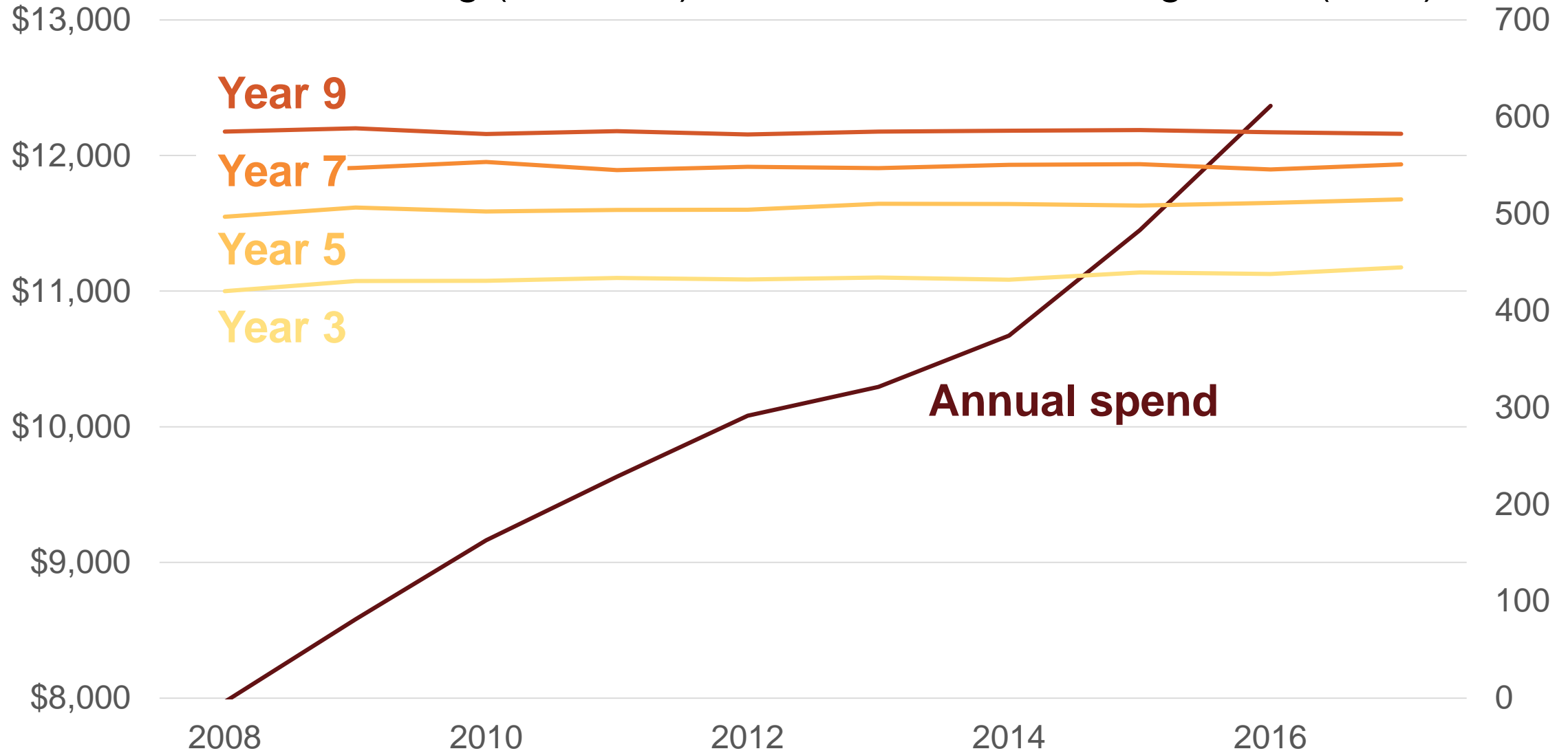
Impact of socio-economic disadvantage ... little change

Indigenous student results ... appalling

Lies, damn lies or statistics?

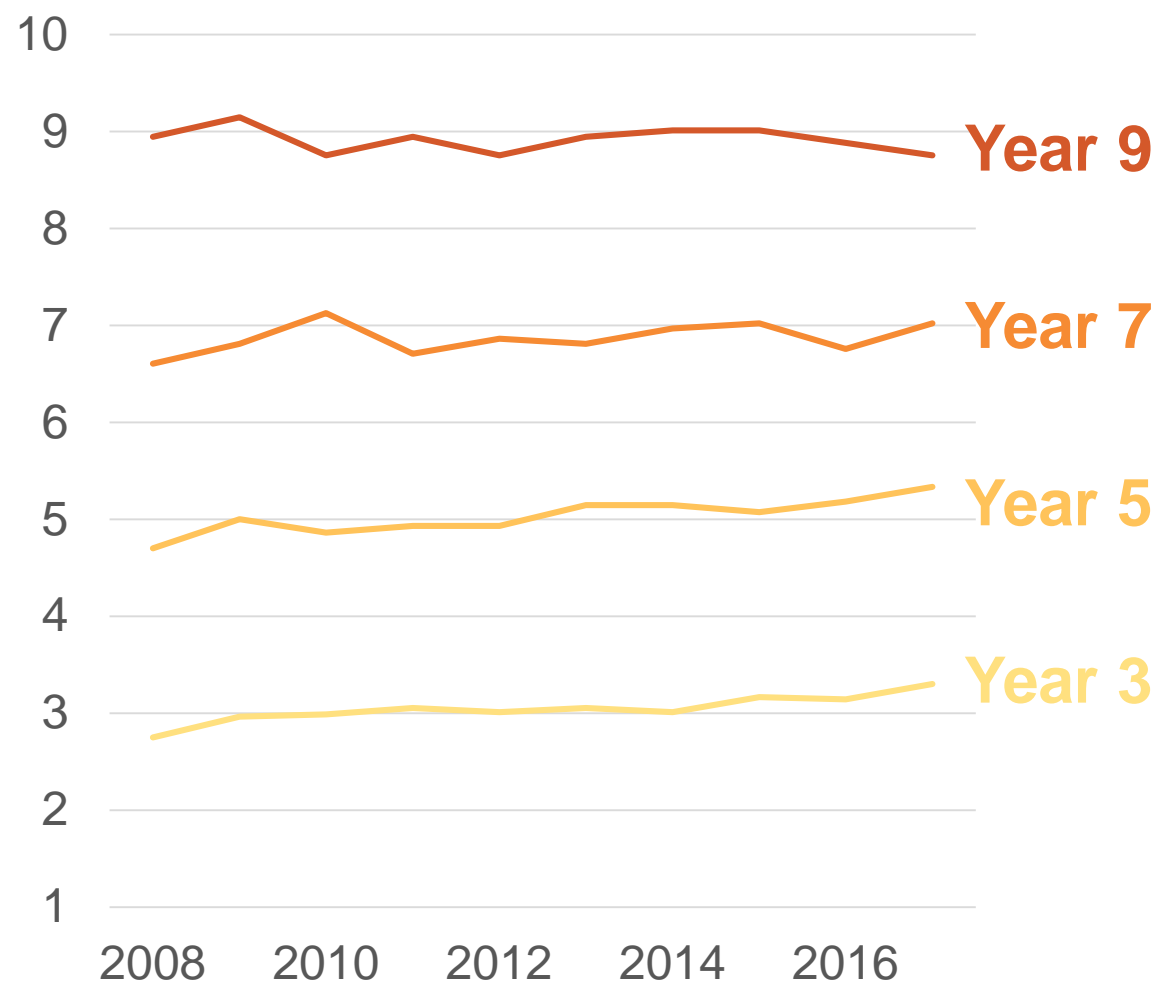
How the story is often told...

Victorian school funding (LHS, \$m) versus NAPLAN reading score (RHS)

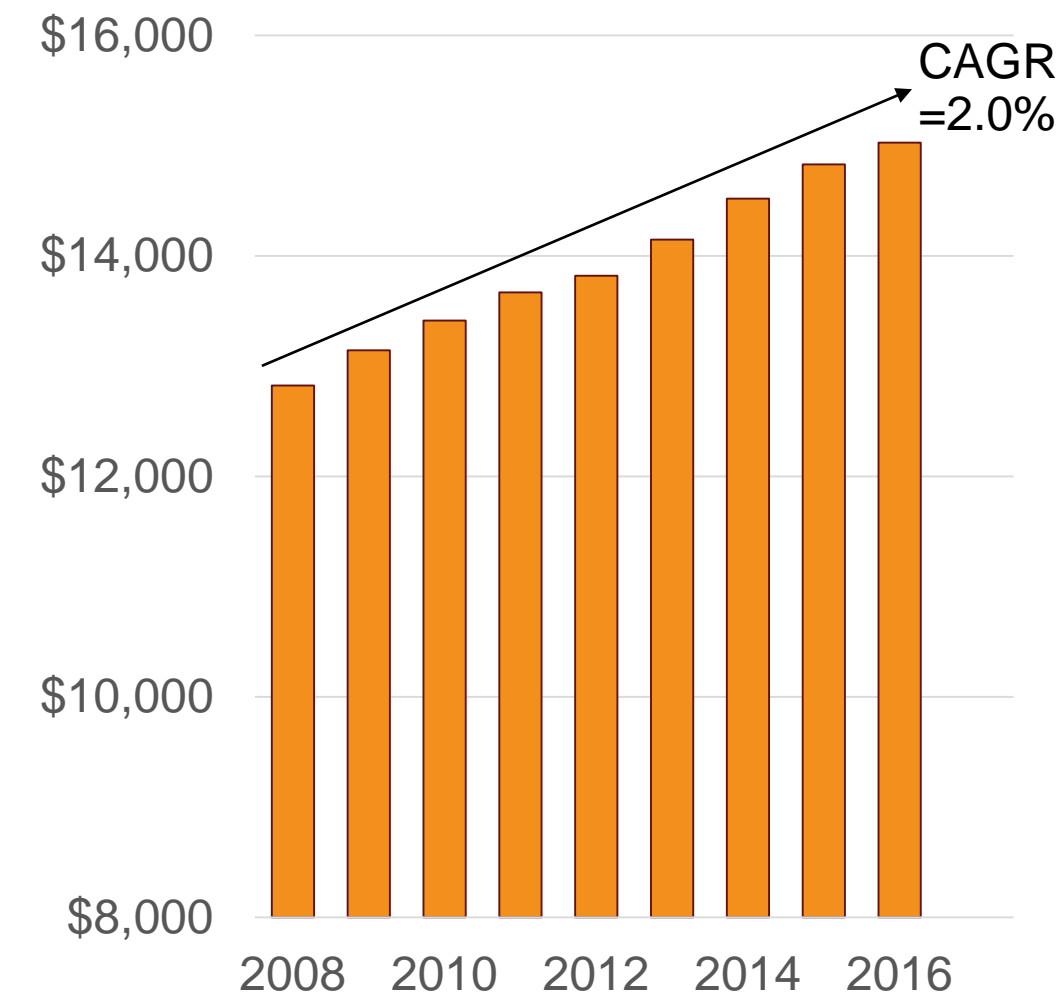


... versus a less manipulative presentation

Victorian NAPLAN reading results
Equivalent Years of Learning

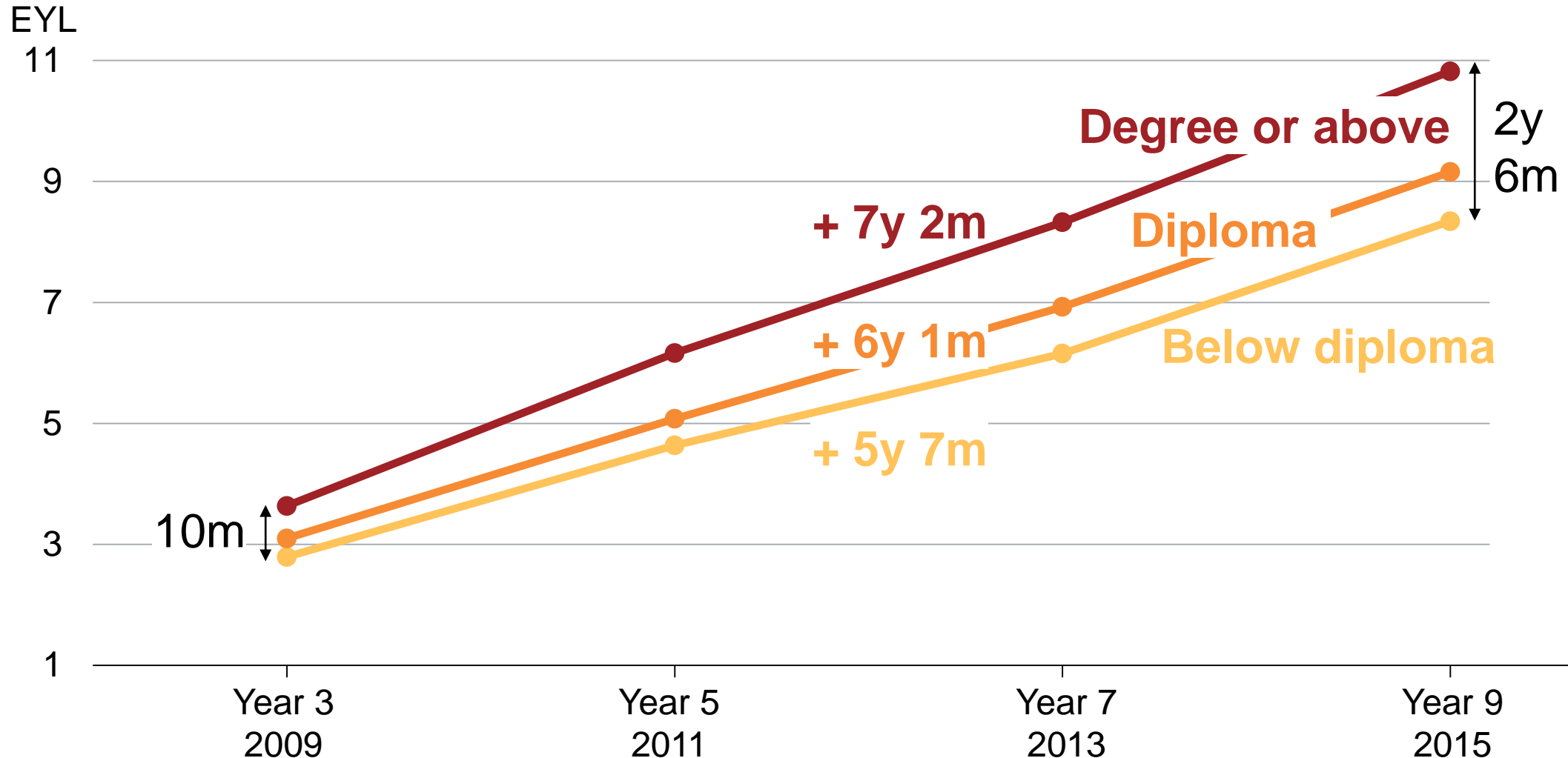


Victorian school education funding
\$ per student



Parental education really matters

Progress of student cohorts by parental education



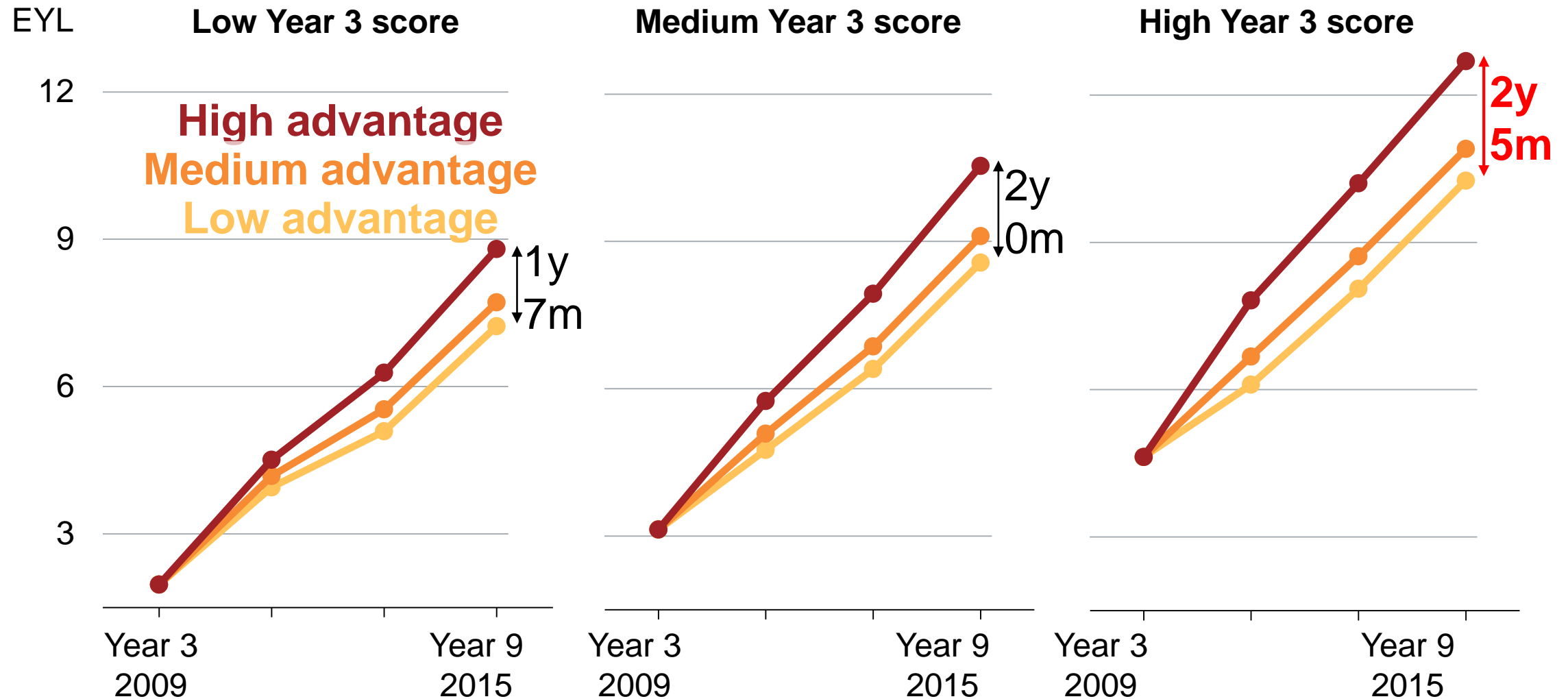
Notes. Data is for numeracy, median of all Victorian students, 2009-15 cohort. EYL: Equivalent Year Level

Highest level of parental education is a proxy for socio-economic status.

Source: Widening gaps, Grattan Institute, Figure 10

Bright kids in poor schools lose the most

Average progress by level of school advantage

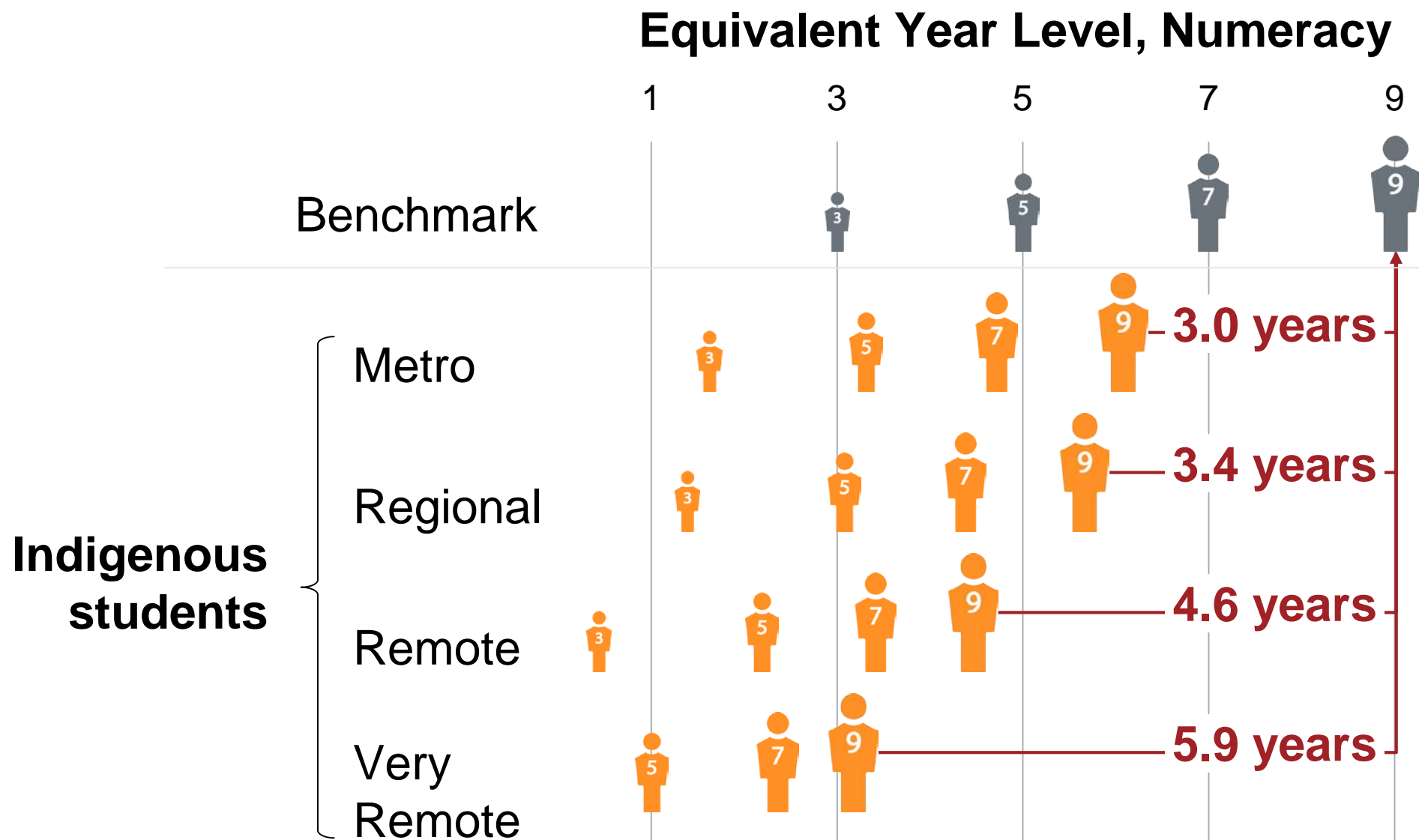


Notes. Data is for numeracy, all Victorian students, 2009-15 cohort, by school ICSEA (bottom quartile, middle two quartiles, top quartile).

Low, medium and high achievers are students who scored at the 20th, 50th and 80th percentile in Year 3. EYL: Equivalent Year Level.

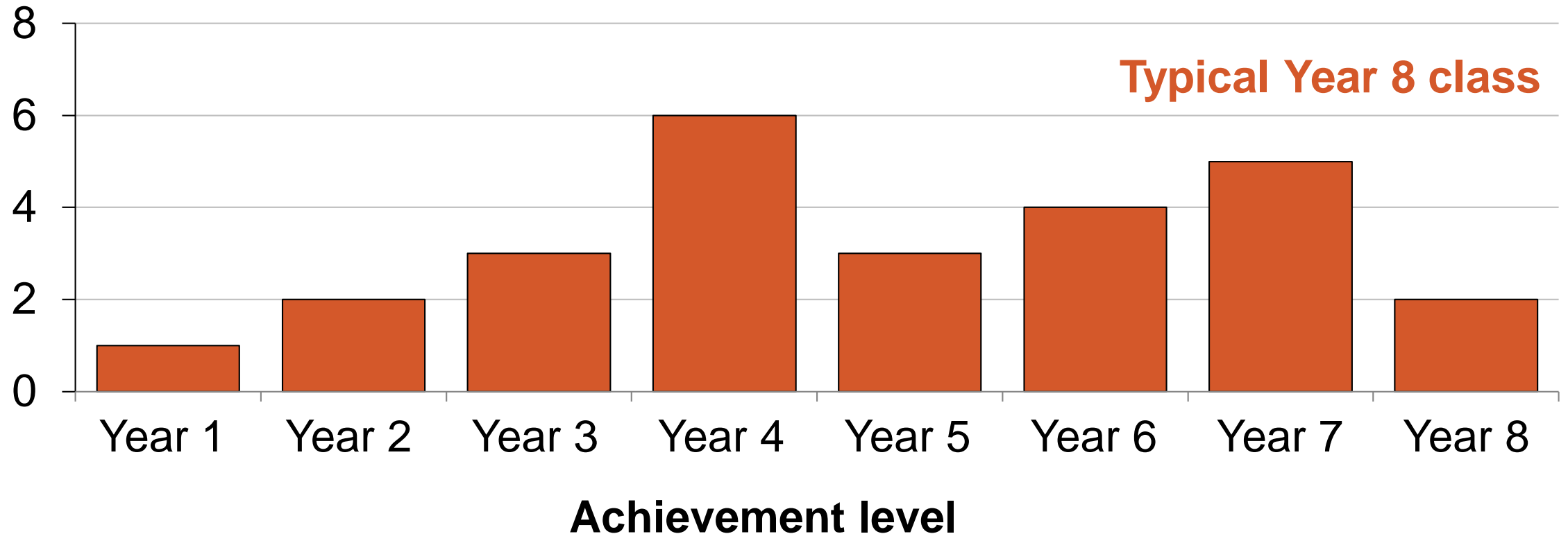
Source: Widening gaps, Grattan Institute, Figure 14

Indigenous gaps are genuinely huge



Gaps are also huge within each class

Number of students



Three axioms:

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

One goal:

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

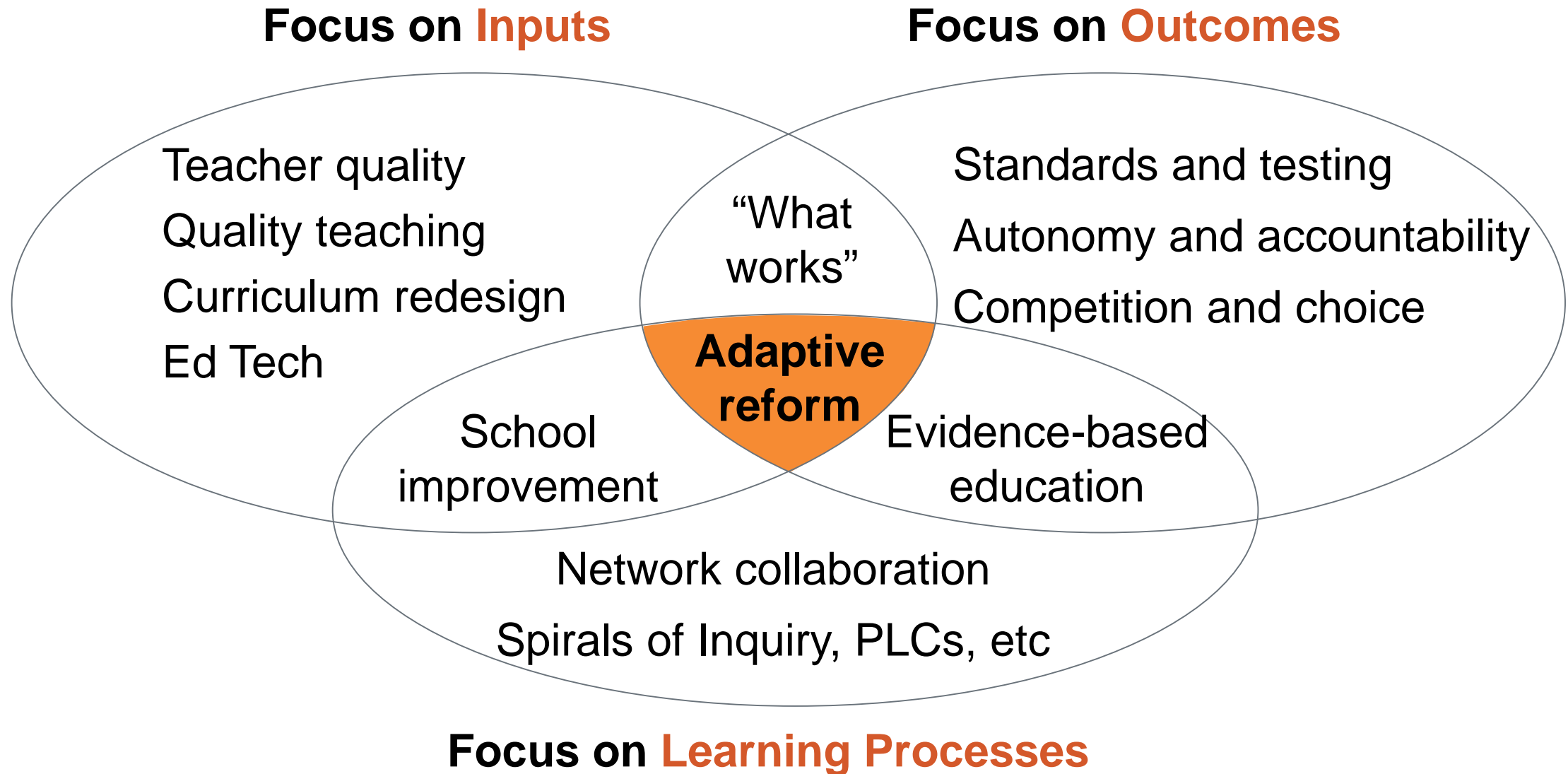
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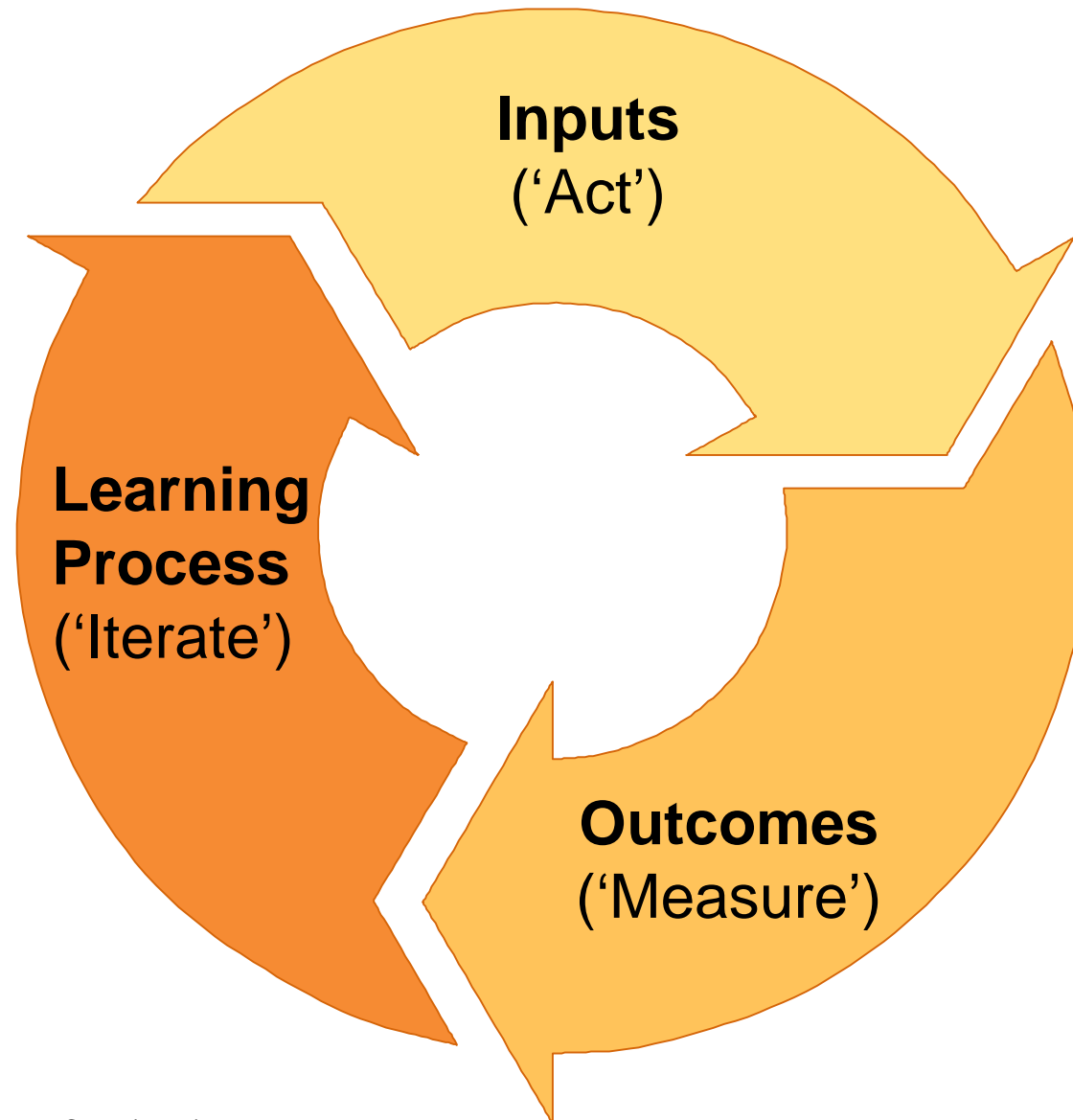
Towards an Adaptive Education System

Making the most of our most expert teachers

Three main schools of thought

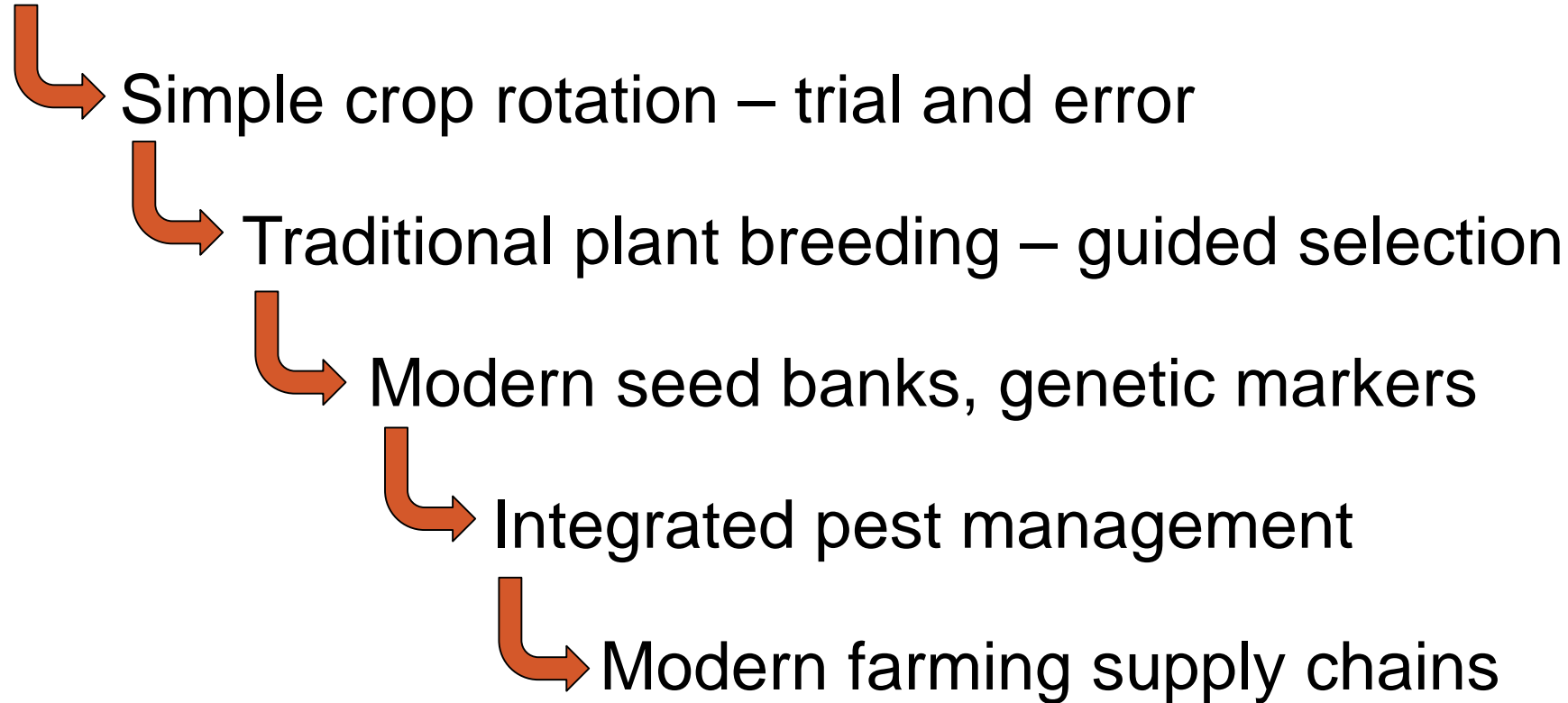


Adaptive reform incorporates all three steps



What does it mean to be an adaptive system?

Pre-adaptive farming – natural selection



**Increasingly deliberate selection in
an increasingly integrated way;
information outweighs infrastructure**

Improvement by design, not by chance

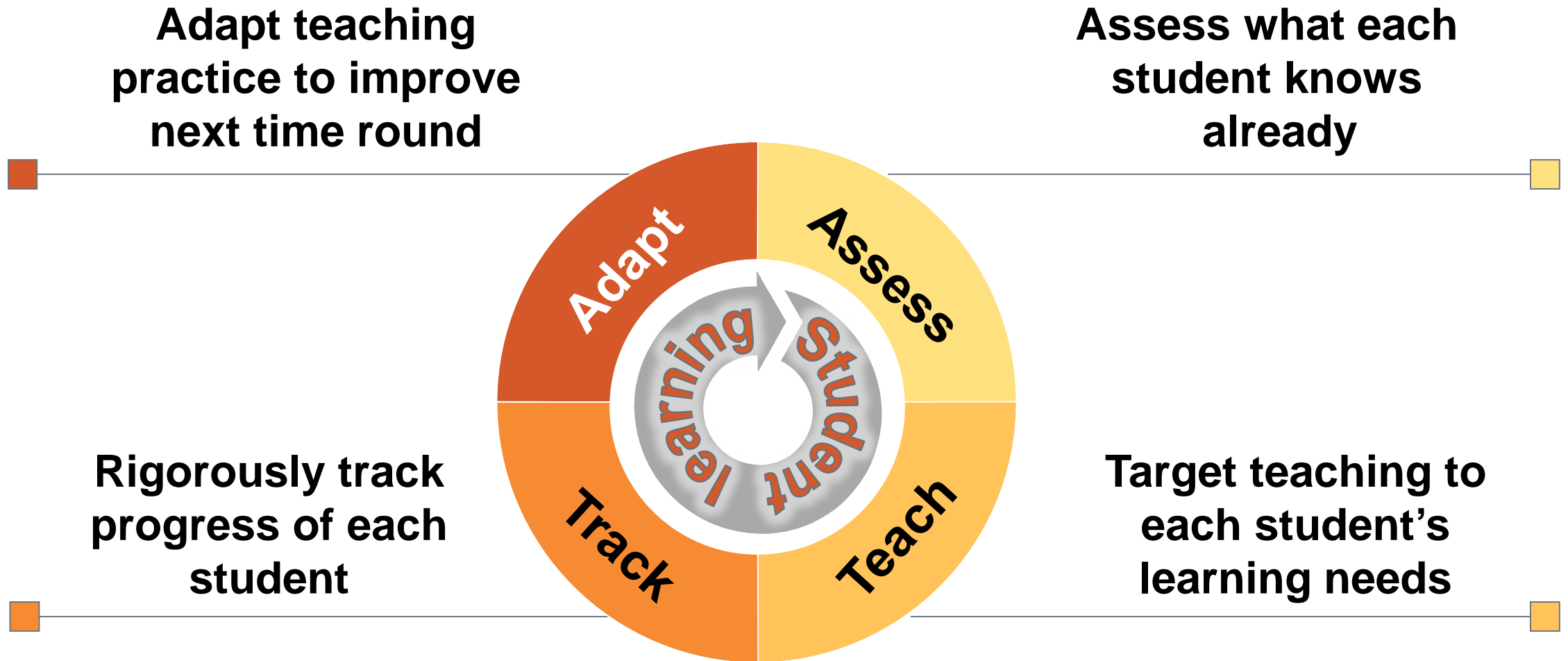
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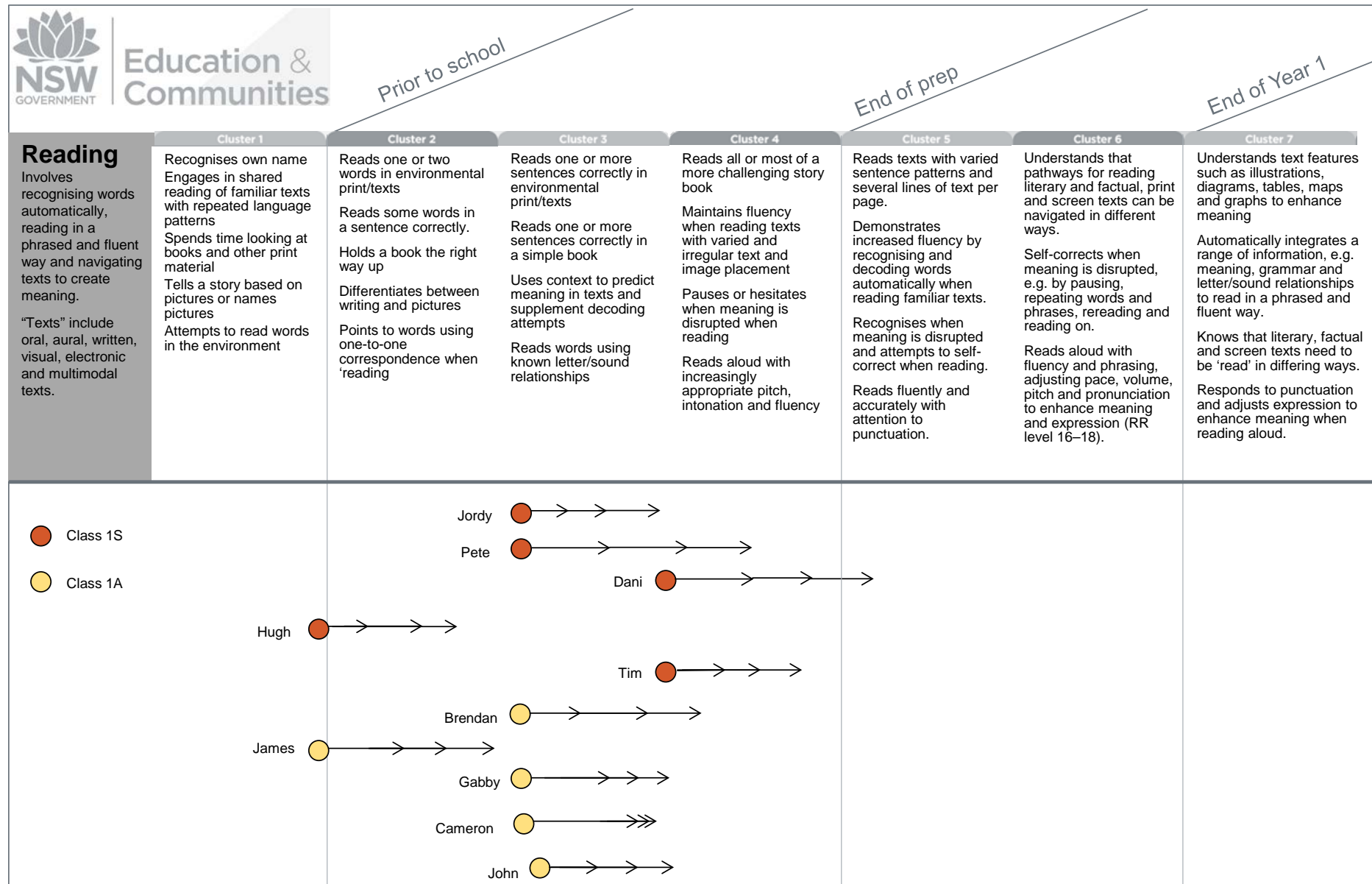
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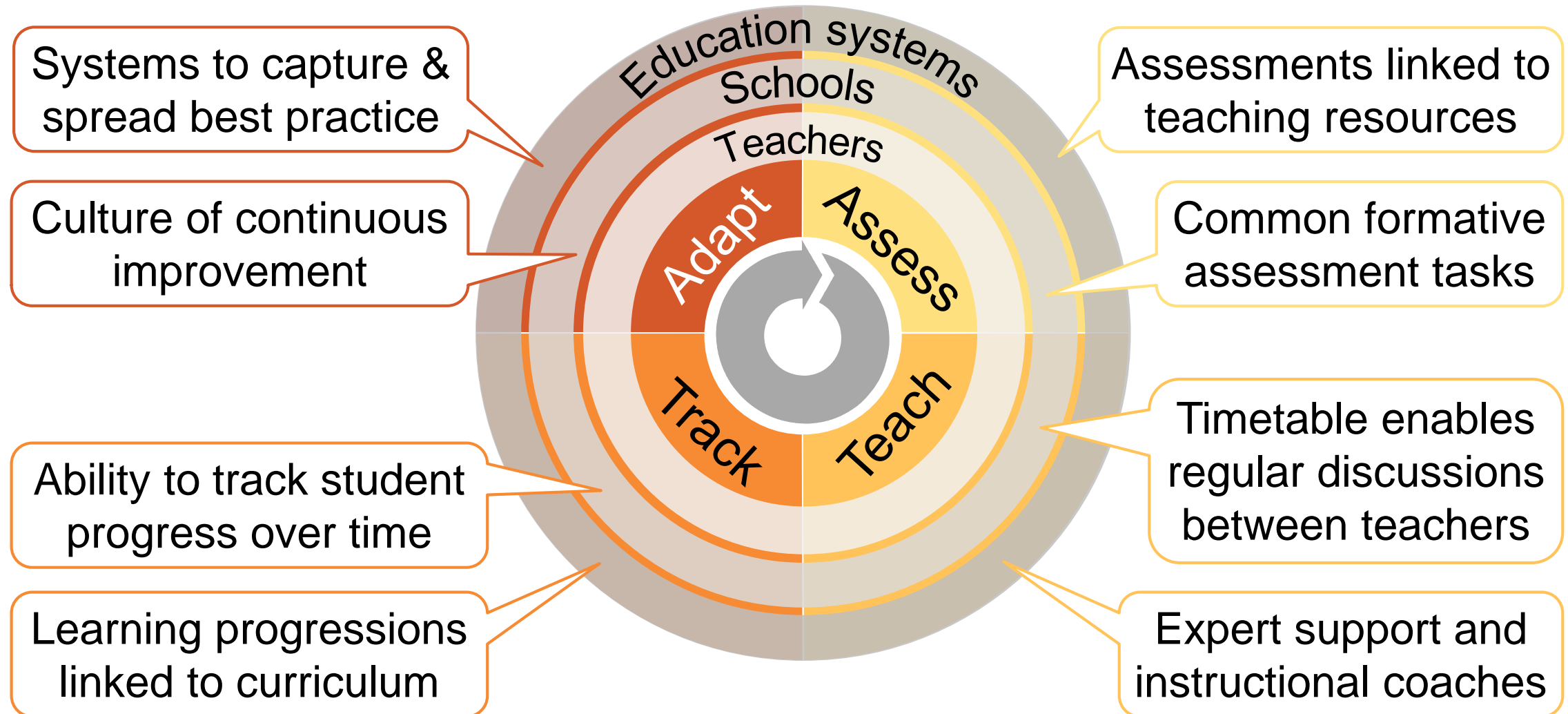
Start with the student: Targeted teaching



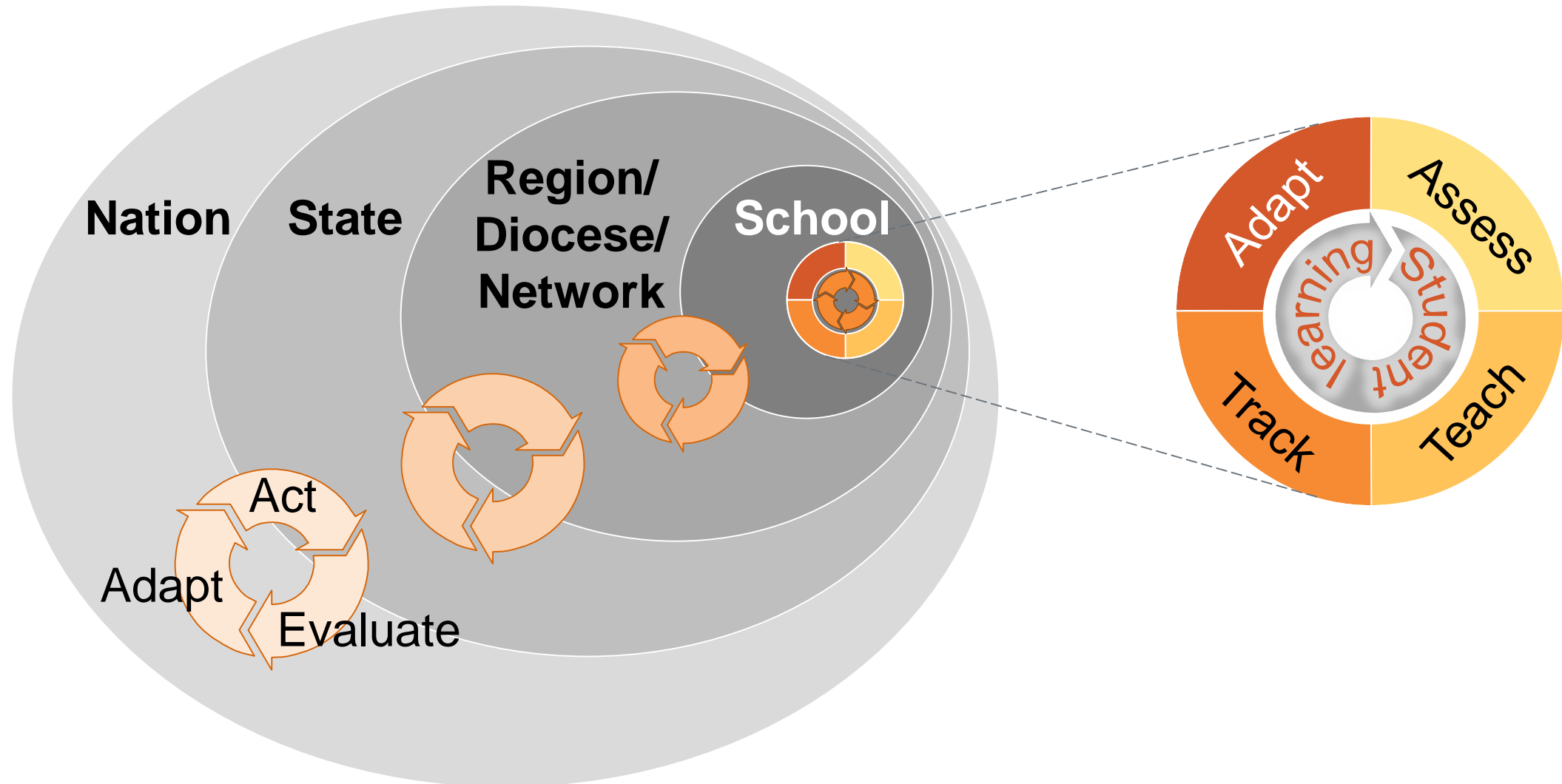
Bright Vale – use of NSW Literacy Continuum



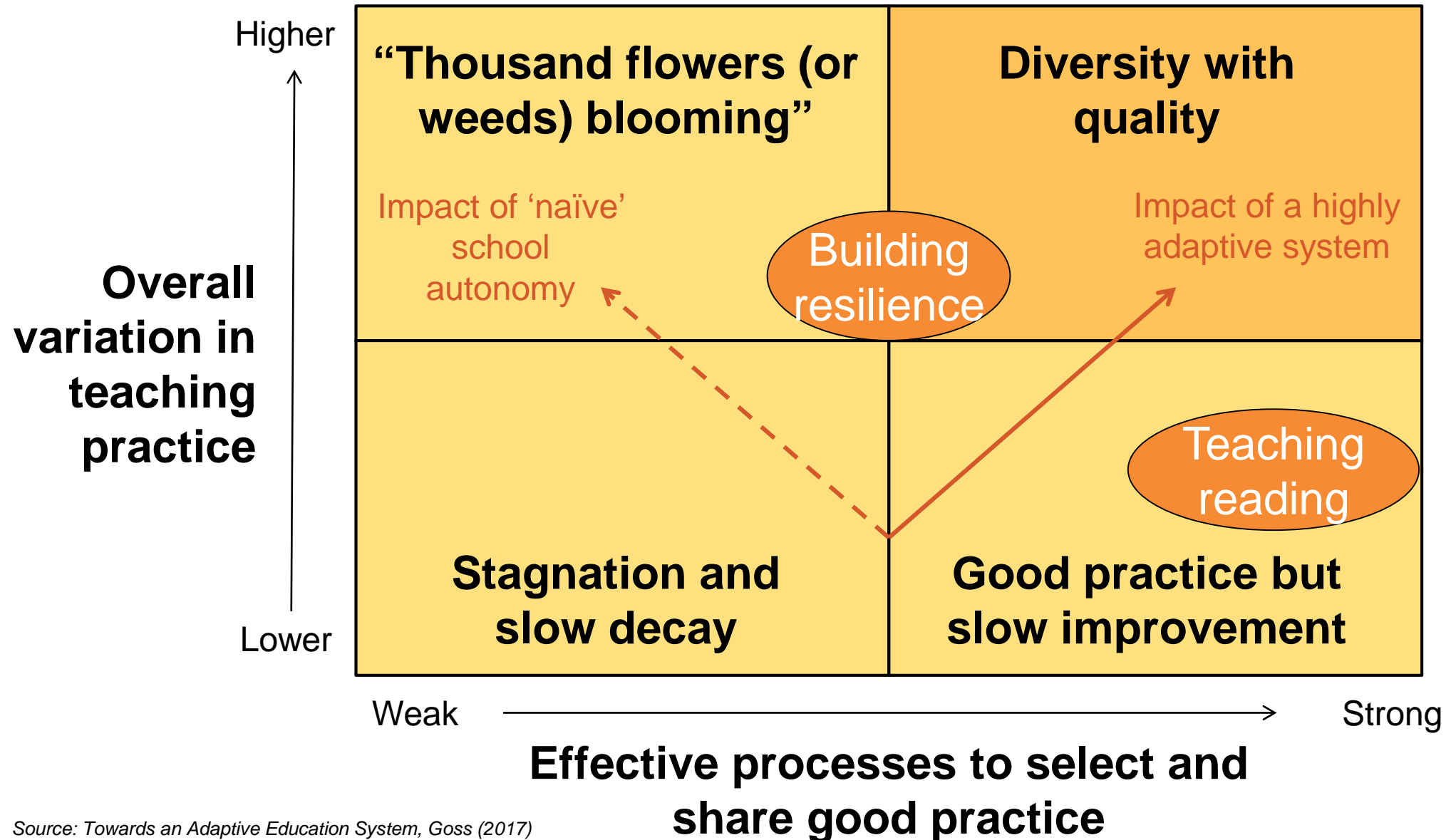
School-level learning needs system support



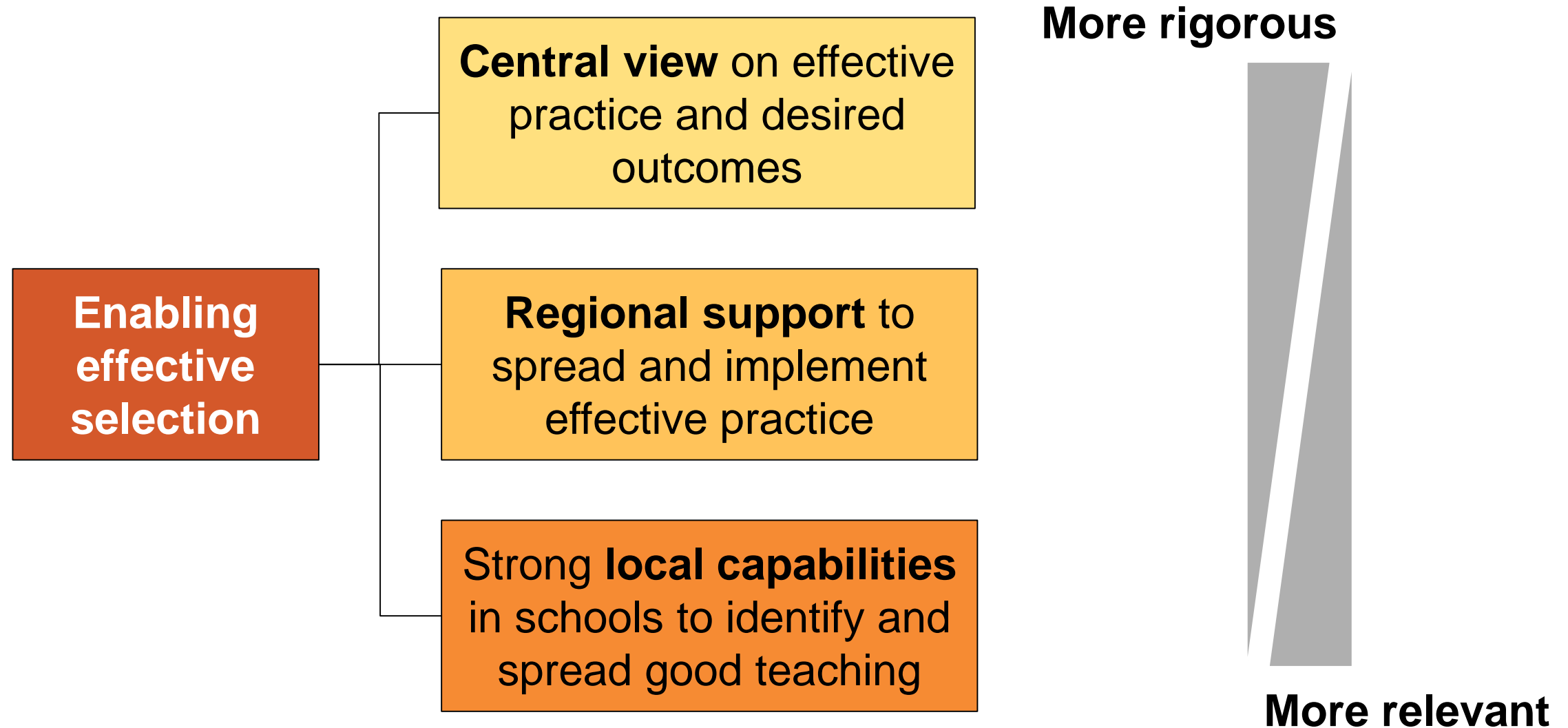
System learning needs nested feedback loops



Selection is the critical step



Three levels of capability needed



Some 'guide-posts' for future reform

- 1. Better data in the hands of teachers: trusted, timely, practical**
- 2. Invest in the most expert teachers**
- 3. Optimise practice in core areas...**
- 4. ... and innovate more systematically for a changing world**
- 5. Focus more on system design**

How are we doing today?

Why an adaptive system would be better

Towards an Adaptive Education System

Making the most of our most expert teachers

The main challenge for improving Australian teaching...

“...lies not so much in identifying and describing quality teaching, but in developing **structures** and **approaches** that ensure widespread use of successful teaching practices.”

Invargson, Kleinhenz and Dinham (2008)

Shifting the focus to learning

Focus on **Teachers**:

- All teachers have similar classroom teaching responsibilities
- Promotion based on tenure
- Dismissal process for underperforming teachers

Focus on **Teaching**:

- Effective teachers promoted to more curriculum and administrative responsibilities
- Professional development for underperforming teachers

Focus on **Learning**:

- Teachers that improve student learning promoted into more classrooms by developing other teachers
- Continuous appraisal and feedback that improves student learning

Teachers learn best from teachers

Teachers are known to teach more effectively when they work together, using observation and feedback to assess and critique each other's work

But details make the difference: Teacher-turned-coach vs larger classes

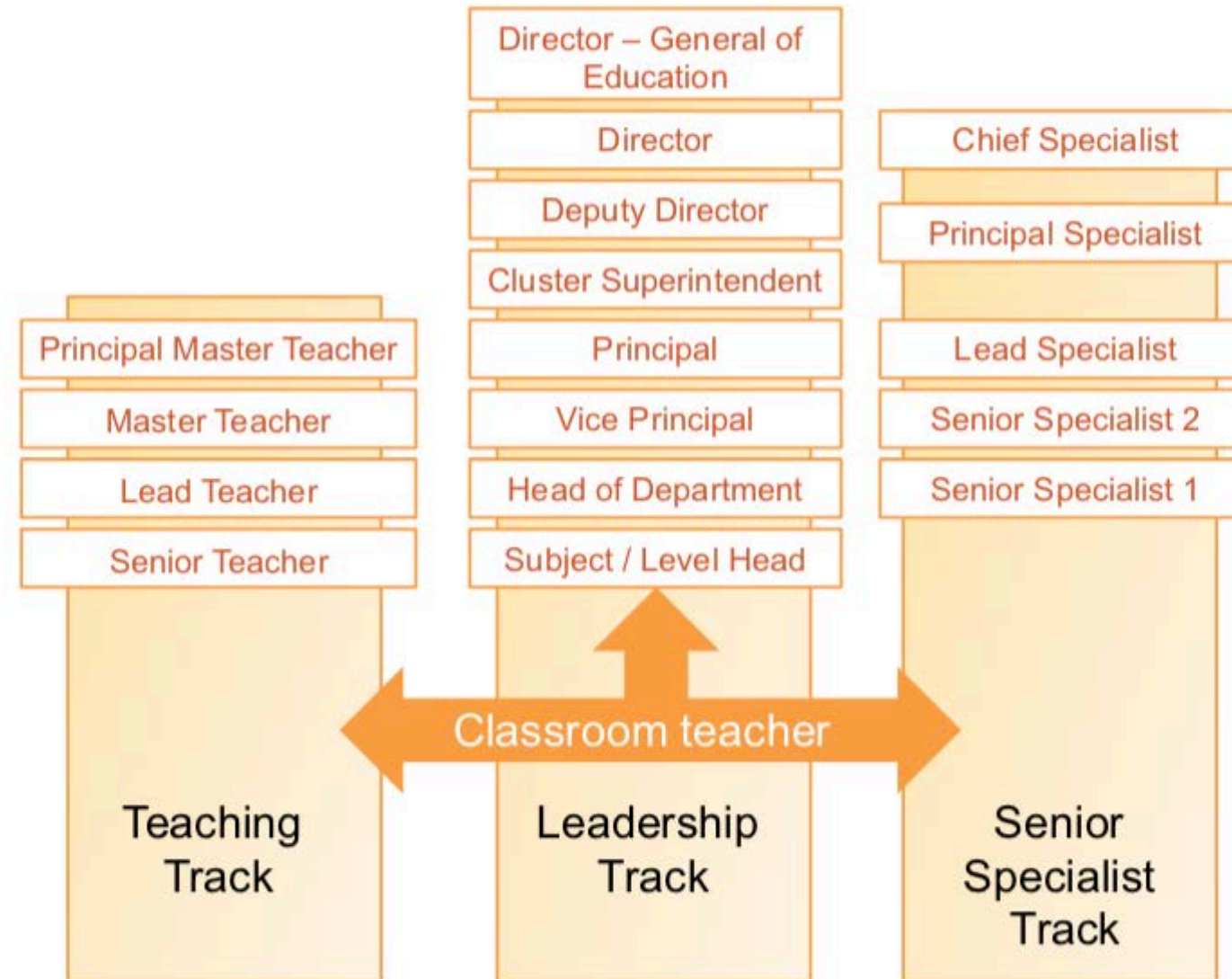
Certifying an expert teacher is not enough

Three extra steps to unleash the value of our most expert teachers:

1. Strategically redesign the day job
2. Recognise the role in industrial agreements
3. Provide on-the-ground backing for the role

This builds on HALT certification, but goes way beyond it

Career tracks in Singapore school education



Our 2016 proposal

1000 Master Teachers

- Building capability and sharing expertise across schools
- Subject-specific
- Focused on pedagogical leadership (PCK)
- Working in subject networks to guide Instructional Leaders
- “Owners” of national best practice and the links to research

30,000 Instructional Leaders (up to 10% of teachers)

- Building teacher expertise within schools
- Subject specific
- Leading within-school improvement
- Working with colleagues across schools

Questions for discussion

Does your school use your HALT status to develop the teachers around you?

Do you get the time you need? Do others get release time to work with you?

What are the main barriers in developing other teachers in your school?

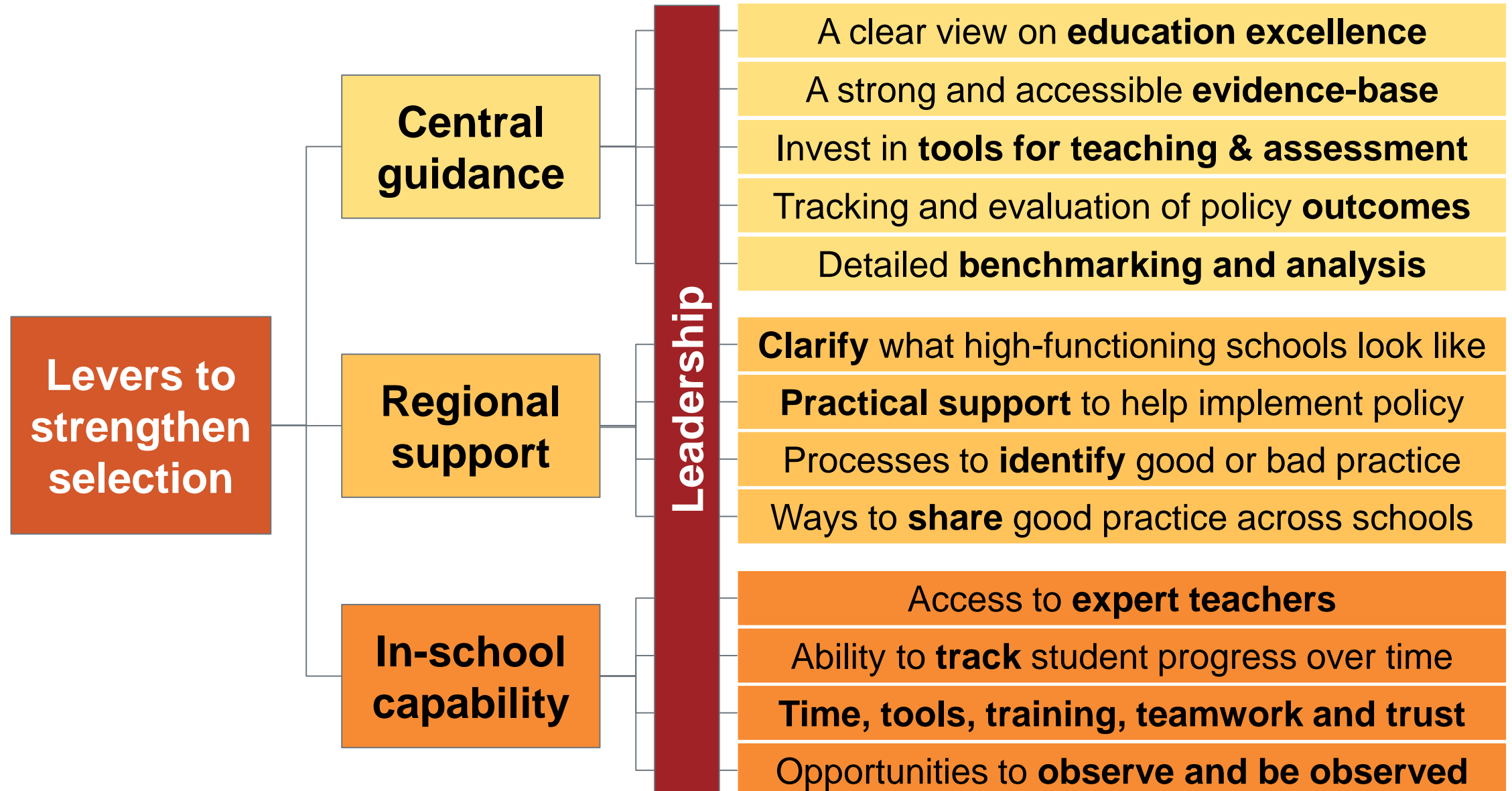
- Teachers' knowledge: Content, Pedagogy, PCK?
- Leadership support?
- Resources?
- Ability to learn from peers or other schools?
- Other

Where do you see the role of subject specific expertise?

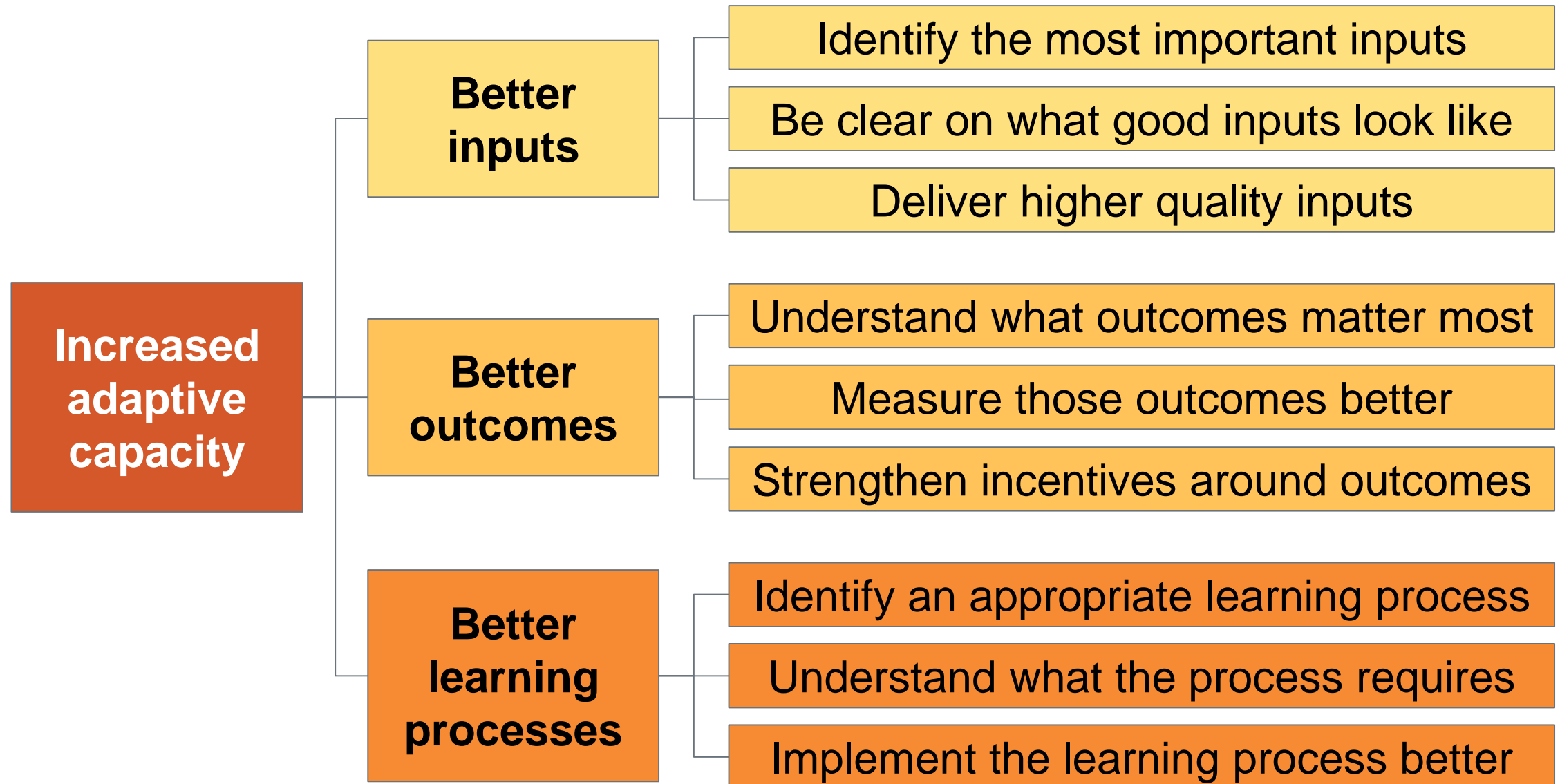
Priorities from the Gonski 2.0 Review

- 1: Deliver at least one year's growth in learning for every student every year
- 2: Equip every child to be a creative, connected and engaged learner in a rapidly changing world
- 3: Cultivate an adaptive, innovative and continuously improving education system

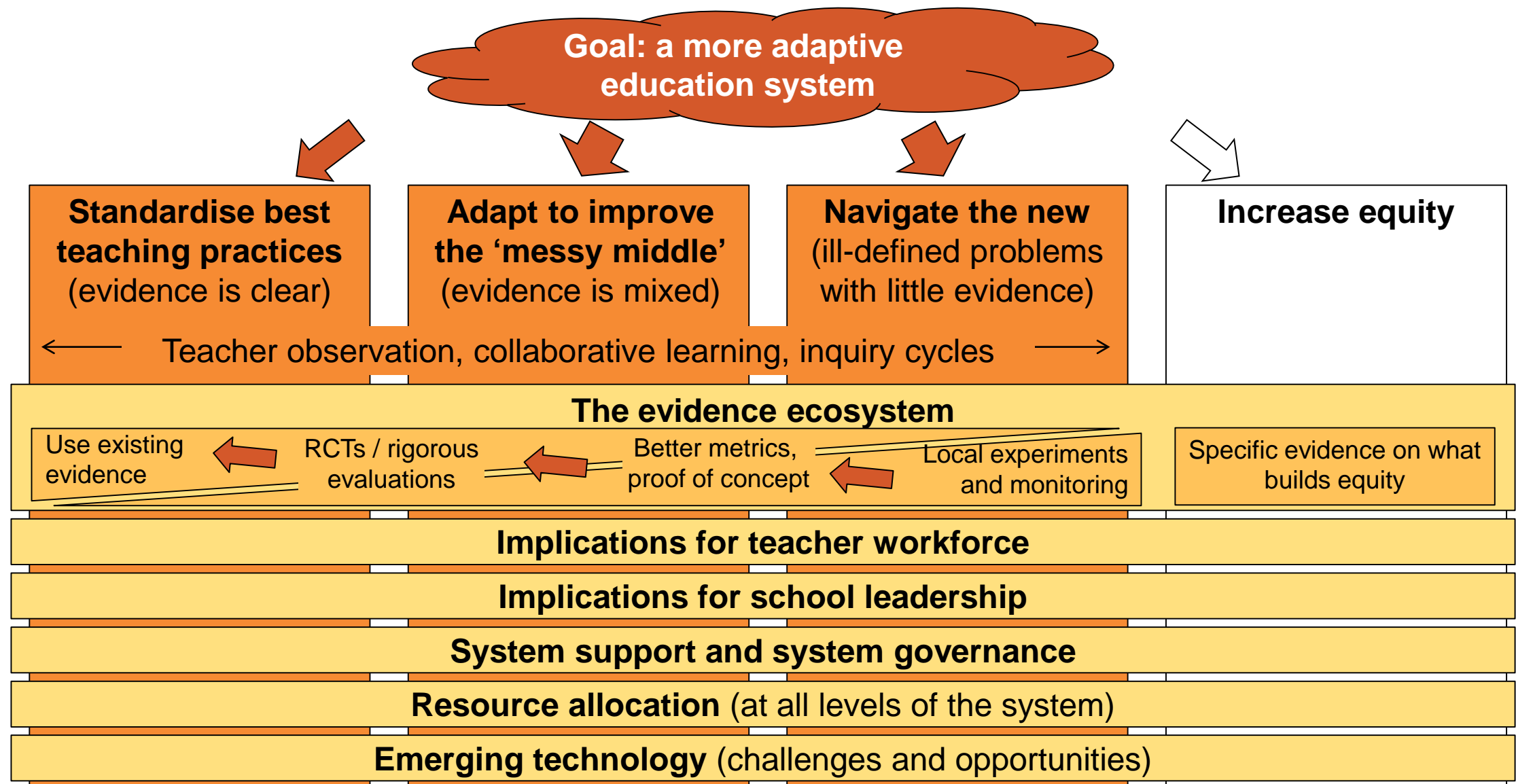
Levers to strengthen selection



Strengthening any step can help



Future workstreams (WIP)



GRATTAN
Institute

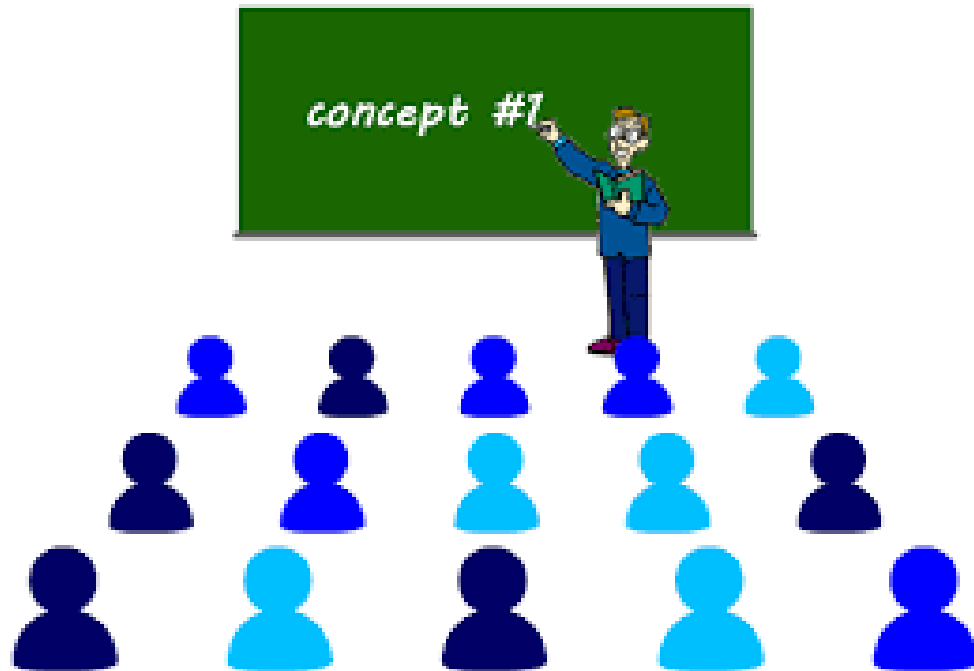


Big data can inform teaching...

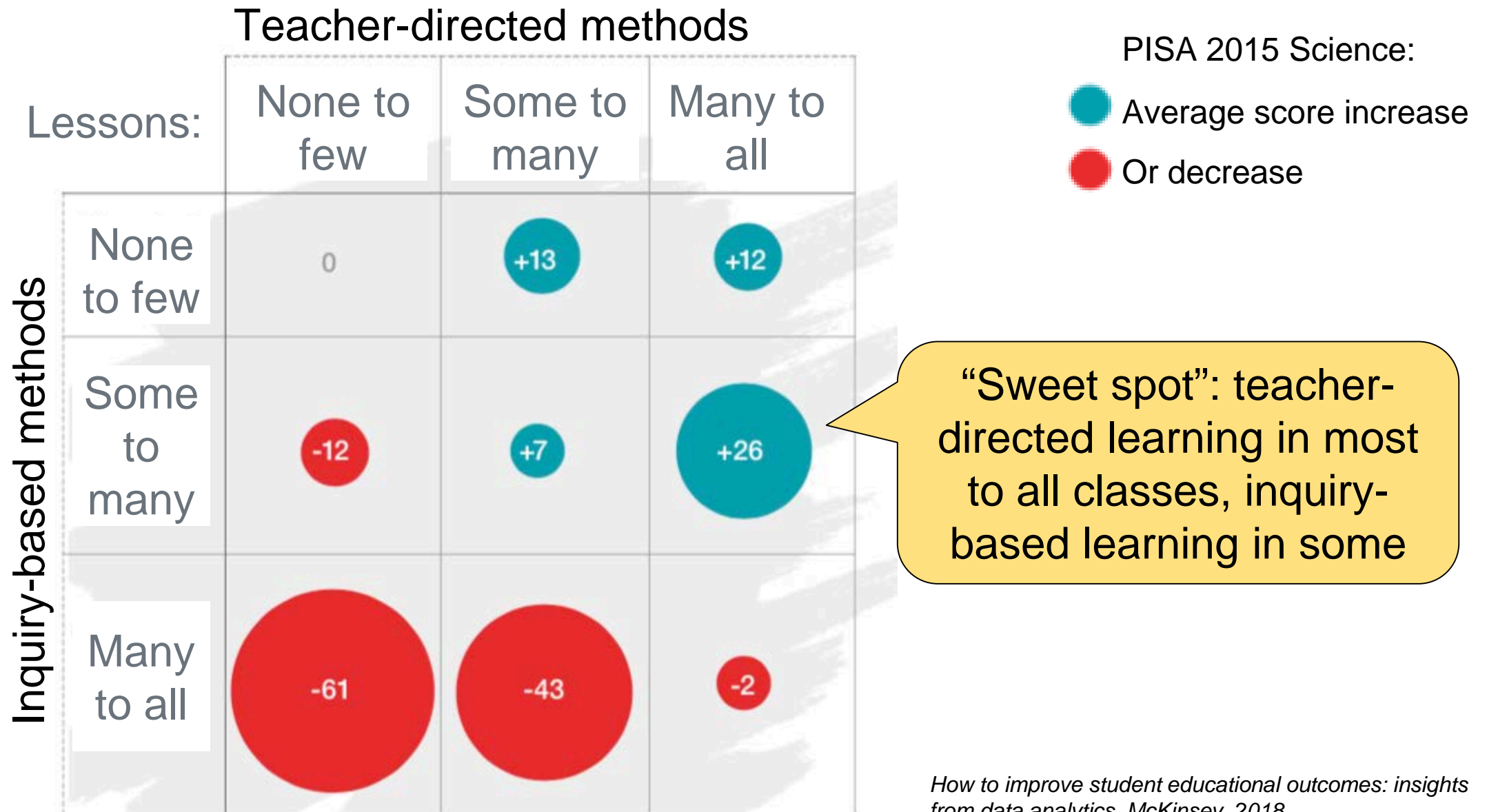
Teacher-directed methods

OR

Inquiry-based methods?



Big data can inform teaching...



But small data drives learning

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