If you don’t lead with Small Data, you’ll be led by Big Data

uLearn 2018

Auckland, NEW ZEALAND
11th October 2018

pasi_sahlberg
“To PISA, or not to PISA?”
Education GPS is the OECD source for internationally comparable data and analysis on education policies and practices, opportunities and outcomes. Accessible any time, in real time, the Education GPS provides you with the latest information on how countries are working to develop high-quality and equitable education systems.

**Analyse by country**
Choose from a wide variety of themes and data to create your own, customised country reports.

**Explore data**
... By topic and by publication. Compare countries' by their success in providing a high-quality education for all.

**Review education policies**
Examine the OECD’s extensive research and analysis of education policy around the world.
Ice-cream consumption and PISA educational performance scores 2012

R² = 0.49

Mean score on PISA reading scale, 600=best

Sources: OECD; Euromonitor; The Economist

Economist.com
Rugby players join big data battle over ownership and exploitation of personal information
Big Data

“Extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions.”
Data mining

“The process of sorting through large data sets to identify patterns and establish relationships to solve problems through data analysis.”
Learning analytics

“The measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs.”
“Learning to use a "computer" of this scale may be challenging. But the opportunity is great: The new availability of huge amounts of data, along with the statistical tools to crunch these numbers, offers a whole new way of understanding the world. Correlation supersedes causation, and science can advance even without coherent models, unified theories, or really any mechanistic explanation at all.”

—Chris Anderson, Wired 2008
Which one was made by AI?

X

X

X
Can Big Data make education smarter?
Big trends
Processed by machines
Algorithms and analytics
Reveal correlations
Predict the future
What is missing?
Small data?
Big trends
Processed by machines
Algorithms and analytics
Reveal correlations
Predict the future
Tiny clues
Processed by humans
Collective professional wisdom
Reveal causations
Understand the present

BIG DATA
small data
Adrian Piccoli's new institute to look at education's trickiest questions

Whether the ATAR system is discouraging hard work, why some of the top Australian students have declining results and whether families need to play a bigger role in education are some of the thorny questions a new high-profile group of education experts and industry leaders is hoping to answer.

The University of NSW's Gonski Institute for Education, which is led by former NSW education minister Adrian Piccoli and includes and Finland’s Pasi Sahlberg, will hold its first advisory board meeting on Monday.

"One of the aspects that makes us a little bit different is that we'll use the best people from different faculties and take an interdisciplinary approach, because some of the problems we're dealing with are not just limited to schools," Mr Piccoli said.
Why so many kids don’t like mathematics?
Research question:
“What does a mathematician at work look like?”

- Usually fat male
- Unstylish
- No friends - except other mathematicians
- No romantic relationships or social life
- Wrinkles in their forehead from thinking so hard
- Very short tempers
What can you do?
Build trust-based professionalism.
Professional wisdom as evidence.
Lead with Small Data.
Whakawhetai ki a koe