

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)
- Norway’s top five organisational education innovations, 2003-2011 (p. 3)
- Norway’s top five pedagogic education innovations, 2003-2011 (p. 4)

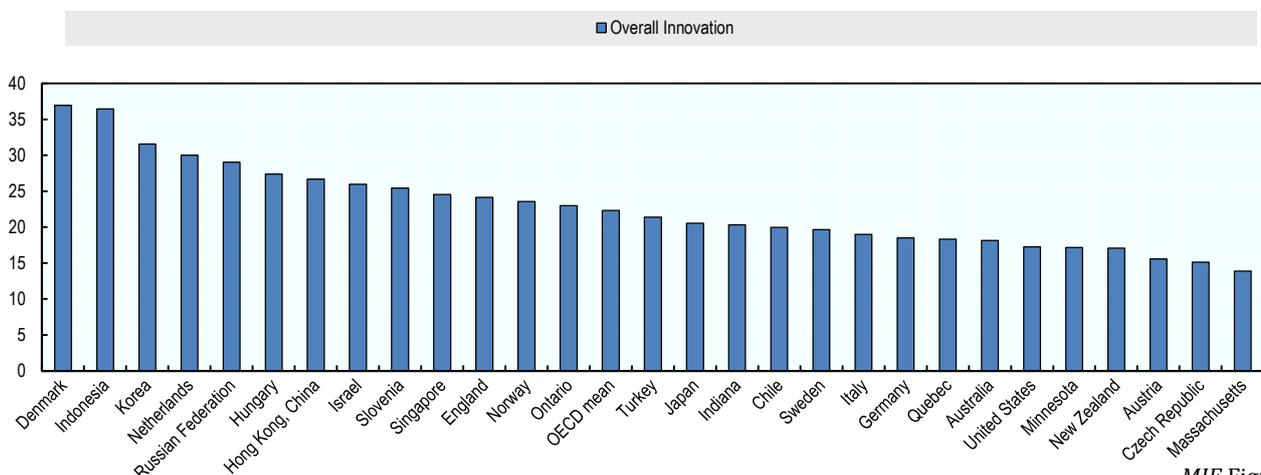
The purpose of the *Measuring Innovation in Education* report

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 Norwegian pedagogic and organisational innovations identified in 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 Norwegian innovations 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.

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Note regarding data from Israel

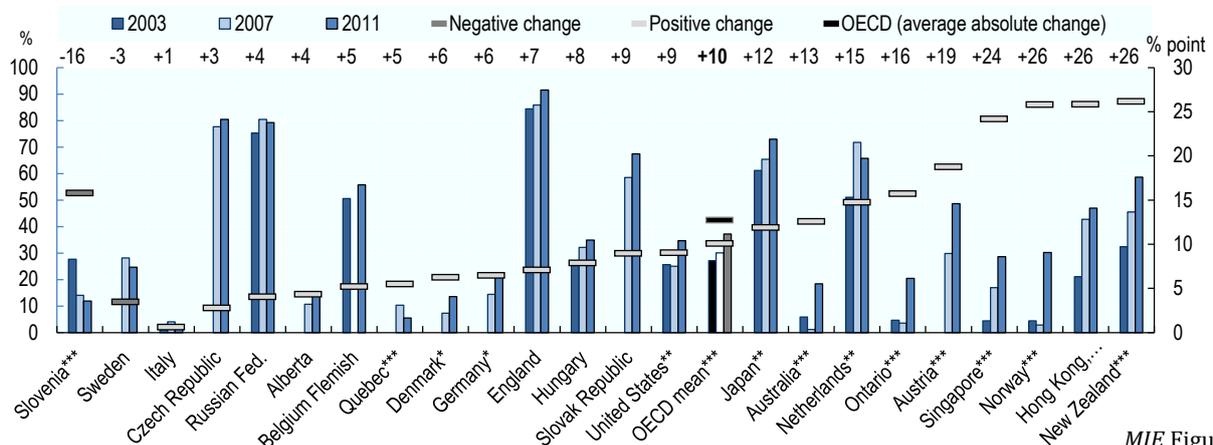
The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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Norway's top five innovations in organisational policy and practice:

(1) More external evaluation of primary school classrooms...

Percentage of 4th grade students in schools in which observations by inspectors or other persons external to the school are used to evaluate the practice of teachers and change over time



MIE Figure 15.6

One of the top innovations in Norwegian primary and secondary schools was the increased use of classroom observations by inspectors or other persons external to a school. Between 2003 and 2011, Norway saw a 26% point difference in the percentage of 4th grade students in schools in which observations by external evaluators were used to evaluate the practices of their teachers.

(2) More use of student assessments for monitoring school progress...

Between 2000 and 2009, Norway saw a 19% point difference in the percentage of 15-year old students in schools where assessments are used for monitoring progress from year-to-year. In contrast, the OECD average change in this metric over the same period was an increase of 9% points.

(3) More tracking of secondary achievement data...

Between 2006 and 2009, the percentage of 15-year old students in Norway in schools where achievement data is tracked over time by an administrative authority increased by 19.8% points, from 52.9% to 72.7%. This increase was the third-largest in this metric of any educational system analysed for this report.

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

The Norwegian education system also experienced innovation in the use of achievement data to make judgements regarding principal performance, with an increase of 17% points in the percentage of 15-year olds enrolled in schools where achievement data are used for evaluating principal performance between 2006 and 2009. While this change was well above the OECD mean difference over this period (3% point change), it was far below the educational system with the largest change in this metric, Slovenia (49% point change).

(5) More parental involvement in school projects, programmes and trips...

In both primary and secondary education, another innovation in Norway was increased parental volunteering in projects, programmes or trips in their child's school. Between 2003 and 2007, parents of 8th grade students in Norway saw an increase of 13% points in the frequency of invitations to volunteer for projects, programmes and trips, while parents of 4th grade students saw an increase of 7% points in this metric over the same period. These increases were well above the OECD average difference in this metric, which was 2% points for parents of 8th grade students and 1% point for parents of 4th grade students.

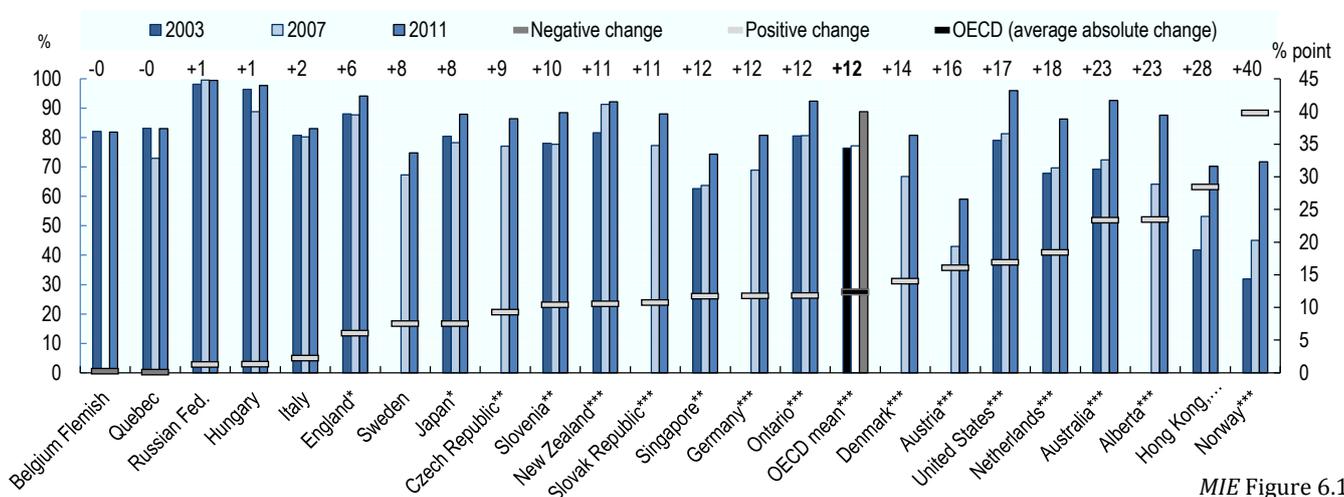
Norway's top five innovations in pedagogic practice:

(1) More self-direction in primary reading lessons...

Between 2001 and 2011, according to teacher reports, the percentage of 4th grade students in Norway whose teachers give them time to read books of their own choosing at least once a month increased by 34% points. Over the same period, Norwegian students reported a similar, though more modest, gain of 14% points in the same metric, illustrating some discrepancies between teacher and student reports. These gains reported by students and teachers were the largest, respectively, of any educational system included in this report.

(2) More use of answer explanation in primary mathematics...

Percentage of 4th grade students whose teachers ask them to explain answers in at least half of their mathematics lessons and change over time



MIE Figure 6.14

Innovation in the form of an increase in the practice of asking students to elaborate on their answers occurred in primary mathematics classes in Norway. Between 2003 and 2011, the proportion of students explaining answers during 4th grade math lessons increased by 40% points in Norway (according to teacher reports), the largest gain in this metric of any system included in this report. It is worthwhile to note, however, that the Norwegian value for this metric in 2011 (71.7%) was lower than the OECD average (88.8%).

(3) More relating of lessons to real life in primary school reading...

Between 2001 and 2011, Norway saw a 38% point gain in the percentage of students whose teachers ask them to relate what they read in 4th grade reading instruction with their own experiences in at least half of their lessons.

(4) More Internet availability in primary and secondary classrooms...

Norway also saw large gains in the proportion of primary and secondary students with access to the Internet in the classroom. Between 2003 and 2011, the percentage of 8th grade mathematics and science students with Internet access in their classroom rose by 23% points; over the same period this metric rose by 33% points for 4th grade mathematics students and 24% points for 4th grade science students.

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

Finally, Norway demonstrated innovation in the practice of using textbooks as primary resources in 4th grade science instruction. Between 2001 and 2006, the percentage of Norwegian 4th grade students whose teachers use textbooks as a primary basis for science instruction increased by 30% points.