

In this country note:

- Background on the 2014 OECD *Measuring Innovation in Education* report (p. 1)
- Key report findings on innovation in education (p. 1)
- Report approach to measuring educational system innovation (p. 2)
- New Zealand’s top five organisational education innovations, 2003-2011 (p. 3)
- New Zealand’s top five pedagogic education innovations, 2003-2011 (p. 4)

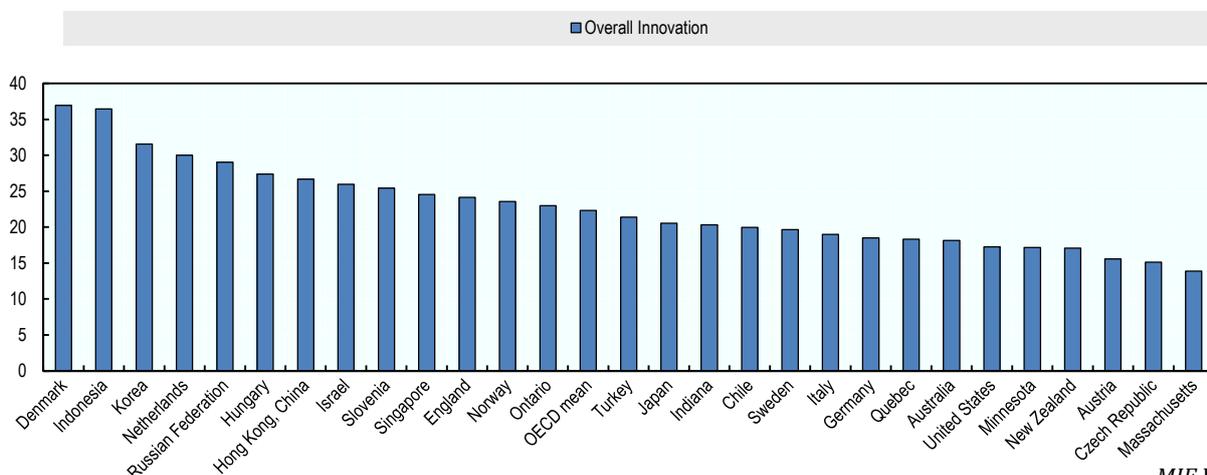
The purpose of the *Measuring Innovation in Education* report

The ability to measure innovation is essential to an improvement strategy in education. Knowing whether, and how much, practices are changing within classrooms and educational organisations, how teachers develop and use their pedagogical resources, and to what extent change can be linked to improvements would provide a substantial increase in the international education knowledge base.

The OECD *Measuring Innovation in Education* report offers new perspectives to address this need for measurement in educational innovation through a comparison of innovation in education to innovation in other sectors, identification of specific innovations across educational systems, and construction of metrics to examine the relationship between educational innovation and changes in educational outcomes. This country brief provides a short overview of the key findings of the report, as well as the top five pedagogic and organisational innovations in New Zealand identified by this report.

Key findings on innovation in education – did you know?

Overall composite innovation index, 2000-2011



MIE Figure 17.1

- In education, innovation can take place through either significant changes in the use of a particular educational practice or the emergence of new practices in an educational system.
- Contrary to common belief, there is a fair level of innovation in the education sector, both relative to other sectors and in absolute terms.
- Within education, innovation intensity is greatest in higher education, with secondary and primary education approximately equal.
- Compared to other sectors, knowledge and method innovation is above average in education, product and service innovation is below average, and technology innovation is at the average sectorial level.
- In Europe, higher education stands out in terms of speed of adopting innovation compared to the economy average as well as the rates in primary and secondary education.

- There have been large increases in innovative pedagogic practices across all countries studied for this report in areas such as relating lessons to real life, higher order skills, data and text interpretation and personalisation of teaching.
- In their pedagogic practice, educators have innovated in their use of assessments and in the accessibility and use of support resources for instruction.
- Educational organisations have innovated in the areas of special education, creation of professional learning communities for teachers, evaluation and analytics and relationship building with external stakeholders, such as parents.
- In general, countries with greater levels of innovation see increases in certain educational outcomes, including higher (and improving) 8th grade mathematics performance, more equitable learning outcomes across ability and more satisfied teachers.
- Innovative educational systems generally have higher expenditures than non-innovative systems; however, their students are no more satisfied than those in less innovative systems.

Approach to measuring system innovations

While *Measuring Innovation in Education* identifies and analyses hundreds of innovations at the classroom and organisational levels, this brief identifies the top five innovations in New Zealand in pedagogic and organisational practices between 2003 and 2011. To determine each educational system's top five innovations in pedagogic and organisational practices, data from three international education datasets – Trends in International Mathematics and Science Study (TIMSS), Progress in International Reading Literacy Study (PIRLS), and the Programme on International Student Assessment (PISA) – were analysed to identify the areas in which each education system has demonstrated emerging or changing organisational and pedagogic practices over a specific period. For a full description of the data and methods used for analysis in this report, see report Annex A: Data Sources and Methods.

Please cite this publication as: OECD (2014), *Measuring Innovation in Education: A New Perspective*, Educational Research and Innovation, OECD Publishing. <http://dx.doi.org/10.1787/9789264215696-en>

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Note regarding data from Israel

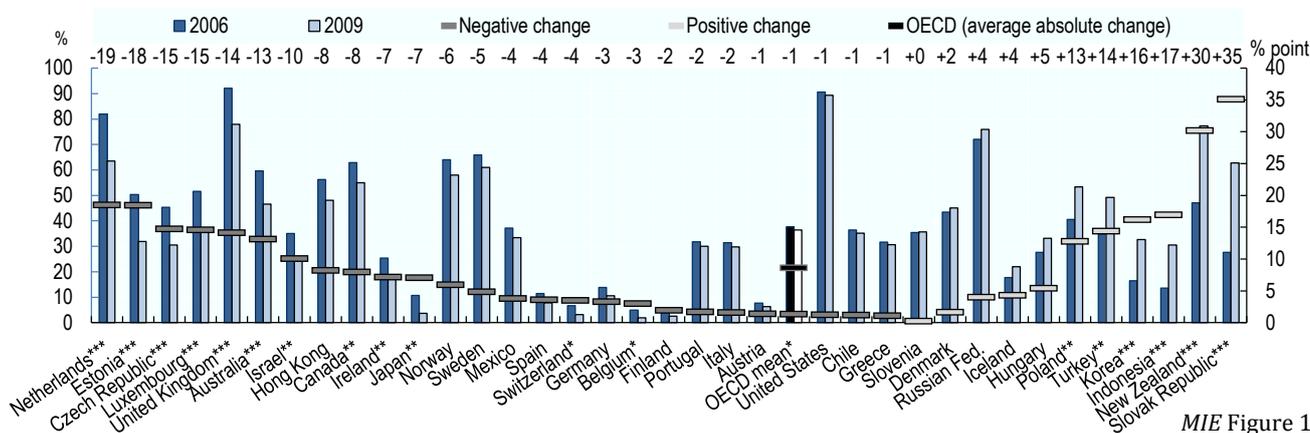
The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

<p>Country Note Authors: Dara Fisher Dara.Fisher@oecd.org Stéphan Vincent-Lancrin Stephan.Vincent-Lancrin@oecd.org</p>	<p>Questions can be directed to: Stéphan Vincent-Lancrin Stephan.Vincent-Lancrin@oecd.org</p>
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New Zealand's top five innovations in organisational policy and practice:

(1) More public posting of secondary achievement data...

Percentage of 15-year old students in schools where achievement data are publicly posted and change over time



MIE Figure 16.10

One of the top innovations in secondary schools in New Zealand was an increase in dissemination of secondary school achievement data. Between 2006 and 2009, the percentage of 15-year olds in schools where achievement data are publicly posted increased by 30% points, the second-largest gain of any educational system analysed in this report.

(2) More peer evaluation of teachers in primary and secondary education...

Another top innovation in primary and secondary schools in New Zealand was the increased use of teacher peer review. The country saw significant changes in peer review evaluation of teacher practices for both 8th grade mathematics and science classrooms (increases by 21% points each between 2003 and 2011). In addition, significant changes were observed in peer review evaluation of teachers' practices in 4th grade, with an observed difference of 23% points in the same period.

(3) More external evaluation of primary and secondary school classrooms...

Primary and secondary schools in New Zealand underwent frequent observations of teachers' practices by inspectors or other persons external to the school. Between 2003 and 2011, New Zealand saw a 26% point increase in the percentage of 4th grade students in schools in which observations by external evaluators were used to evaluate the practices of their teachers, the largest change of any system analysed in this report. Over the same period, 8th grade science and mathematics students saw 12% point increases in this metric.

(4) More comparative information provided to parents...

Between 2006 and 2009, New Zealand experienced a 14% point increase in the percentage of 15-year old students in schools that provide information to parents on the academic performance of students relative to students in the same grade at other schools. This change represents the second-largest increase in this metric of any educational system, and is well above the OECD mean change over this period of -2% points.

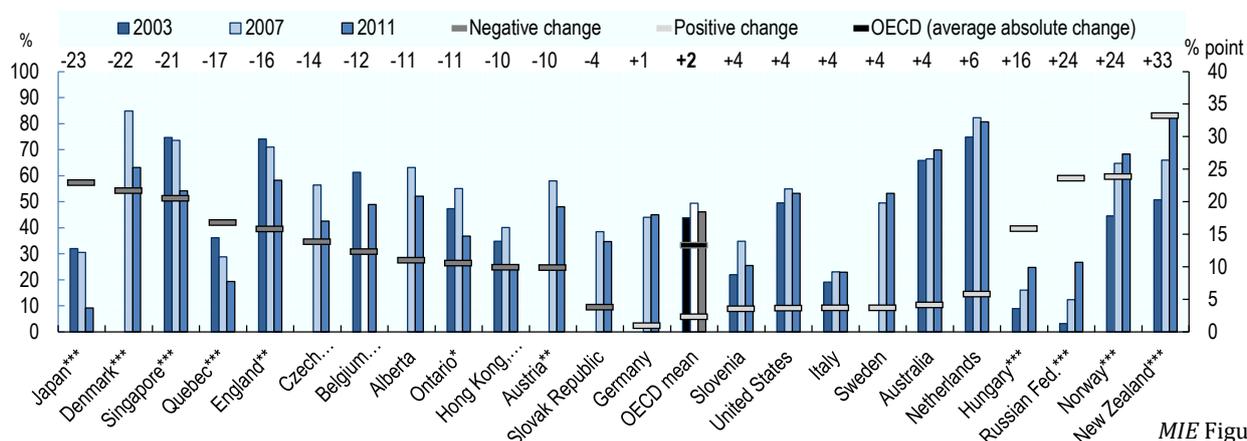
(5) More use of achievement data to evaluate principals...

Finally, the New Zealand education system experienced innovation in the use of achievement data to make judgements regarding principal performance, with an increase of 11% points in the percentage of 15-year olds enrolled in schools where achievement data are used for evaluating principal performance between 2006 and 2009.

New Zealand's top five innovations in pedagogic practice:

(1) More use of computers in primary school mathematics...

Percentage of 4th grade mathematics students using computers to practice skills and procedures at least sometimes and change over time



MIE Figure 11.3

New Zealand's top pedagogic innovation is the practice of using computer-based resources in 4th grade mathematics instruction. Between 2003 and 2011, the percentage of 4th grade students in New Zealand who use computers to practice skills and procedures in at least some of their mathematics lessons increased by 33% points. These changes are the largest of any educational system analysed for this metric; the OECD average change over the same period was a 2% point increase.

(2) More use of textbooks as supplementary resources in primary school science...

The use of textbooks as supplementary resources for primary education instruction also increased in New Zealand from 2003 to 2011. When textbooks are used as supplementary – as opposed to primary – materials in the classroom, students may be exposed to more diverse teaching practices, illustrating potential innovation in pedagogical methods. Between 2003 and 2011, New Zealand saw a difference of 29% points in the percentage of 4th grade students whose science teachers use textbooks as a supplementary resource in the classroom.

(3) More Internet availability in primary mathematics classrooms...

New Zealand also saw innovation in the availability of the Internet in primary mathematics classrooms. Between 2003 and 2011, the percentage of 4th grade mathematics students in New Zealand with Internet access in their classrooms increased by 22% points, the third-largest positive change in this metric of any educational system analysed in this report.

(4) More use of computers in primary mathematics classrooms...

Another pedagogic innovation in New Zealand is the use of computers as resources in 4th grade mathematics instruction. Between 2003 and 2011, the percentage of 4th grade students in New Zealand using computers to look up ideas and information in their mathematics classes increased by 23% points. This absolute change was the largest in this metric of any educational system analysed in this report.

(5) More computer availability in primary mathematics classrooms...

Finally, teachers in New Zealand reported significant increases in the extent to which primary school students had access to computers in primary classrooms. Between 2003 and 2011, the percentage of 4th grade students in New Zealand with access to computers in their mathematics classrooms rose from 69.8% to 86.6%, the fourth-largest gain in this metric of any educational system included in this report.