

# Dissemination of TIMSS 2006/07 as a trend study in New Zealand

**Presentation to the IEA 50<sup>th</sup> General Assembly 2009**

Dr Jit Cheung  
Manager

Comparative Education Research Unit, Ministry of Education

Ms Robyn Caygill  
TIMSS NRC

Comparative Education Research Unit, Ministry of Education

# TIMSS – New Zealand speaks

- TIMSS cycles  
1994/95, 1998/99, 2002/03, 2006/07, 2010/11
  - 2 years reflect southern hemisphere timeline
- Year levels for assessment  
year 5 & year 9 (ie 4<sup>th</sup> & 8<sup>th</sup> grades)
  - year 9 first year of specialist maths & science teaching
- TIMSS or TIMMS  
Trends in International Mathematics and Science Study

# New Zealand's participation in TIMSS

## Year 5

1994

1998

2002

2006

2010

## Year 9 (8<sup>th</sup> Grade)

1994/95

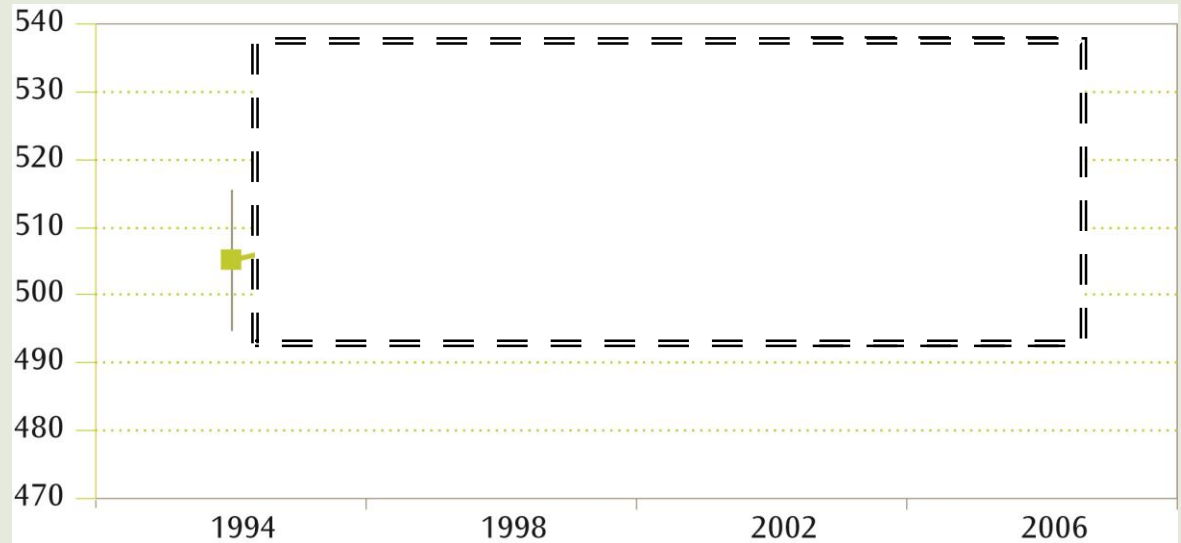
1998/99

2002/03

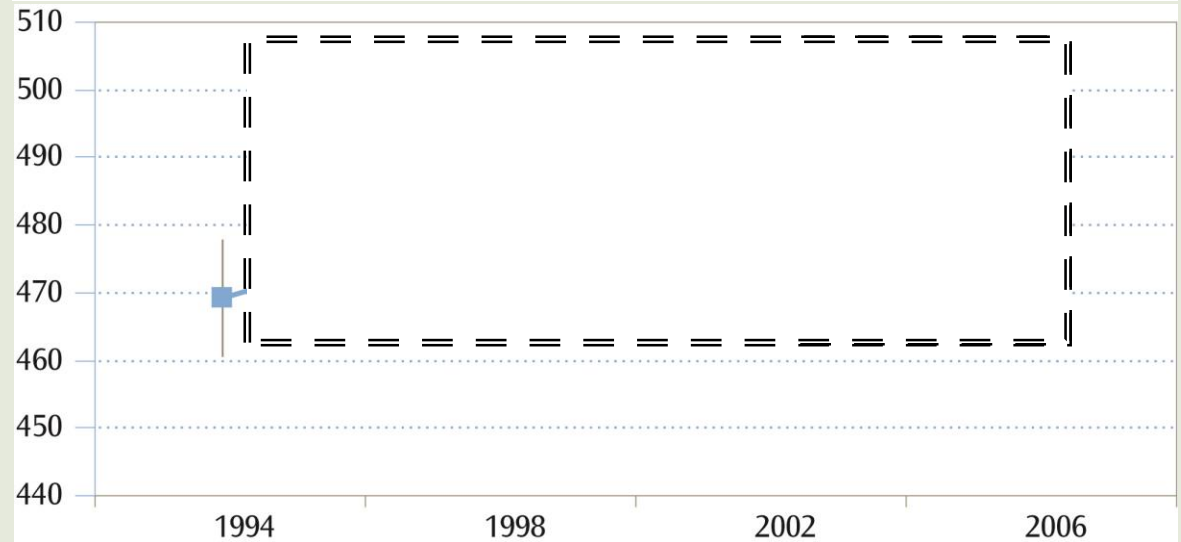
---

2010/11

Mean science achievement 1994 to 2006



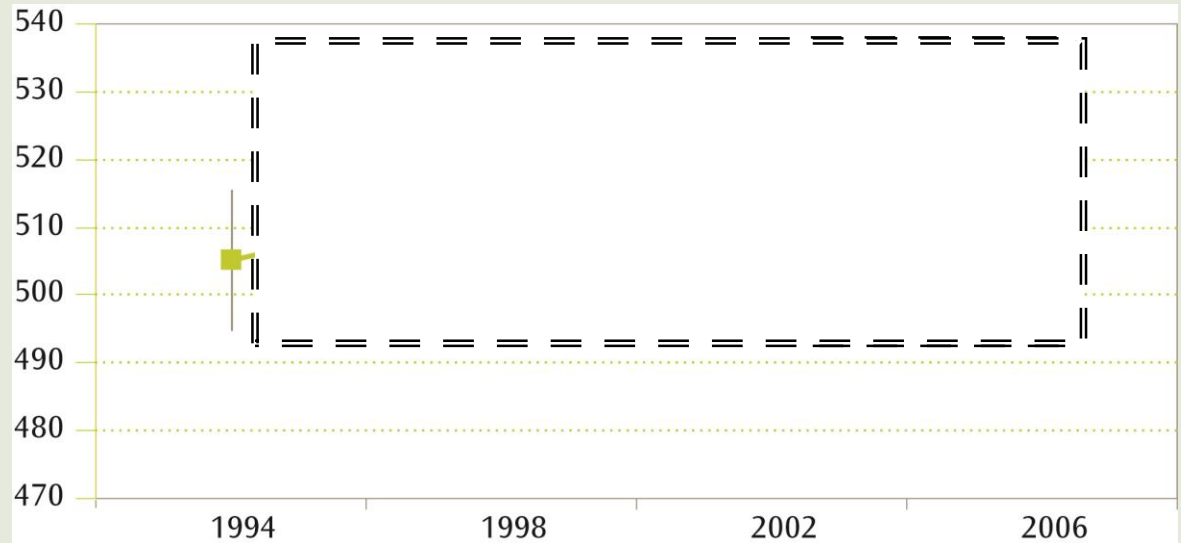
Mean mathematics achievement 1994 to 2006



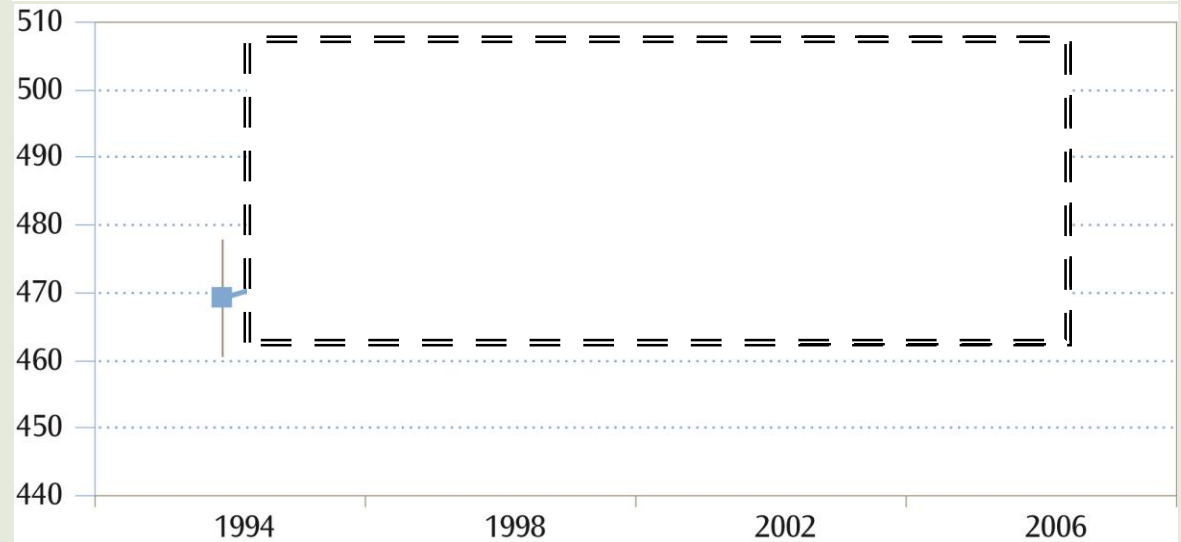
# Impact of TIMSS 1994

- Raised concerns about mathematics and science education
- Mathematics and Science Taskforce established
- Focus on mathematics led to Numeracy Development Projects

Mean science achievement 1994 to 2006



Mean mathematics achievement 1994 to 2006



## Trend 1994 to 2002

- 2002 release celebrated increases in mathematics and science achievement
- Particularly strong improvements among ethnic minorities
- Numeracy Development Projects taken credit, although only small scale implementation

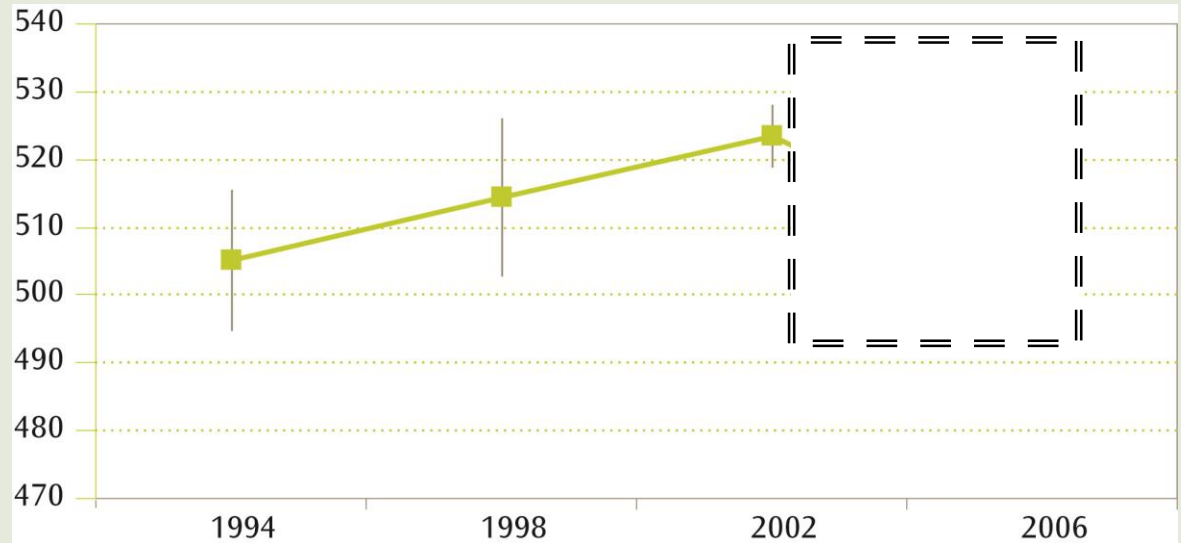
# Timing of 2006 TIMSS release (Dec 2008)

- November 2008 – what's gone before
  - new government, after 9 years of previous administration
  - an annual national education research conference  
ie. news / data fatigue
- December 2008 – what's coming up
  - schools close for summer holiday
  - Christmas – ho ho ho!

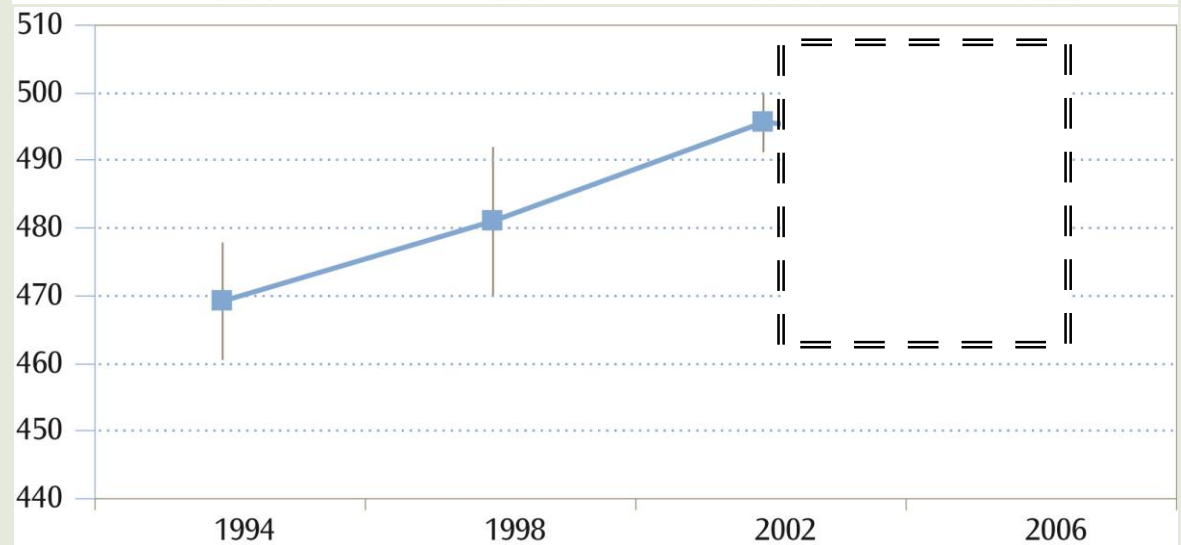
Stage set for a low key release / reception?



Mean science achievement 1994 to 2006



Mean mathematics achievement 1994 to 2006



Media react

# Print report

LANE NICHOLS

PRIMARY school children's achievement has plummeted to a level in 14 years, sparking concern by the Education Ministry.

An international study of New Zealand year 5 pupils are doing worse in maths and science than children in 36 other countries.

Business advocacy group Business New Zealand says the findings are concerning. It said the country is losing its competitive edge by not innovating without a workforce skilled in science, technology and maths.

"All the developed countries are critical, and the fact that we are doing poorly in them is a bit of a concern," executive Phil O'Reilly said.

The *Trends in International Mathematics and Science Study*, which shows maths achievement has declined significantly since 1994 but science has improved since 2002.

Kiwi children's maths results were significantly worse than other surveyed English-speaking countries, including England, the United States — though marginally better than South Korea.

They also did worse than Hong Kong, Japan, Latvia, Italy, Russia, Slovenia, Hungary and Kazakhstan.

The ministry said it plans to introduce a new science-based curriculum next year in a bid to improve results while analysing what works.

# Bullying 'second highest in world'

## One in 3 Kiwi kids say they are victims

MARTIN KAY

KIWI children have reported the second highest incidence of bullying in the world, according to a major international report.

But the primary school teachers' union is urging caution over the findings, which show New Zealand second only to Taiwan when it comes to children saying they have been hit, teased, stolen from or picked on.

Educational Institute president Frances Nelson said New Zealand had a high-profile focus on bullying, meaning Kiwi children were more likely to disclose incidents.

The *Trends in International Mathematics and Science Study*, which covered the equivalent of Year 5 pupils in nearly 40 countries, including 5000 from New Zealand, found Kiwi children reported incidences of bullying behaviour at twice the international average.

One in three Kiwi children said



**Bad behaviour:** Kiwi children report incidences of bullying behaviour at twice the international average.

# poor science



fascinating.

Photo: KENT BLECHYNDEN

# uff, say pupils

my day to my foot got cut, so sometimes you have to be safe with science. When I get older I'd like to make a potion that is a resolution

# TIMSS 2006 science focus

- Concerns centred on science achievement and engagement
  - Results from National Education Monitoring Project (NEMP) for 2007 study echoed the same concerns
- Drop in achievement accompanied by significant drop in teaching hours
- Think piece: “A focus on science”

# TIMSS 2006 mathematics focus

- Surprised by a lack of improvement
  - “Numeracy Development Projects has not been given enough time to imbed?”
- Although results mirrored NEMP
- Researchers observed that
  - TIMSS framework has higher expectations than NZ curriculum
  - Many NZ students not meeting curriculum expectations

# How does PISA fit?

- NZ did well in PISA, but not in TIMSS (or PIRLS)
- In 2006 TIMSS year 9 implementation in NZ gave way to PISA 2006



*“Both of these [TIMSS and PISA] surveys provide important, but different, insights into education around the world. Policymakers and researchers are fortunate to have access to both surveys for purposes of international benchmarking and understanding best practice.”*

Gary Phillips

*“The Second Derivative: International Benchmarks in Mathematics for U.S. States and School Districts”*

# Future of TIMSS in New Zealand

Commitment to continual participation

A plead: please keep barriers to participation low and manageable so we can continue to participate

# Thank you!