Learning from promising practices in ensuring effective use of large-scale learning assessment data for education policy and practice

Developing evidence from national and international LSLA for policy and practice

Session 2

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Evidence from national NLSAs

What is the difference between a “result” and “evidence”?

- A result is a finding from a single analysis using the data from your NLSA. For example: The average scores of boys and girls in Science.
- Evidence is a package of findings used to provide a data based response to a policy or practice related question. For example: What would be the most effective policy response to ensure equity between boys and girls? The response should be based on results from several analyses and could be from multiple data sources:
  - Boys have a higher average score in Mathematics than girls in 20XX
  - Girls perform better in Reading than boys in 20XX
  - There is not much difference in scores between boys and girls in Science in 20XX
  - About a third of boys and girls or **80,000 students** fall below the expected standard in Mathematics and Reading respectively.
  - Trends over the last X years show that these results seem to persist despite previous policy efforts to improve fundamental skills in Reading and Mathematics.
  - Key policy sensitive affecting performance are class time on subject, individual assistance and practice time.

Policy problem description based on NLSA

Description components should include:

- What is the policy problem? A persistent gender difference over last **ten years** in performance but in **different subjects**. Boys in Reading and girls in Mathematics.
- Is the problem national or concentrated in some areas? **National**
- How serious is the problem? It **starts early** and affects the **school career performance**
- How many students are affected? **80,000**
- What are the key factors affecting performance? Gender, socio-economic status – both not policy sensitive. **Class time on subject, individual assistance and practice time.**

Evidence from national NLSAs – Use data to explain

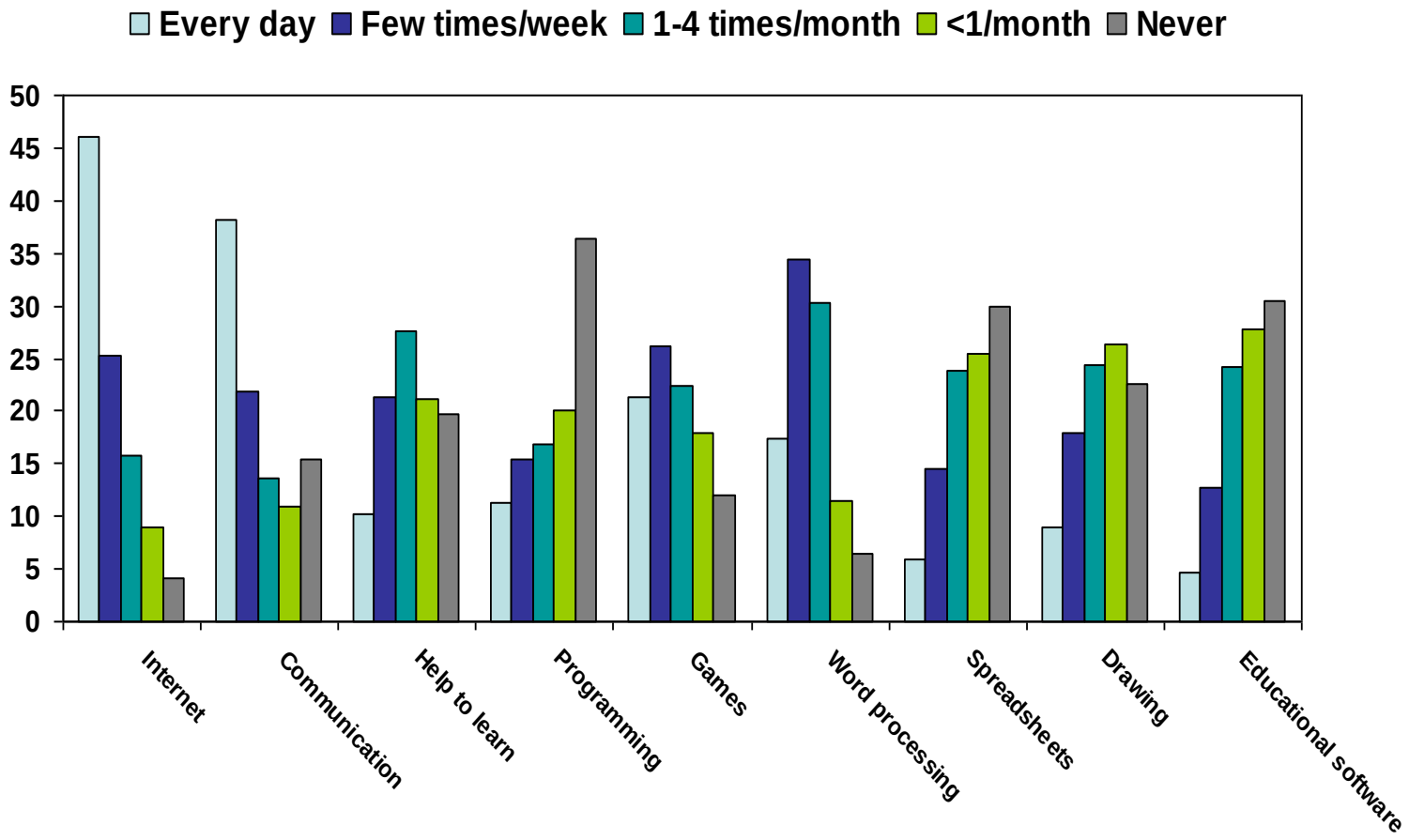
Policy recommendations to increase gender equity could be:

- Increase class time in lower grades in Reading and Mathematics nationally so that teachers can repeat concepts and provide practice opportunities.
- Provide an assistant teacher in Reading and Mathematics lower classes once a week to provide individual attention to weaker students in grades one and two so that these skills are learned early.
- Costs could be XXX (Teacher cost, once a week over a year for two grades for all primary schools) but they can be reduced by using teachers from teacher training
- Potential impact could be measured in 3 years when grade 1 students are in grade 3

NLSA

How good is student performance? Averages and comparison

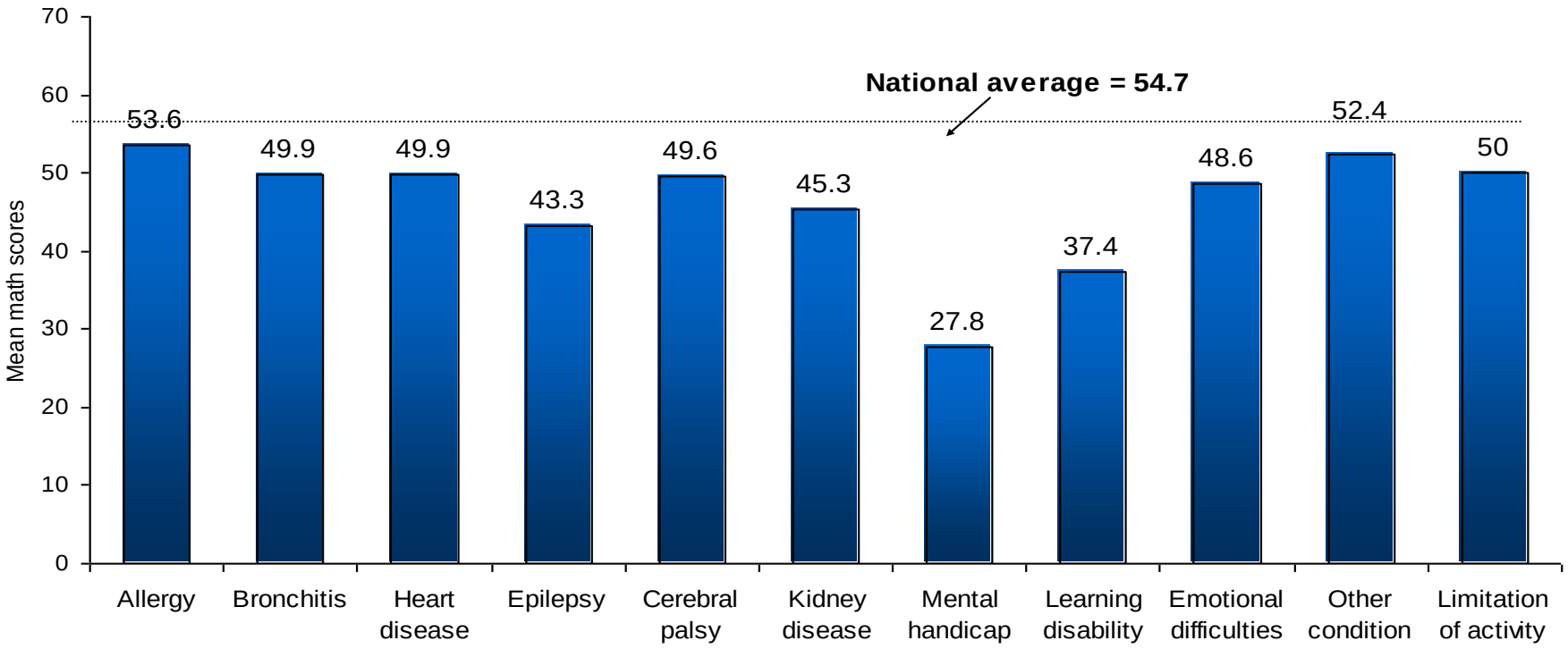
Frequency of computer use by 15-year olds by types of usage



Source: Programme for International Student Assessment 2000

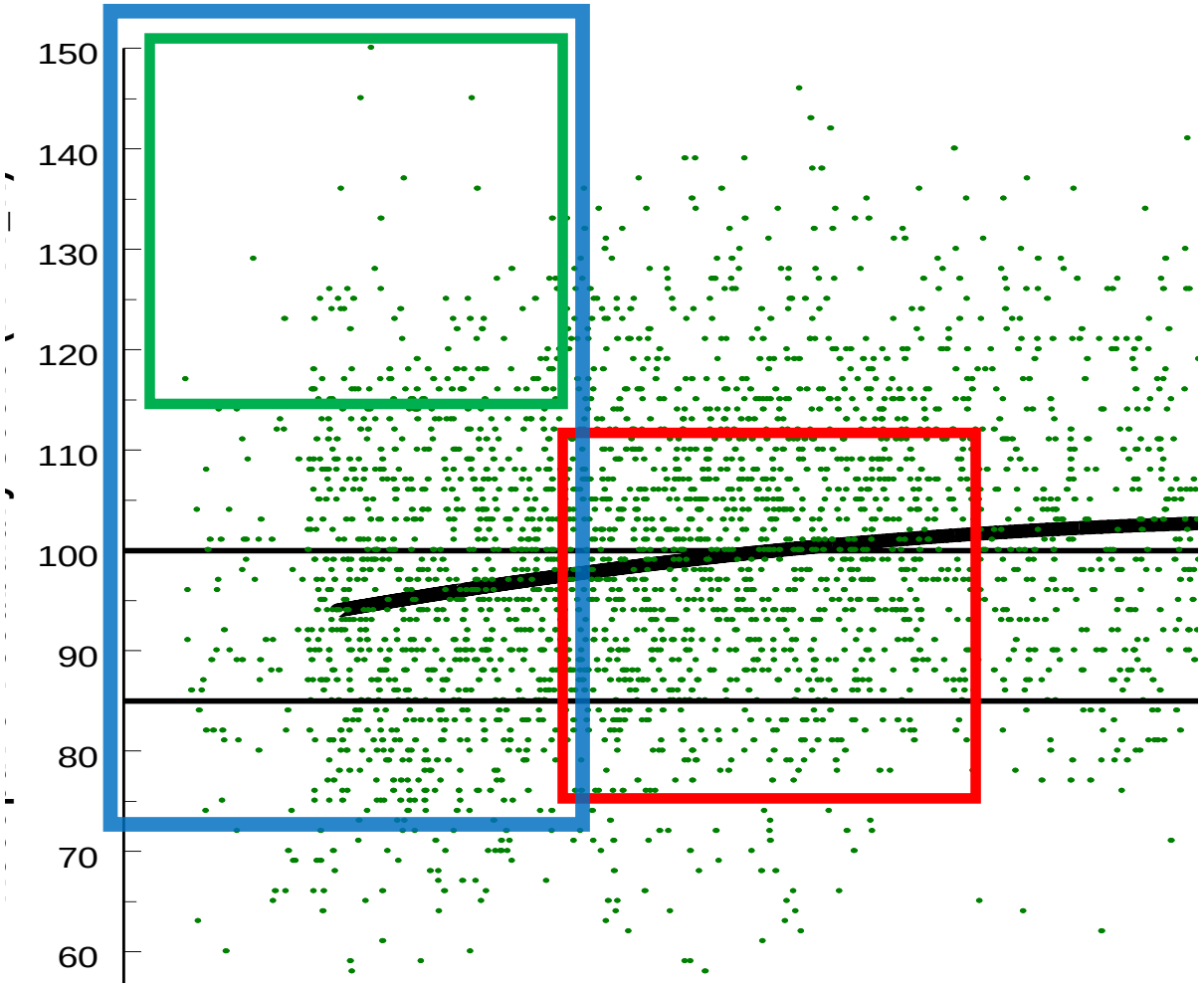
NLSA
How good is student performance? Averages and comparison to standard

Per cent of children by disability or chronic illness falling below national average in Mathematics



NLSA

Who are affected? Targeted frequencies

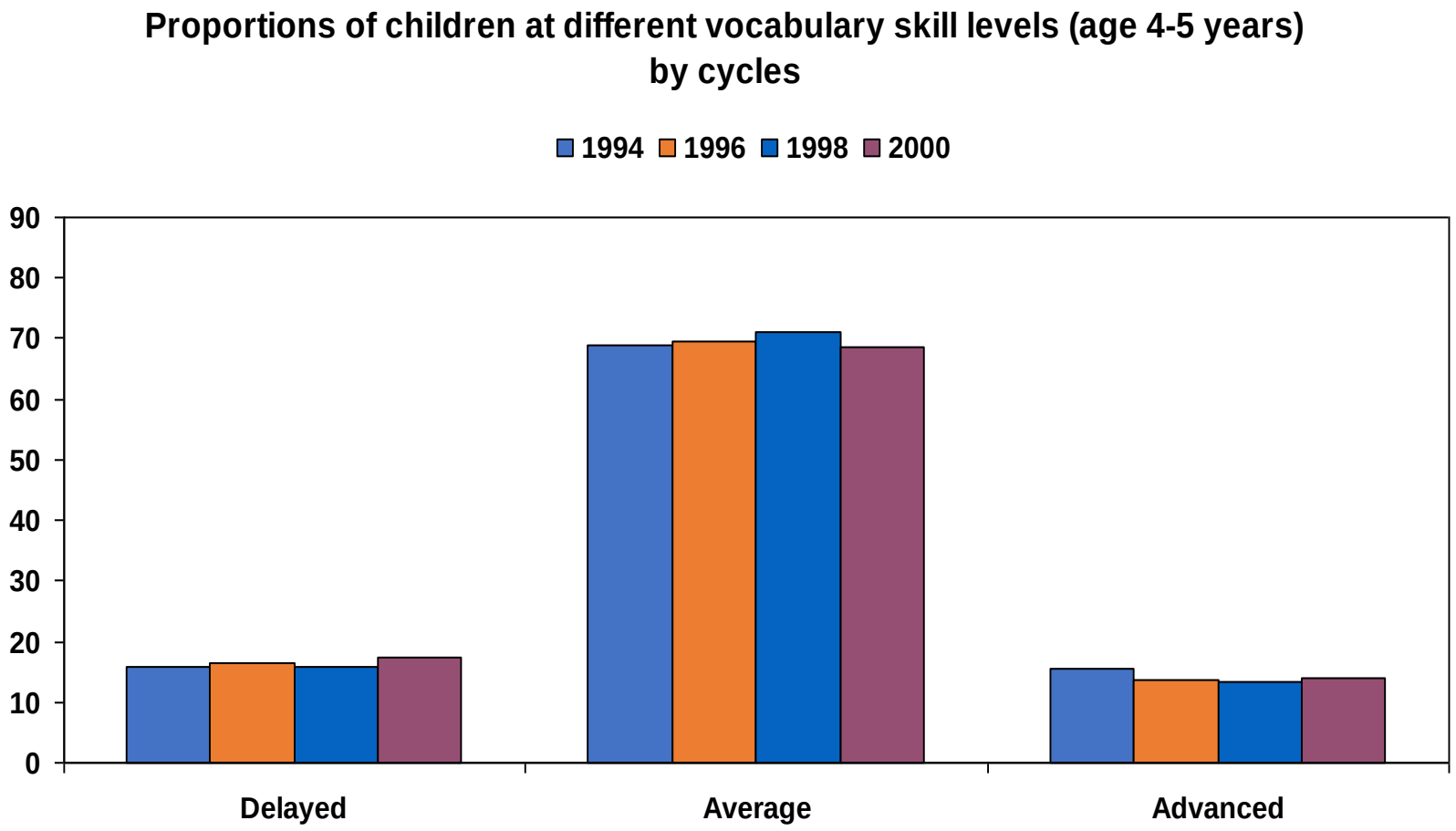


Children with high outcomes who don't need help but benefit when policies target by low income

Children with low outcomes who need help but do not benefit when policies target by low income

NLSA

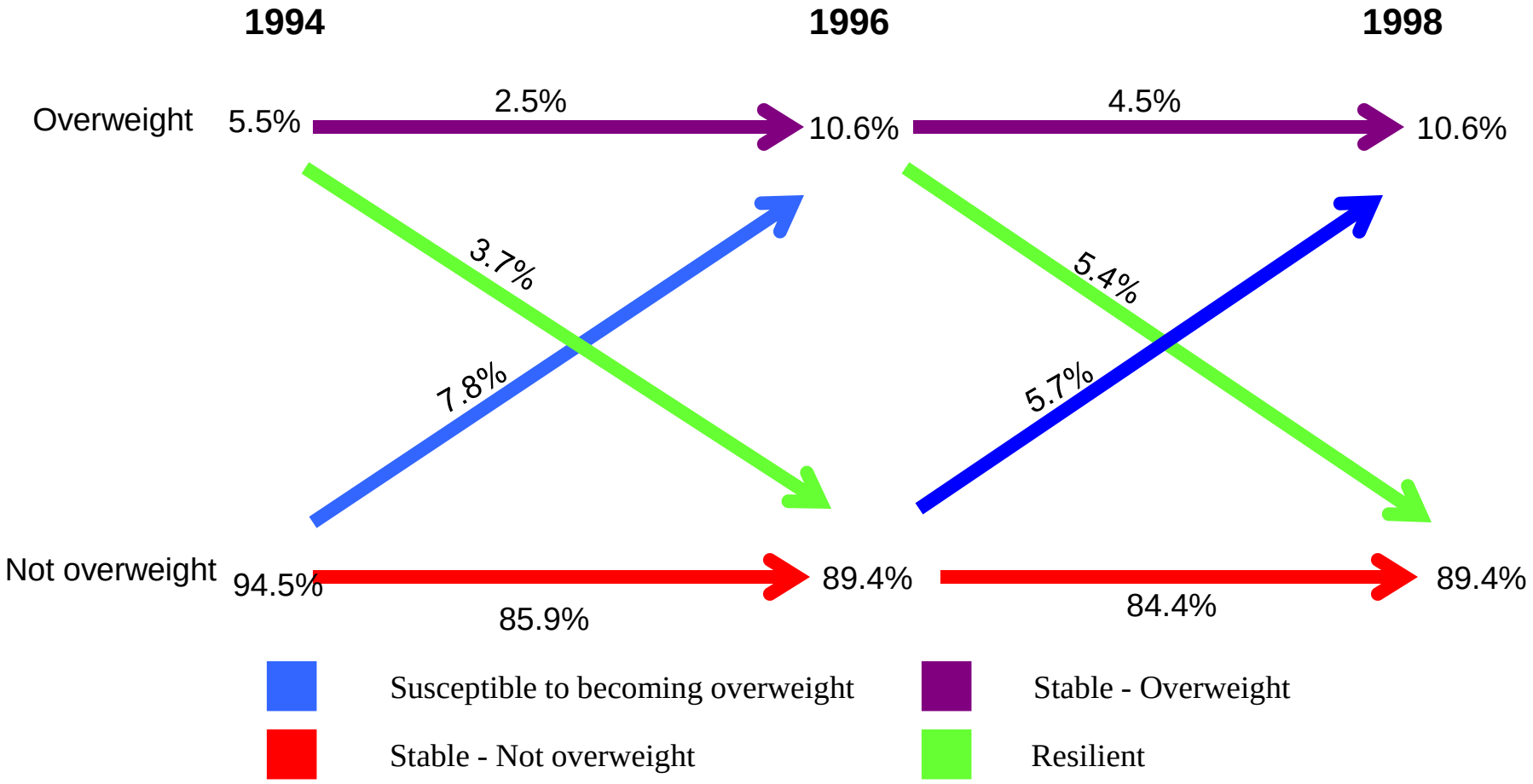
How far from desired outcomes? Categories and distributions



Source: National Longitudinal Survey of Children and Youth

NLSLA

Getting better or worse? Trends



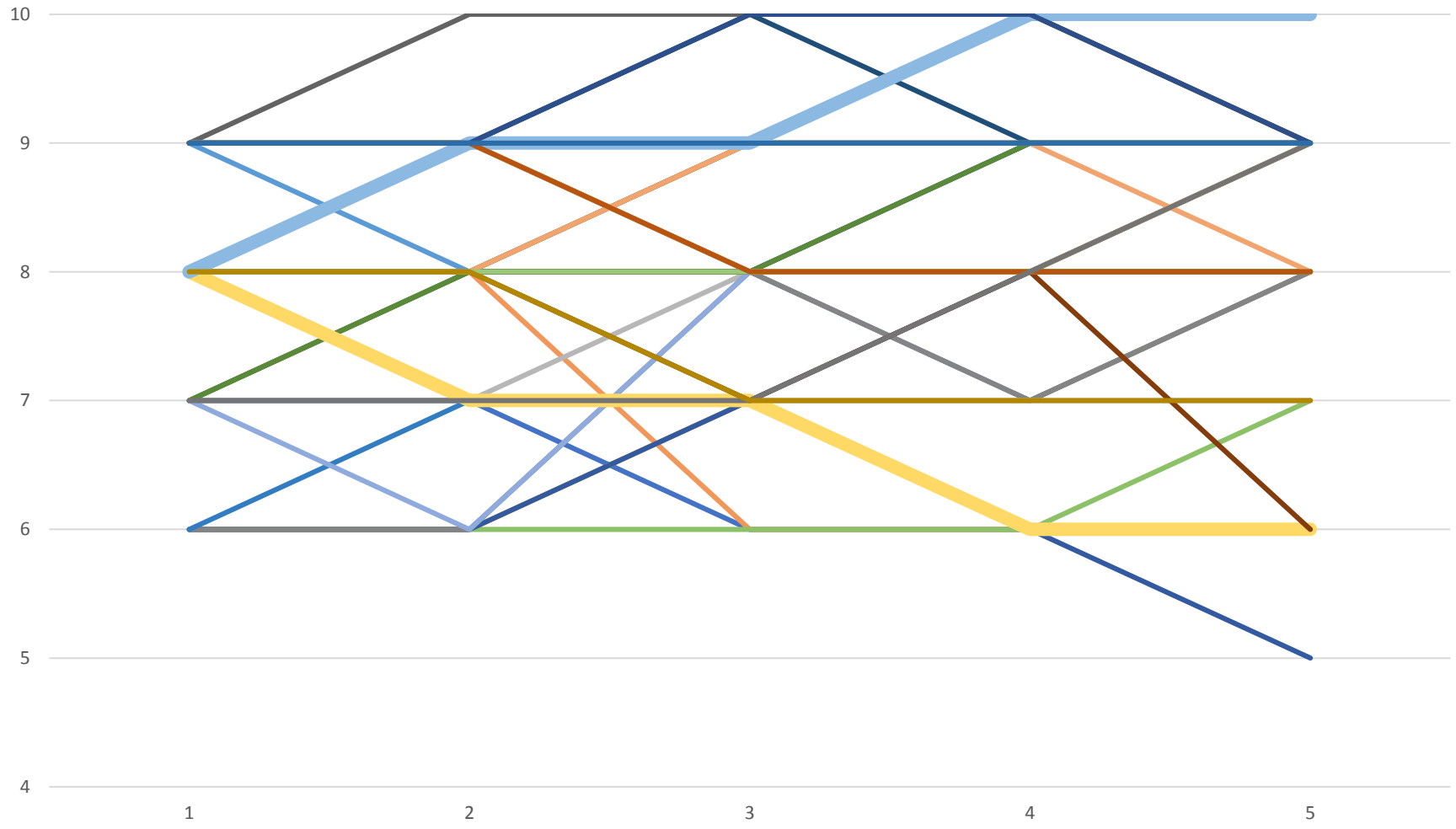
NLSCY Unweighted Estimates. Based on children who were 10-11 years in cycle 1

More children are gaining weight than losing weight

NLSLA

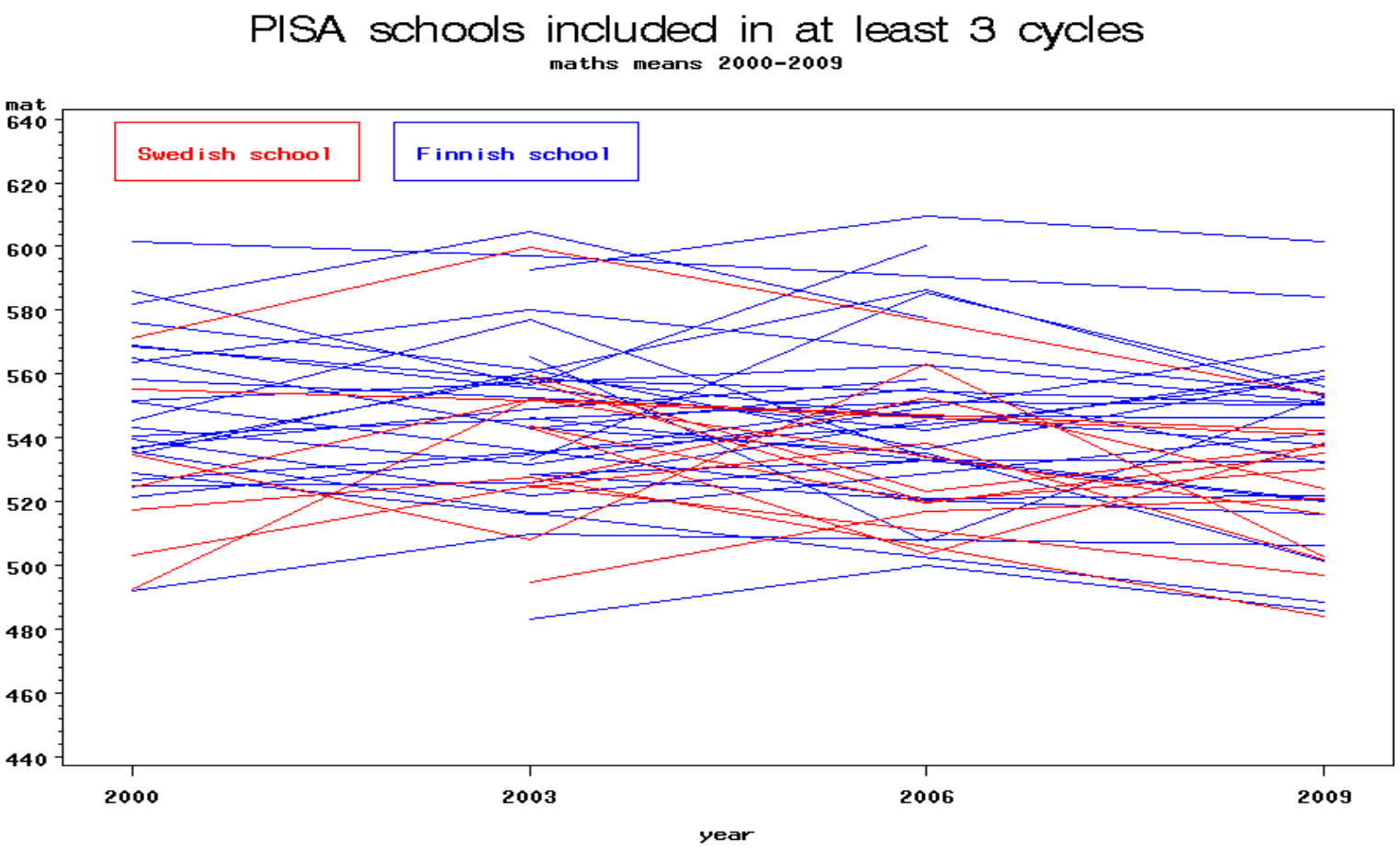
When do issues start? Pathways

Student pathways in Mathematics, grades 4 to 9, School 8, 2014

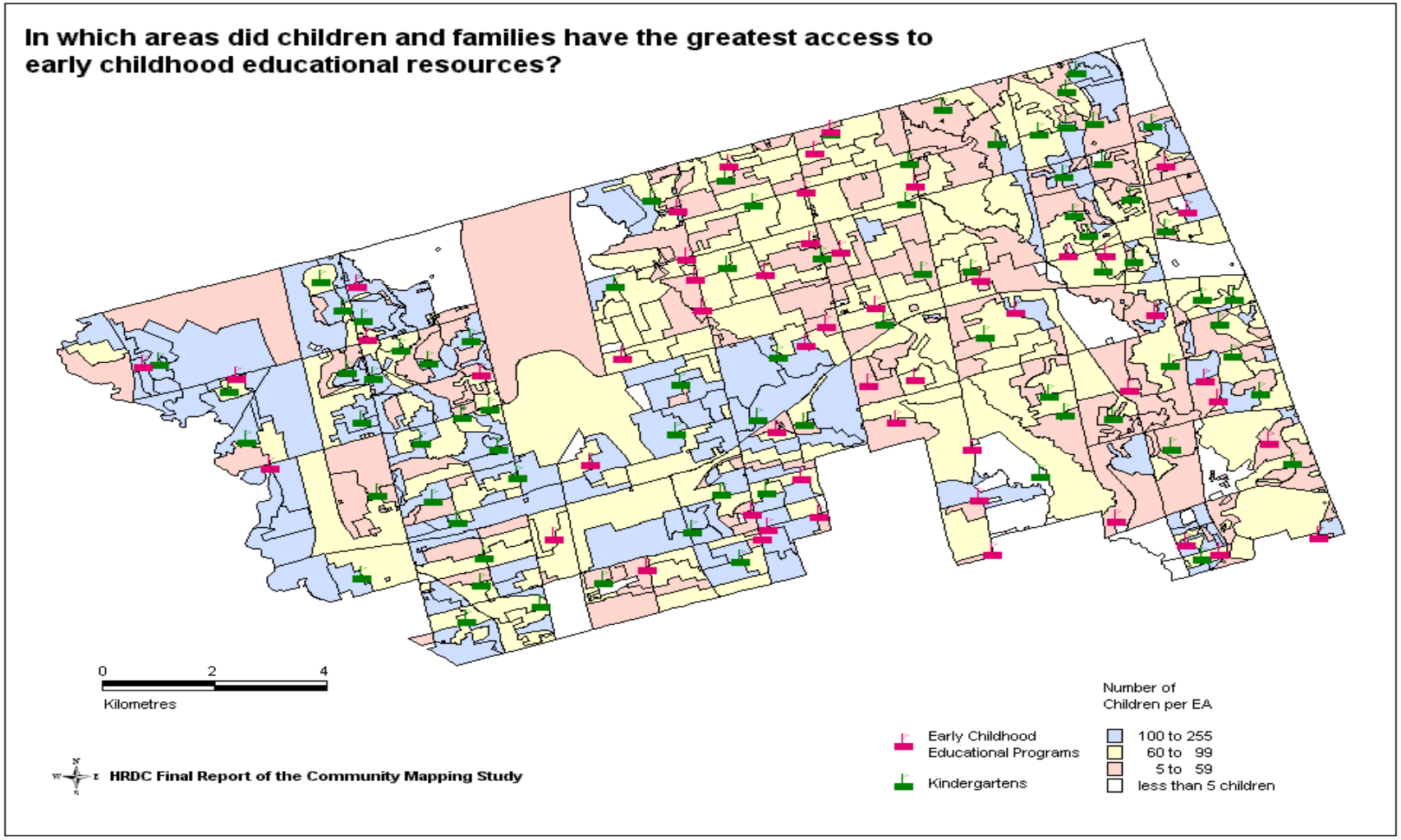


NLSLA
When do issues start? Pathways

School pathways over time show schools that are improving or declining in performance



NLSLA
Who is disadvantaged? Where? Comparisons and concentrations



NLSLA

Key factors and reasons – Multivariate analyses

Classroom and teaching factors affecting performance – Statistically Significant factors in red

Classroom Factors

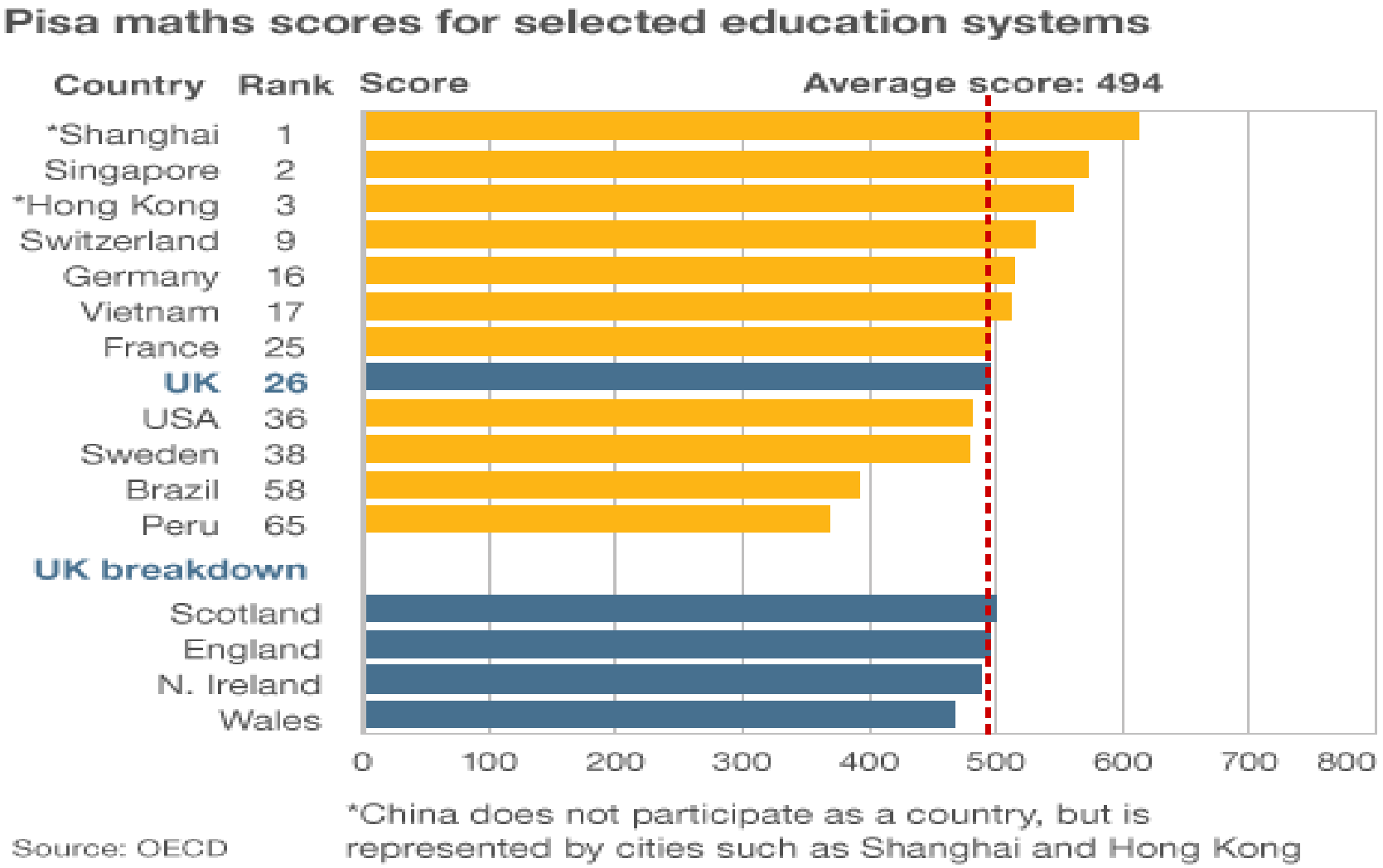
- Class time on subject
- Discipline
- Class size

Teaching Factors

- Teacher student relations
- Expectations for success
- Home work
- Formative evaluation
- Use of text books

ILSLA - PISA

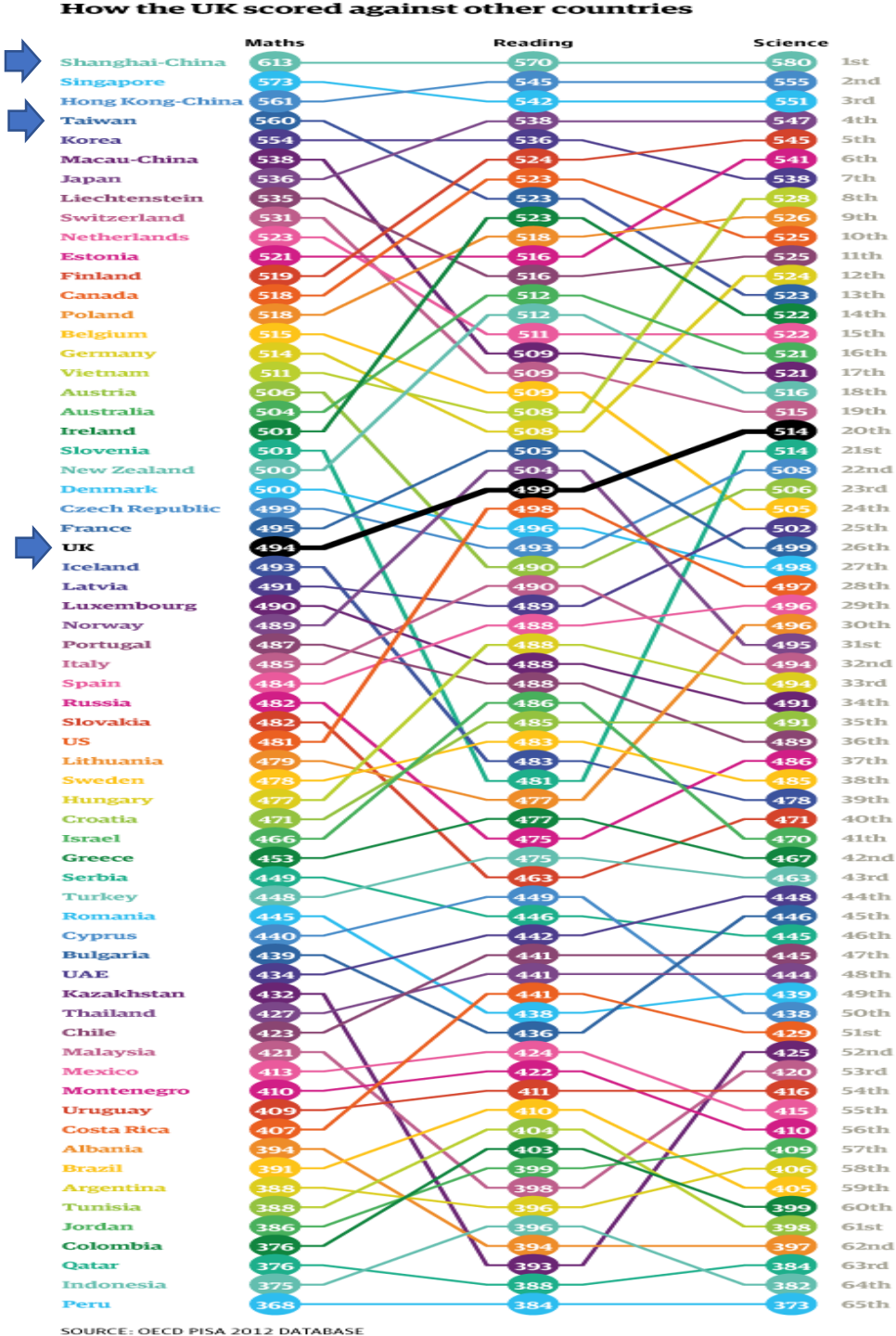
International rank – Comparison with performance with comparator countries and within country regions



ILSLA - PISA

Consistent student performance in the three domains: Reading, Maths and Science

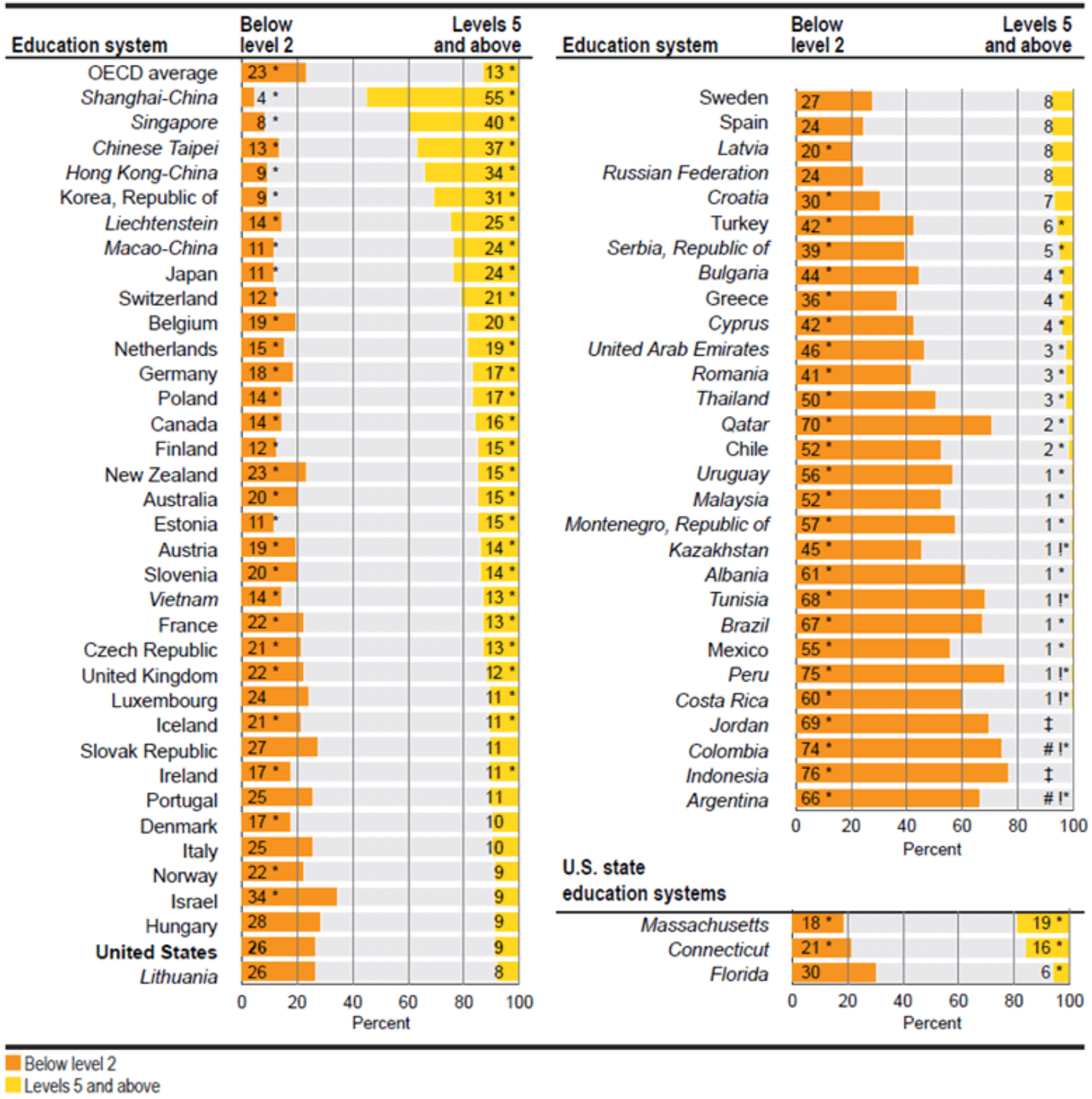
- Shanghai has consistent high performance in Maths, Reading and Science
- UK in contrast has low scores in Maths and higher student performance in Science
- Taiwan has high scores in Maths, lower scores in Reading and even lower scores in Science



ILSLA - PISA

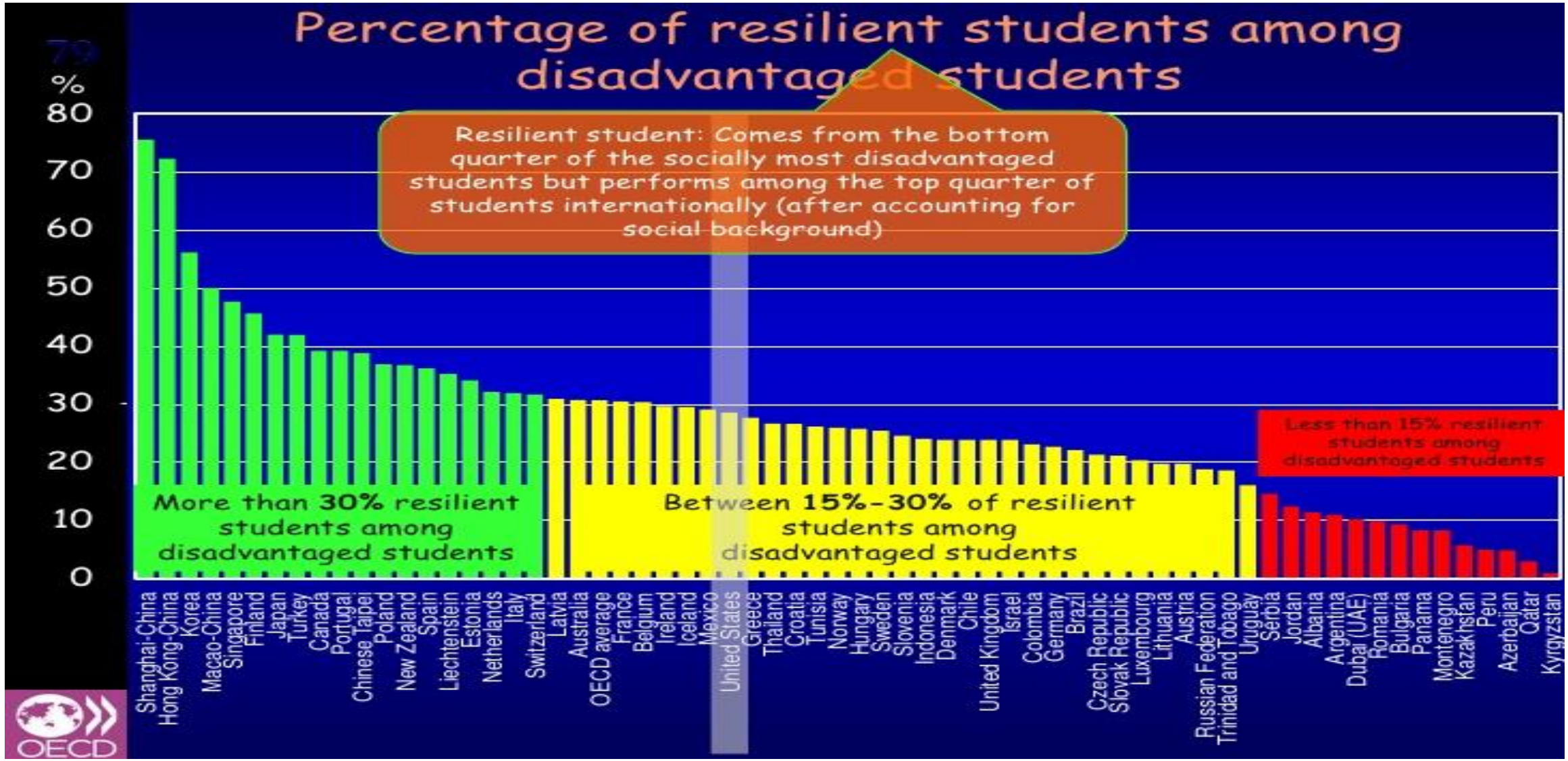
Performance related to a desirable international standard

- The desirable standard in PISA for student performance is level 2 and above.
- The high performers score at Level 5 and above.
- Low performing countries have large proportion of high performers and a small percentage of low performers.



ILSLA (PISA)

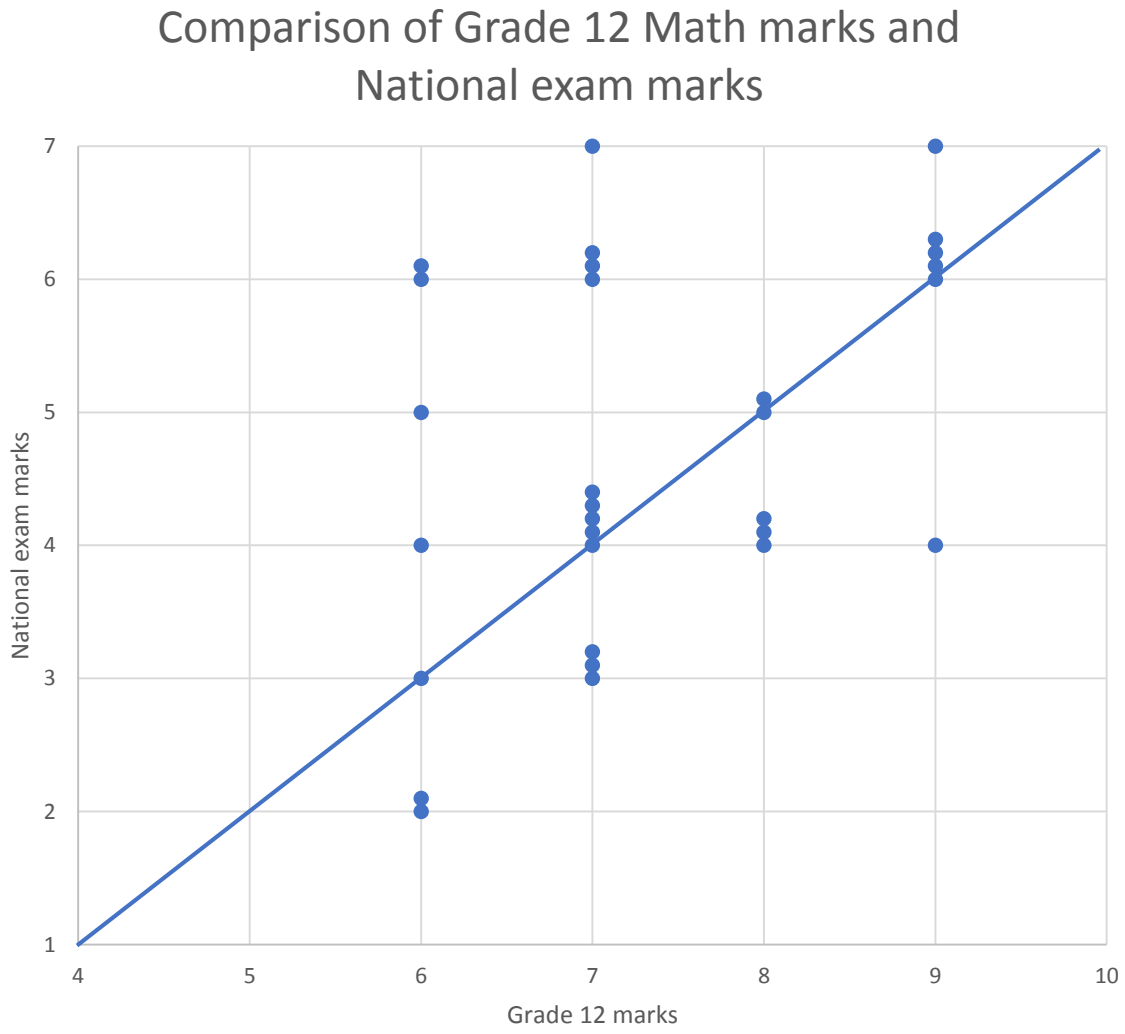
Quality education obtains good performance even from disadvantaged students.



ILSLA

Comparison with national results

School marks and national marks: School marks in Mathematics in Grade 12 predict marks in national high school exam better but not as well as they should



- Students who are on the diagonal do as well as their marks in Grade 12 in the National high school exam.
- Students who are above the diagonal do better in their National high school exam than they do in Grade 12 marks. Positive result!
- Students who are below the line do better in Grade 12 marks than they did in their National high school exam.
- Correlation is 0.47 between the two marks.