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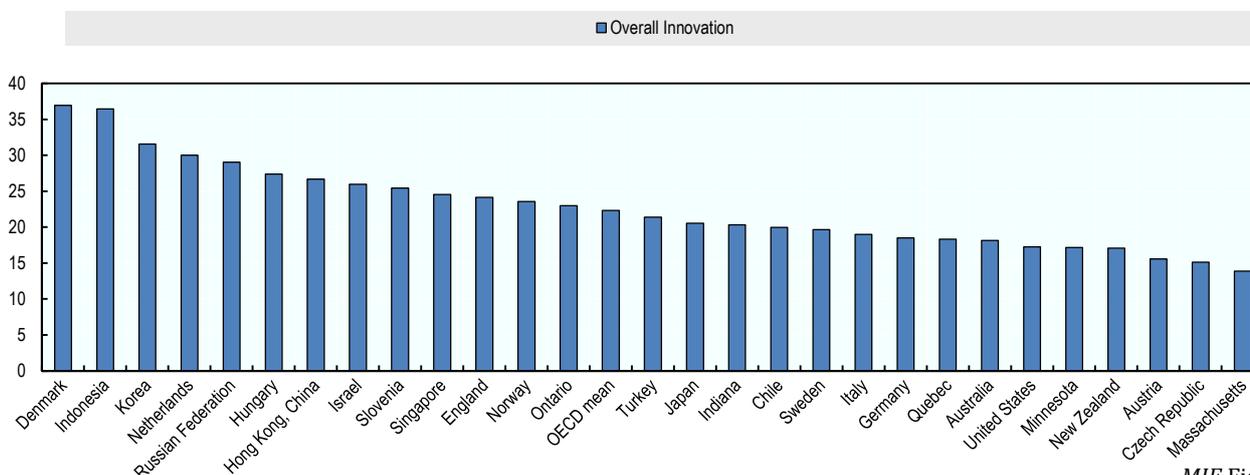
The purpose of the *Measuring Innovation in Education* report

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 Russian 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 Russian innovations in pedagogic and organisational practices between 2003 and 2011. To determine each educational system's top 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

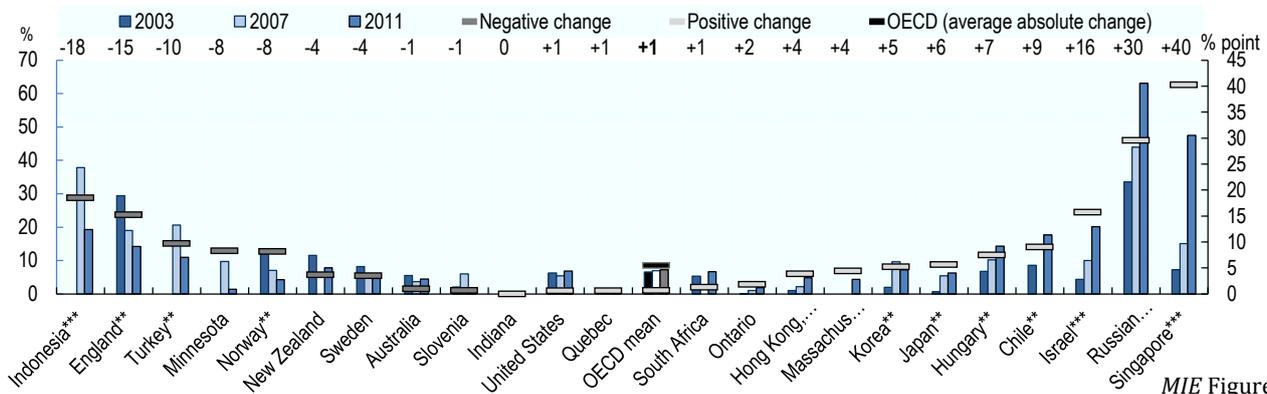
The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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Russia's top innovations in organisational policy and practice:

(1) More use of incentives for teachers...

Percentage of 8th grade science students in schools which currently use any incentives to recruit or retain teachers and change over time



MIE Figure 15.11

In both primary and secondary education, Russia's largest organisational innovation was an increase in the use of incentives to promote teacher retention in schools. Between 2003 and 2011, the percentage of 8th grade mathematics students in schools using any incentives to recruit or retain teachers rose from 34.0% to 61.9%; over the same period, the proportion of 8th grade science students in such schools rose from 33.5% to 63.1%. From 2003 to 2007, the proportion of 4th grade students in schools with teacher incentives rose from 26.2% to 37.5%, the largest gain in this metric of any educational system included in this report.

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

Another top Russian organisational innovation was the use of student assessments for monitoring progress over time. Between 2000 and 2009, Russia saw a 14% point difference in the percentage of 15-year old students in schools where assessments are used for monitoring progress from year-to-year; as of 2009, over 98% of all Russian secondary students were enrolled in schools using this practice.

(3) More remedial mathematics and science education in primary schools...

Educational innovation has also resulted in increased availability of remedial education in math and science at the primary school level. Between 2003 and 2007, the proportion of 4th grade students in Russia in schools that offer remedial mathematics education rose by 26% points; over the same period, the percentage of students in schools that offer remedial science education increased by 13% points. These gains were the largest in this metric of any educational system analysed in this report.

(4) More enrichment education in primary schools...

Another top organisational innovation in primary schools in Russia was the availability of enrichment education for 4th grade students. Between 2003 and 2007, the percentage of Russian 4th grade students in schools that offer enrichment mathematics increased from 11.5% to 26.7%. The percentage of Russian 4th grade students in schools offering enrichment science also rose in this period, increasing from 9.2% to 15.6%.

(5) More parental service on school committees...

Innovation in parental involvement in education can be indicated by increases in parental invitations to join school committees at either the primary or the secondary level. Between 2003 and 2007, invitations for parental participation in 8th grade school committees in Russia saw a significant increase of 9% points. For the parents of 4th grade students, Russia saw an 8% point gain in this metric.

Russia's top innovations in pedagogic practice:

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

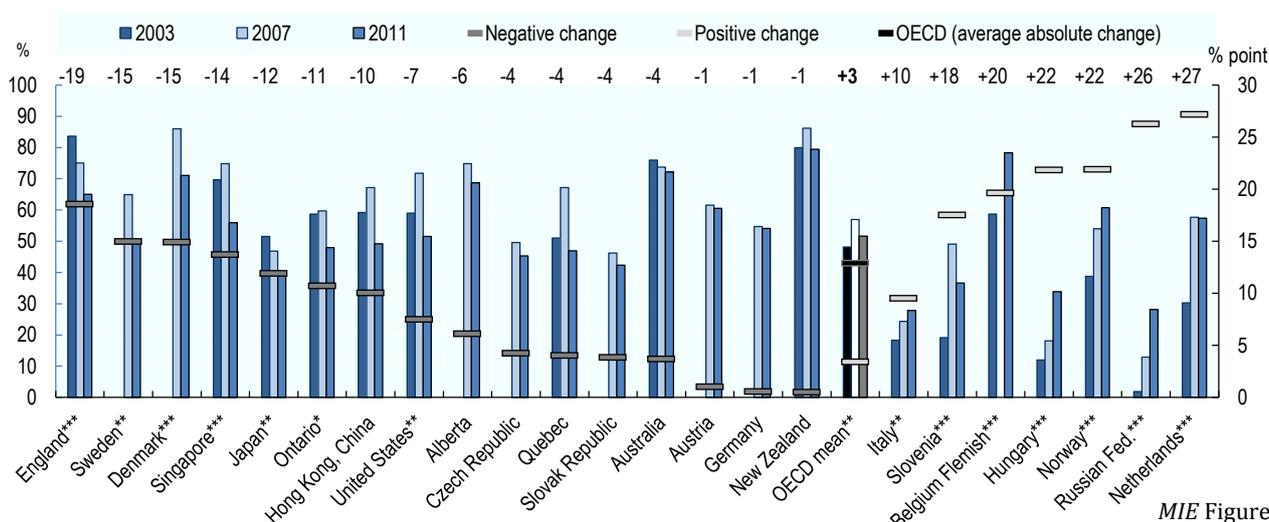
Russia's top pedagogic innovation was greater use of textbooks as primary resources in 8th grade science instruction. Between 2003 and 2011, the percentage of Russian 8th grade students whose teachers use textbooks as a primary basis for science instruction increased by 15% points. This change for 8th grade science instruction is slightly higher than the OECD average difference of 13% points over the same period.

(2) More use of same-ability grouping in secondary education...

Another pedagogic innovation in the Russian educational system is the change in use of same-ability grouping of students in secondary school subjects. Between 2006 and 2009, the percentage of Russian 15 year-old students grouped by ability in classes for at least some of their subjects increased by 7% points.

(3) More use of computers as reference resources...

Percentage of 4th grade science students using computers to look up ideas and information at least sometimes and change over time



MIE Figure 11.8

Russia also saw innovation in the use of computers to look up ideas and information in primary and secondary school classes. Between 2003 and 2011, Russia saw a difference of 26% points in the proportion of 4th grade students using computers to look up ideas in at least some of their science classes and a difference of 20% points for 4th grade mathematics students. For 8th grade students, the observed differences in this metric were 35% points for mathematics and 37% points for science. These gains were the second-largest of any 4th grade education system included in this report and the largest of any 8th grade education system.

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

Russia 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 33% points and 36% points, respectively, the largest gains in this metric for any educational system included in this report. Over the same period, Internet availability increased by 23% points for 4th grade mathematics students and 24% points for 4th grade science students.