

Global Learning for Transforming Curriculum in Northern Ireland



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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.

■ Figure 1.2.11 ■

CLIMBING MOUNT FUJI – a unit from the field trial

CLIMBING MOUNT FUJI

Mount Fuji is a famous dormant volcano in Japan

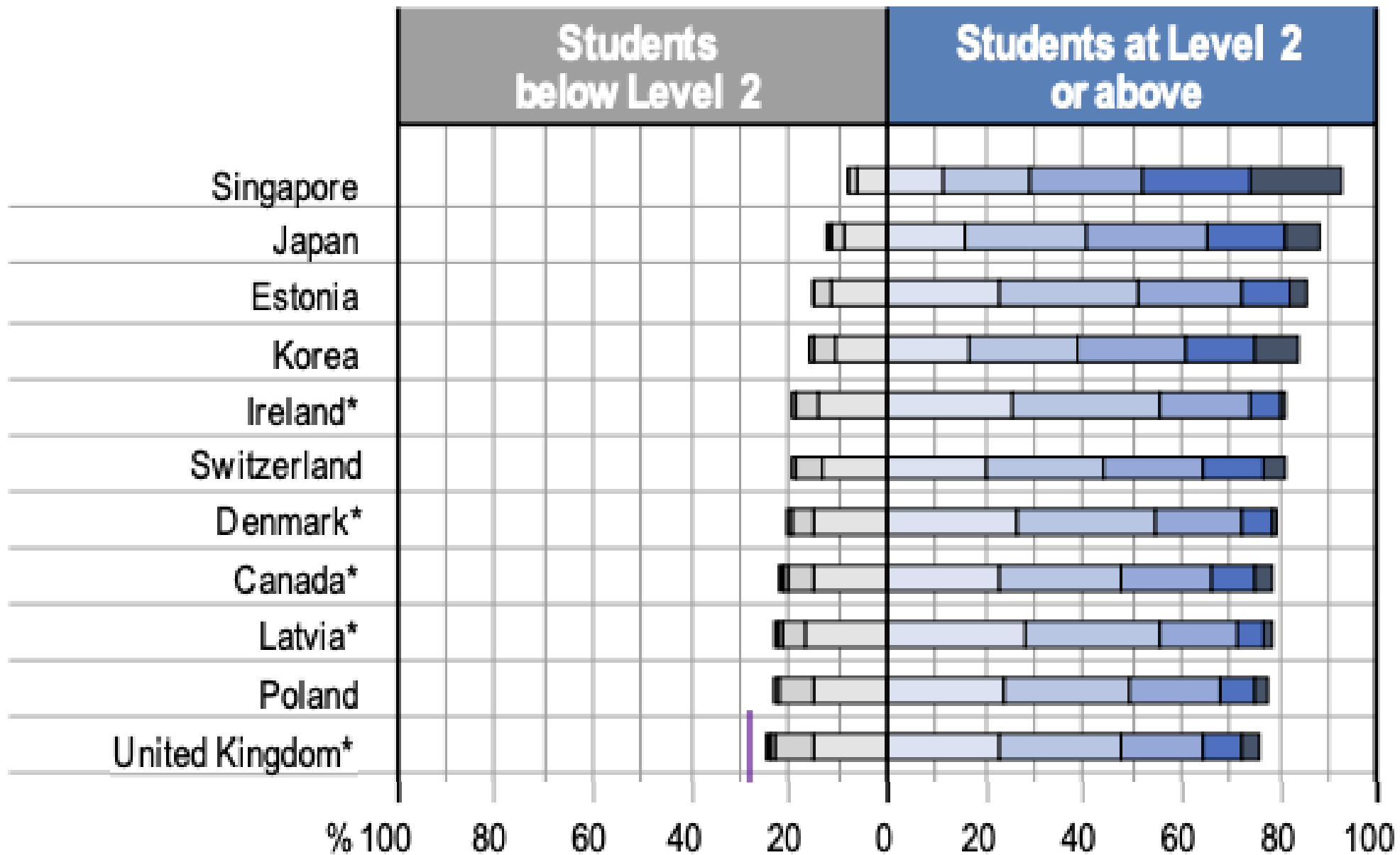


CLIMBING MOUNT FUJI – QUESTION 1

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



In NI, 28% of students who took PISA mathematics (2022) performed below Level 2.



Underlying philosophy: genuinely high expectations



- In the systems I visited, the curriculum clearly specified what children should know and be able to do by the time they left compulsory education.
- This was then an expectation for all children, unless there was a very good reason to change these expectations.

This led to a different understanding of differentiation



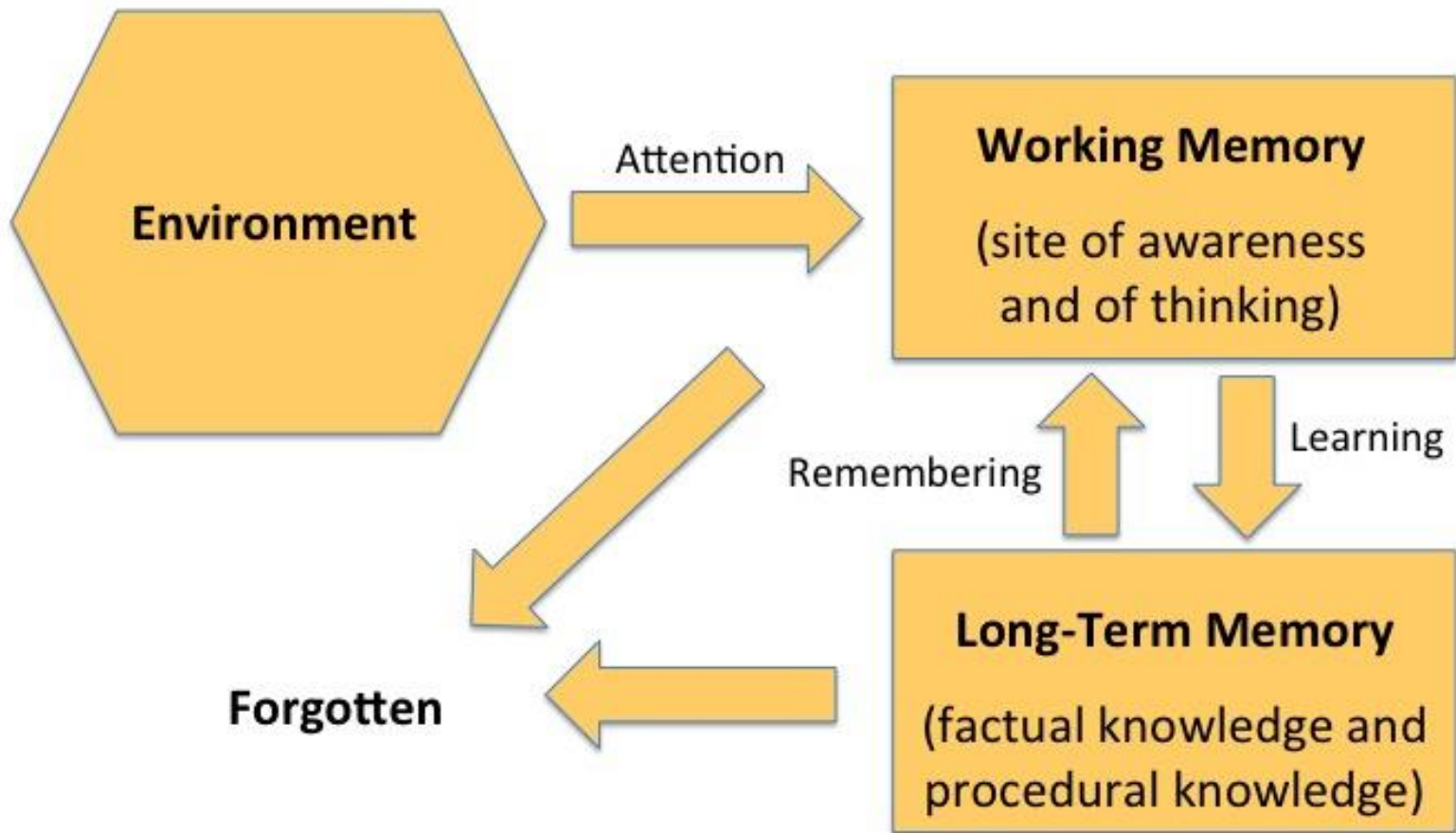
- Within lessons, there was less differentiation **by activity** than in the UK:
 - England (63%),
 - average (44%),
 - Finland (37%),
 - Japan (22%),
 - Korea (20%) (TALIS 2013)
- Instead, the aim is to get all students to meet the goals of the lesson. This still involves differentiation, but it is through varying **support** rather than varying goals.

The Confucian tradition promotes the idea that anyone can succeed



“The clumsy bird that flies first gets to the forest earlier.”
Chinese idiom

“Learning does not privilege anyone, and neither does it discriminate against anyone. Everyone is capable of seeking and achieving knowledge regardless of one’s inborn capacity and social circumstances.”
Jin Li



(Willingham, 2009)

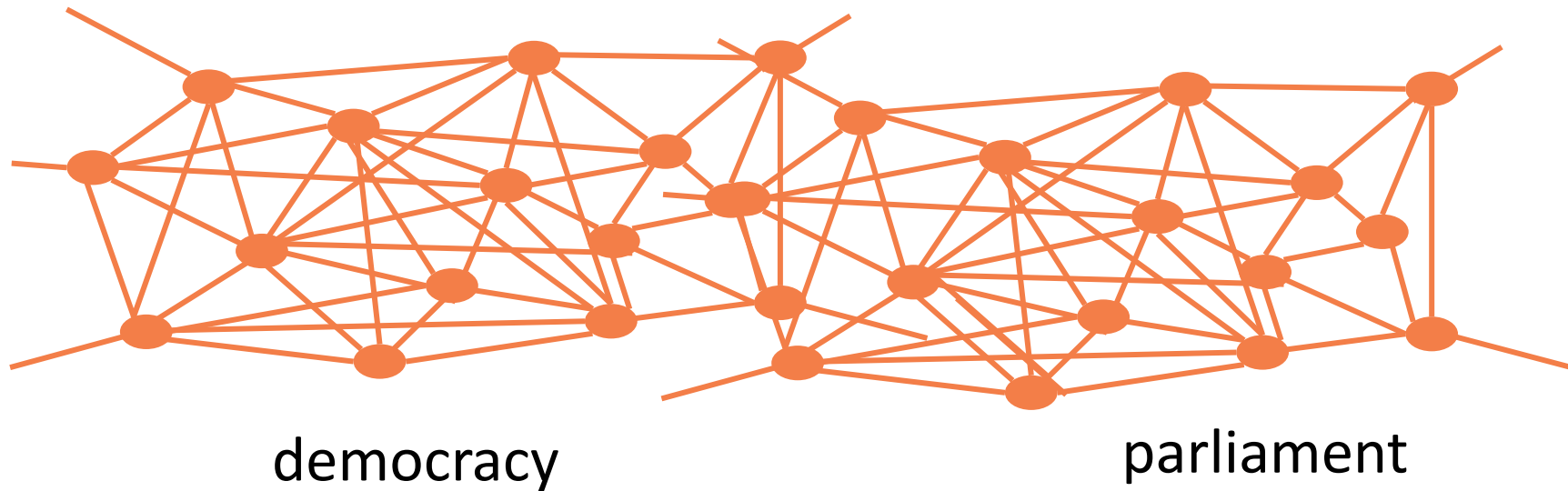
Working memory has a limited capacity to maintain or process new information, and is easily overloaded

GHSFTBSHQLNI

BBC ITN ITV SKY



Your long-term memory is unlimited and can be thought of as networks of connected knowledge called schema.



When established schema are activated by WM, they count as just one 'chunk', leaving enough WM capacity to *use* and *apply* them.

Having secure, connected knowledge in long-term memory:

1. overcomes limitations in working memory (actually making kids cleverer)
2. supports thinking (problem solving, creativity, etc.).

How does this relate to curriculum?

Five Principles for a New Curriculum in Northern Ireland

1. Purpose-led

2. Knowledge-rich

3. Continuous and coherent

4. Specific and focused

5. Inclusive and flexible



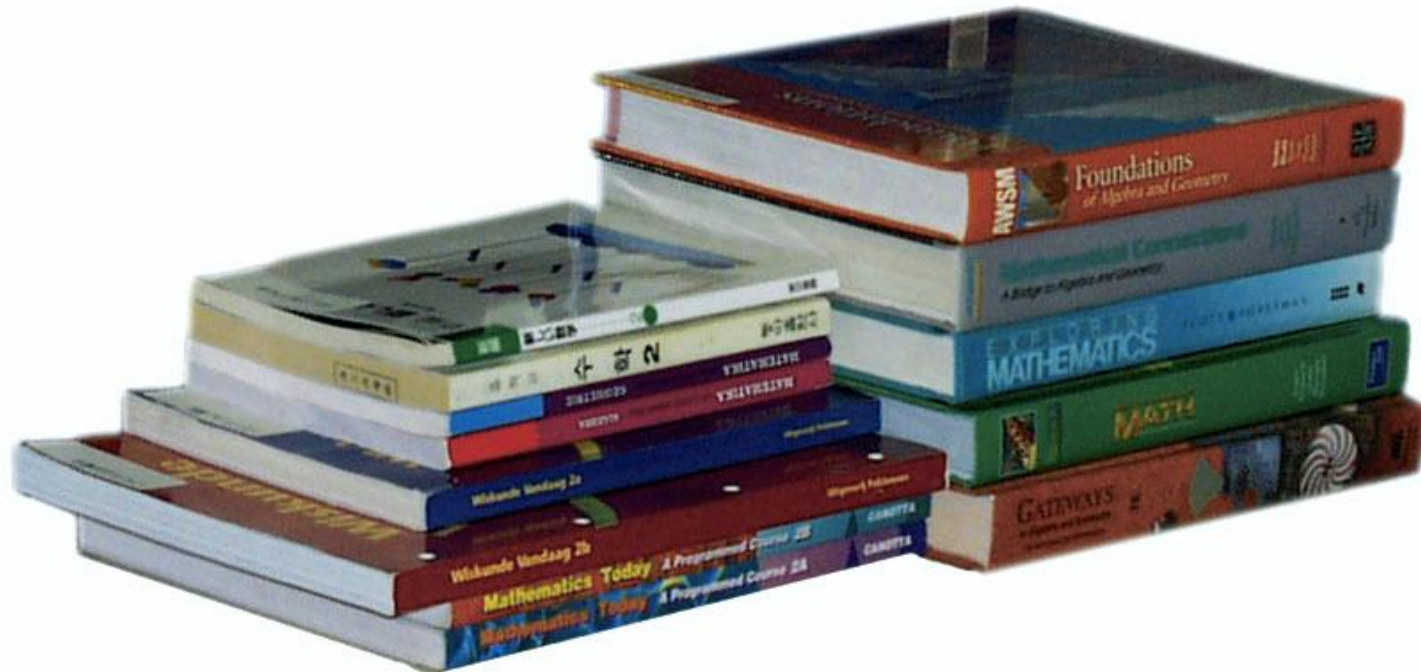
Focus

“The most significant difference I find is the depth of material covered. In Canada they do a little bit of everything, and they do it really fast, before you really get the essence of that part, and then they jump into something else. Whereas in China they go on about some knowledge for quite a long time, maybe several weeks before they move to the next topic, so you get a lot of practice, and you really know it.”

Sophie

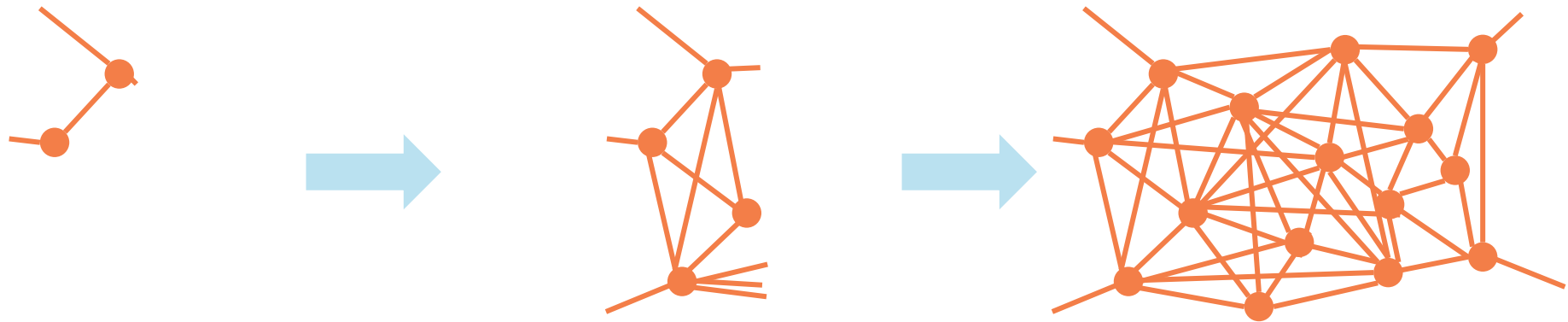
Focus: fewer topics in greater depth

- Fewer topics are taught each year in top-performing countries, allowing for greater depth and time for secure understanding.



- E.g. According to TIMSS data, eighth-grade mathematics textbooks in Japan have around 10 topics, but U.S. eighth-grade textbooks have over 30 topics (Schmidt, 2001).

Coherence: A carefully sequenced curriculum ensures that for every new topic, children have existing schemata to build on to help them make sense of and remember the new learning.



Many thanks

