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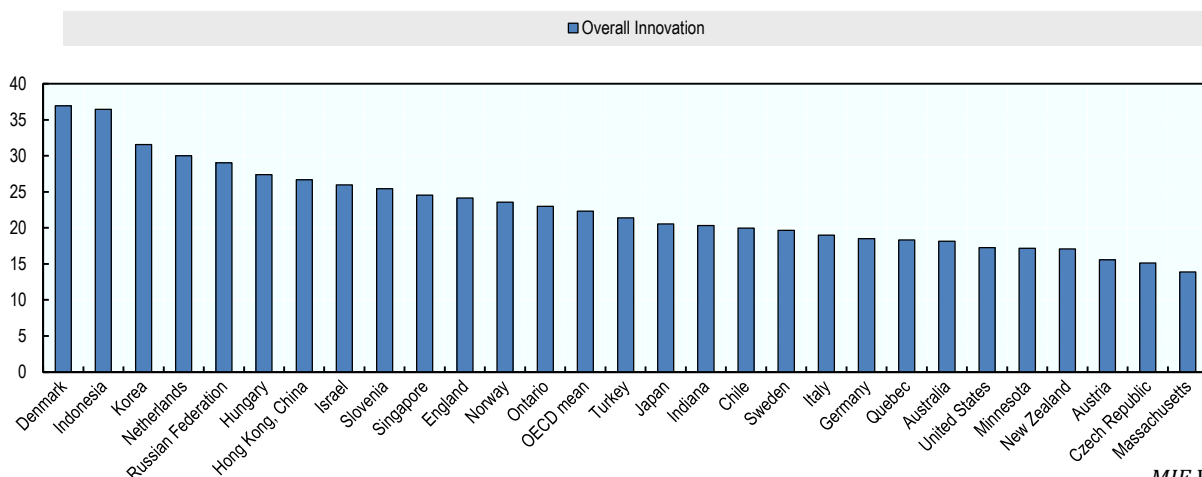
The purpose of the *Measuring Innovation in Education* report

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 Korean pedagogic and organisational innovations 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 Korean 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

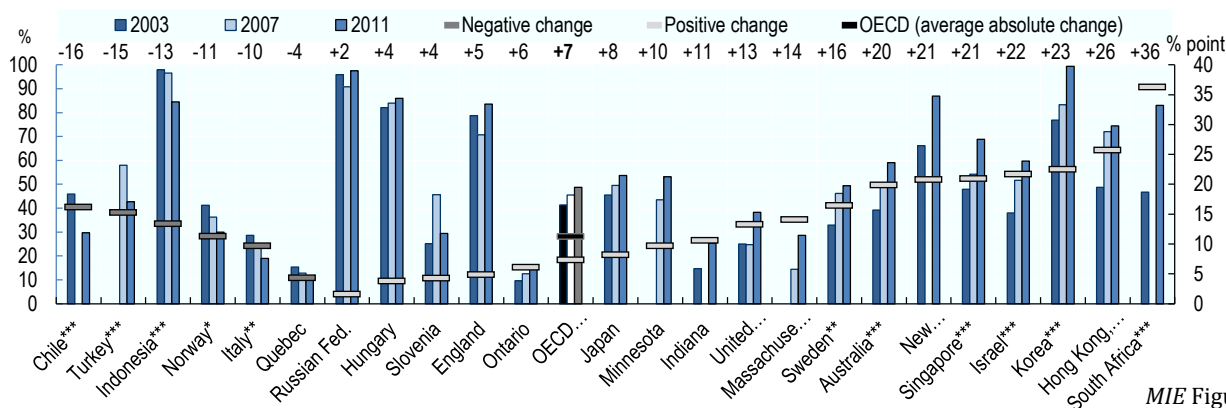
The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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

(1) More peer evaluation of teachers in secondary education...

Percentage of 8th grade mathematics students in schools in which peer review is used to evaluate the practice of teachers and change over time



MIE Figure 15.7

One of the top innovations in Korean secondary schools is 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 23% points and 22% points, respectively, between 2003 and 2011). As of 2011, more than 99% of 8th grade students in Korea were enrolled in schools employing peer review to evaluate mathematics or science teachers, the largest proportion of any educational system in this report.

(2) More remedial education in secondary schools...

Korea also demonstrated innovation in the provision of remedial education at the secondary school level. Between 1999 and 2007, the percentage of Korean 8th grade students in schools that offer remedial mathematics programs increased by 54% points, the largest increase of any educational system in this report. The percentage of 8th grade students in schools offering remedial science education also increased over this period, rising by 14% points between 1999 and 2007.

(3) More enrichment education in secondary schools...

Another top organisational innovation in secondary schools in Korea is the availability of enrichment education for 8th grade students. Korea saw the largest gain of any system in the percentage of students in schools offering enrichment mathematics between 1999 and 2007, with an increase of 41% points from 26.5% to 67.5%. The provision of 8th grade enrichment science also grew over this period, with an increase of 15.2% points (from 21.4% to 36.6%) in the percentage of students enrolled in a school with such a programme.

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

Between 2006 and 2009, the percentage of 15-year old students in Korea in schools where achievement data were tracked over time by an administrative authority increased by 23.5% points, from 33.2% to 55.7%. This increase was the largest in this metric of any educational system analysed for this report.

(5) More fundraising and outreach by school principals...

Finally, the Korean education system experienced innovation in public relations of school principals, with an increase of 19% points in the percentage of 15-year olds enrolled in schools in which the principal spends 10% or more of his/her time on public relations and fundraising. Of the educational systems analysed in this report, Korea saw the largest change in this metric; Québec, the system with the second-largest increase, had a system-level change of 15% points over this period.

Korea's top five innovations in pedagogic practice:

(1) More relating of lessons to real life in secondary school science...

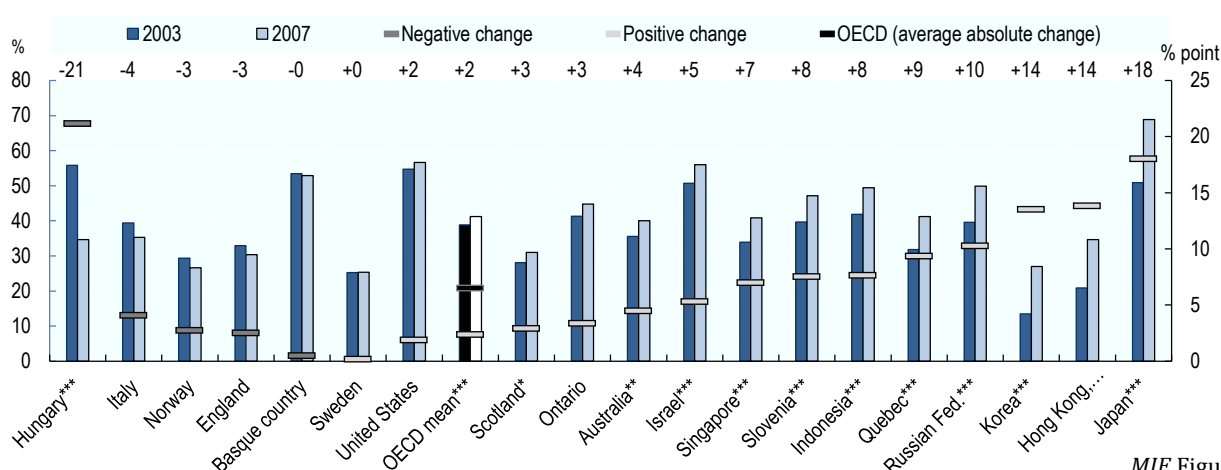
Korea's top pedagogic innovation is the practice of relating content in secondary science lessons to students' daily life. Between 2003 and 2011, Korea saw a 25% point increase in the percentage of 8th grade students whose science teachers ask them to relate what they learn in class to their daily life in at least half of their lessons (as per teacher reports).

(2) More active learning in secondary science lessons...

Between 2007 and 2011, according to teacher reports, Korea saw a 13% point difference in the percentage of 8th grade students who were asked to explain what they are studying in at least half of their science lessons, a practice that encourages critical thinking and scientific communication.

(3) More data interpretation in secondary mathematics lessons...

Percentage of 8th grade mathematics students reporting that they interpret data in tables, figures or graphs in half of the classes or more and change over time



MIE Figure 6.8

Korea also saw innovation in the pedagogic practice of requiring students to perform data interpretation in secondary mathematics lessons. Between 2003 and 2007, the percentage of 8th grade mathematics students in Korea reporting that they interpret data in tables, figures or graphs in their classes increased by 14% points, the third-largest positive change of any educational system analysed in this report.

(4) More use of textbooks as primary resources in secondary classrooms...

Another Korean pedagogic innovation is the use of textbooks as primary resources in 8th grade mathematics and science instruction. Between 2003 and 2011, the percentage of Korean 8th grade students whose teachers use textbooks as a primary basis for mathematics instruction increased by 8% points, while the use of textbooks as primary resources in 8th grade science instruction increased by 10% points. These changes are lower than the mean differences for OECD countries over the same period, however, which were 9% points and 13% points for mathematics and science, respectively.

(5) More use of experiment demonstrations in secondary science lessons...

Finally, according to students, Korea saw significant increases in the extent to which experimental demonstrations were used in secondary science lessons. Between 2003 and 2007, the percentage of Korean 8th grade students who watched the teacher demonstrate an experiment or investigation in their science classes rose by 14.5% points, from 31.3% to 45.8%.