

# What is PISA?

- The Programme for International Student Assessment.
- Designed in the 1990s by the OECD to measure children's performance at the end of compulsory schooling.
- Tests the **application** of skills in reading, maths and science, in a sample of 15-year-olds, every three years.
- You cannot do well in these tests through rote learning alone.

**CLIMBING MOUNT FUJI – a unit from the field trial**

**CLIMBING MOUNT FUJI**

Mount Fuji is a famous dormant volcano in Japan



**CLIMBING MOUNT FUJI – QUESTION 1**

Mount Fuji is only open to the public for climbing from 1 July to 27 August each year. About 200 000 people climb Mount Fuji during this time.

On average, about how many people climb Mount Fuji each day?

- A. 340
- B. 710
- C. 3 400
- D. 7 100
- E. 7 400

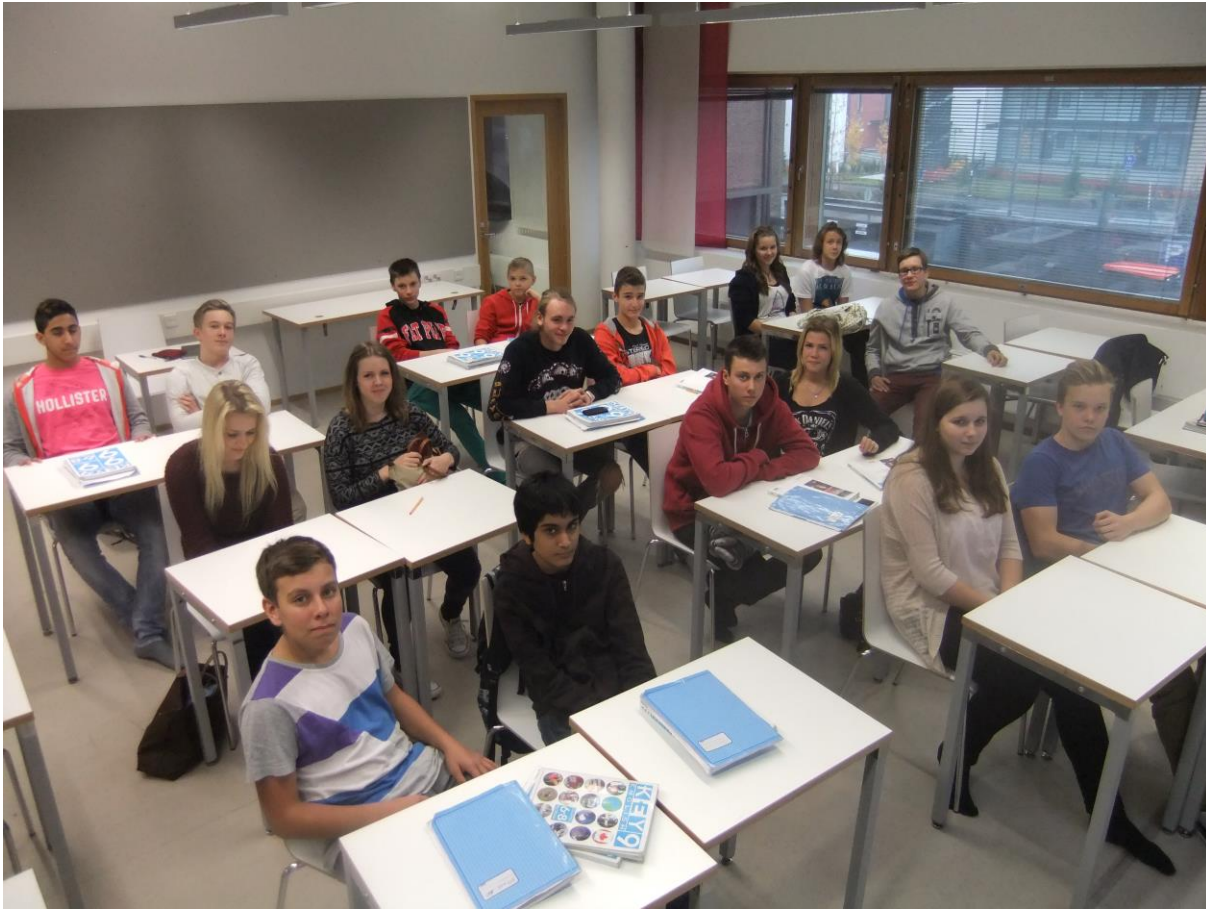
**CLIMBING MOUNT FUJI – QUESTION 2**

The Gotemba walking trail up Mount Fuji is about 9 kilometres (km) long.

Walkers need to return from the 18 km walk by 8 p.m. Toshi estimates that he can walk up the mountain at 1.5 kilometres per hour on average, and down at twice that speed. These speeds take into account meal breaks and rest times.

Using Toshi's estimated speeds, what is the latest time he can begin his walk so that he can return by 8 p.m.?

These systems have more in common than you might think



## Index of **student-oriented** instruction

- The teacher gives **different work** to classmates who have difficulties learning and/or to those who can advance faster.
- The teacher assigns **projects** that require at least one week to complete.
- The teacher has us work in **small groups** to come up with joint solutions to a problem or task.
- The teacher asks us to **help plan** classroom activities or topics.

## Index of **teacher-directed** instruction

- The teacher sets **clear goals** for our learning.
- The teacher asks me or my classmates to **present our thinking** or reasoning at some length.
- The teacher asks questions to **check** whether we have understood what was taught.
- At the beginning of a lesson, the teacher presents a short **summary** of the previous lesson.
- The teacher **tells us** what we have to learn.

What do you think students in Finland and Japan reported more of?

Where on the x-axis would you place: Finland? Japan?

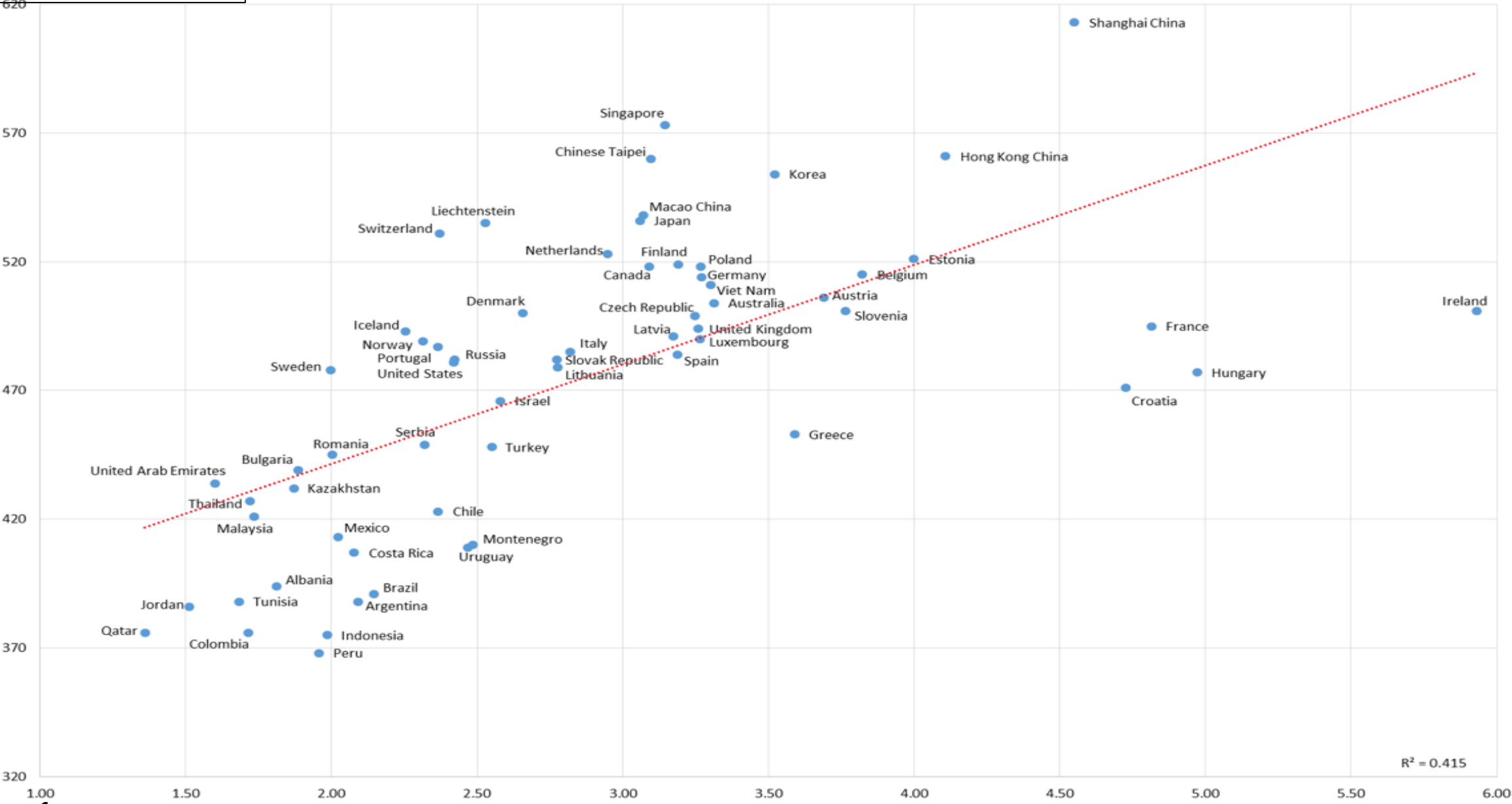
Mathematics score



Relatively more student-oriented ←

→ Relatively more teacher-directed

Mathematics score



R<sup>2</sup> = 0.415

1

2

3

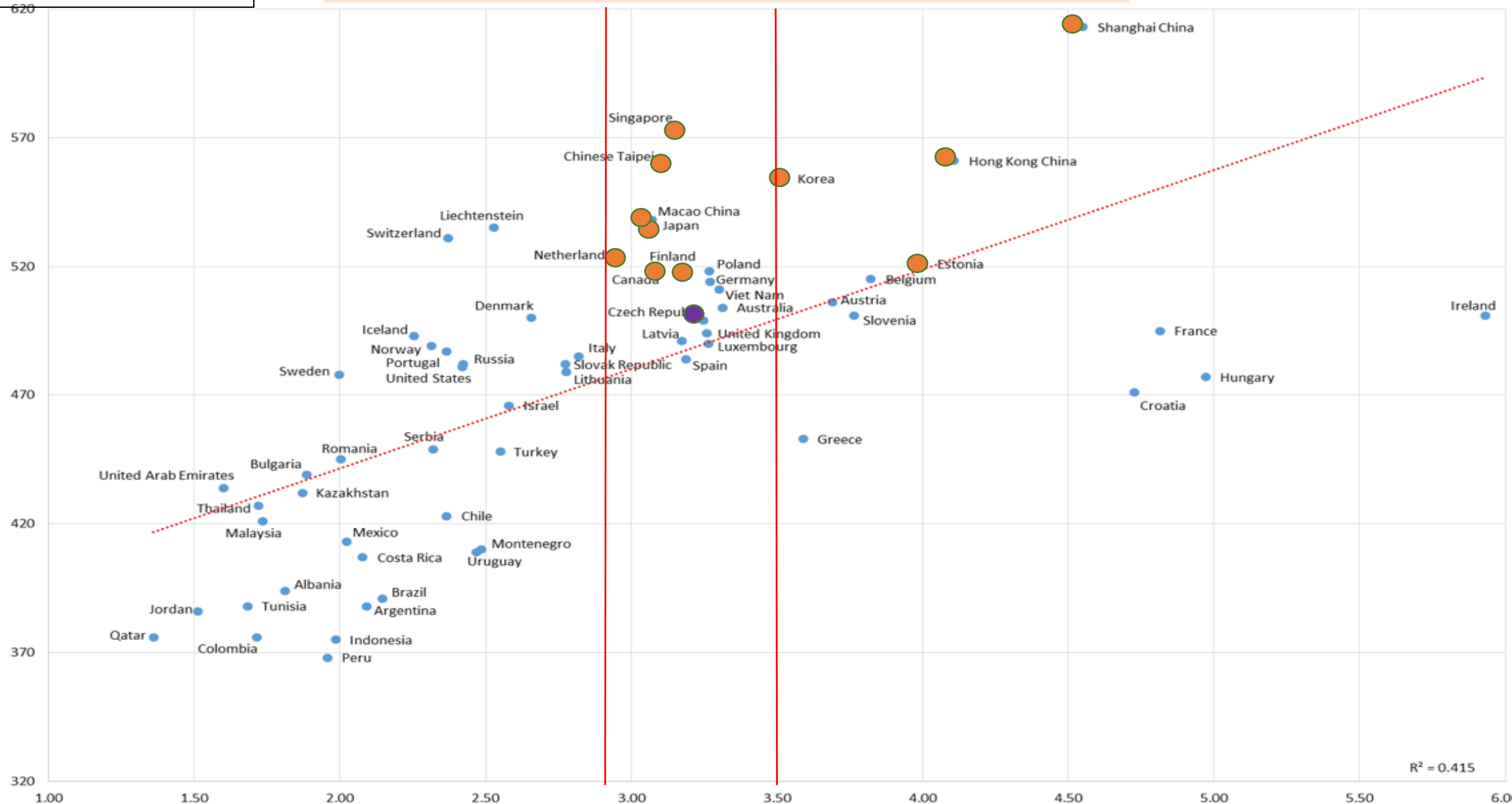
4

5

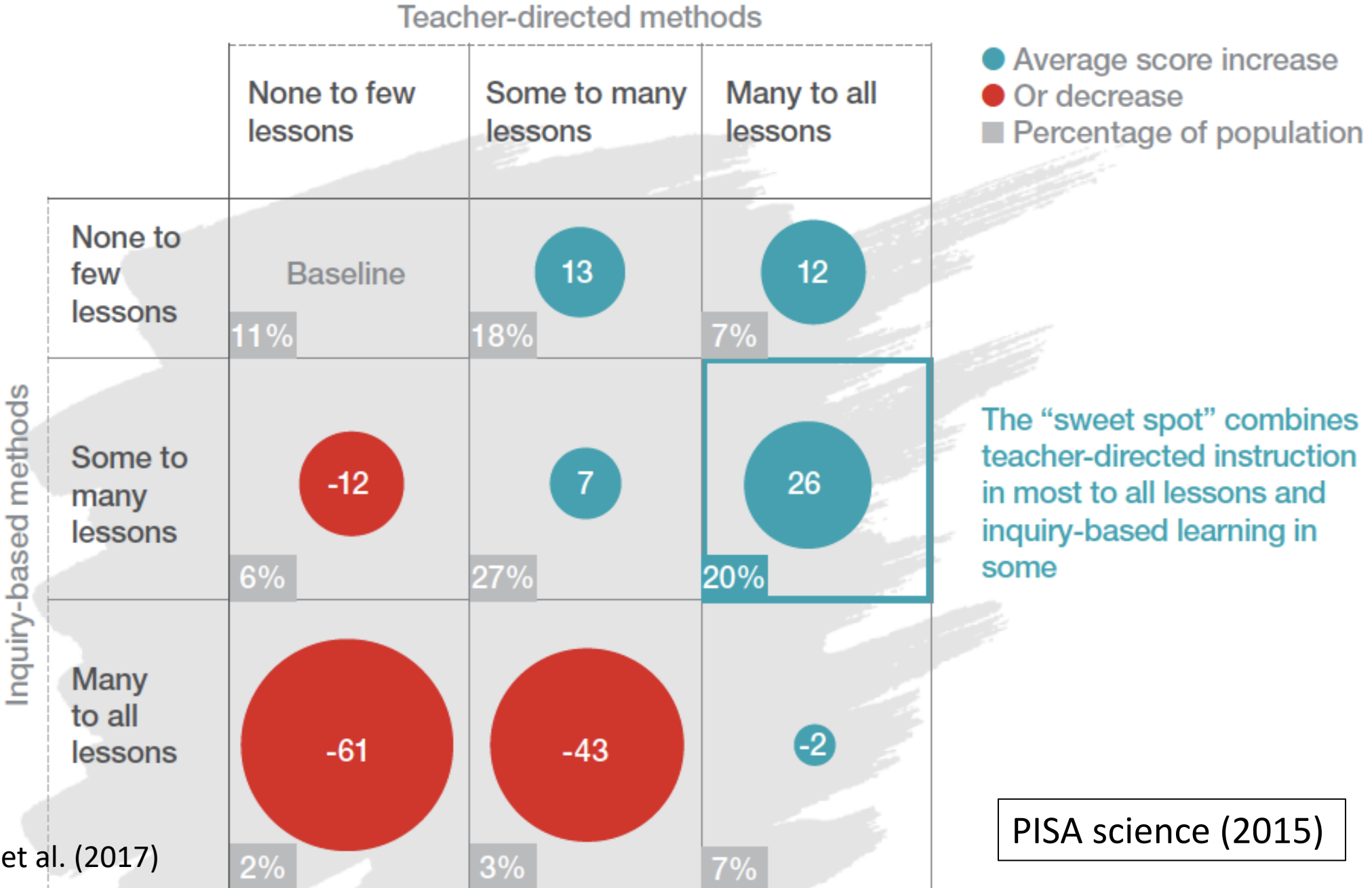
Relatively more student-oriented ←

→ Relatively more teacher-directed

Mathematics score



# McKinsey analysis of teaching practices in PISA Science 2015



PISA science (2015)

From Denoël et al. (2017)





Chronology matters