

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

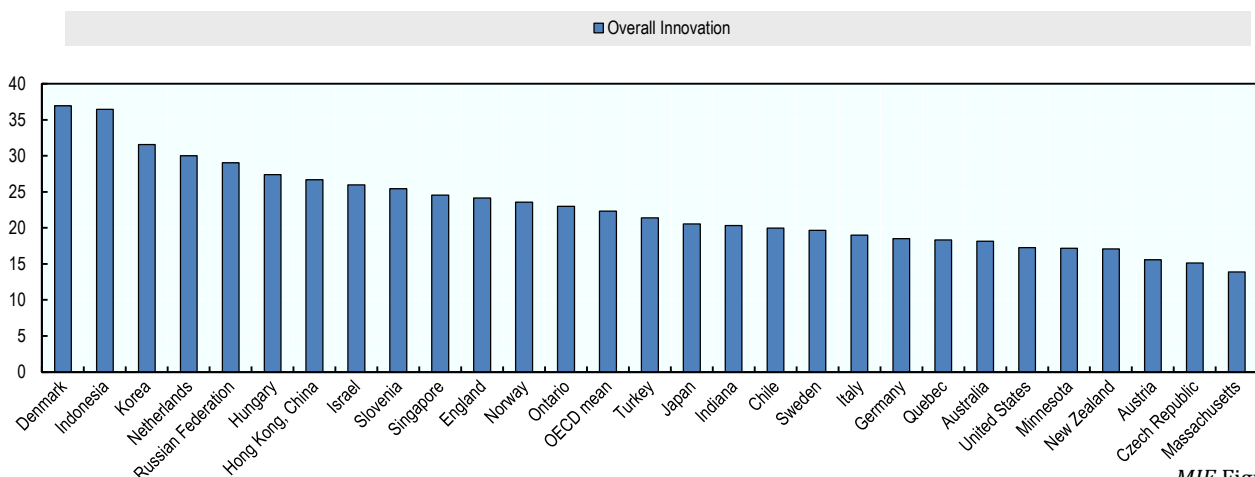
The purpose of the *Measuring Innovation in Education* report

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 Hungarian 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 Hungarian 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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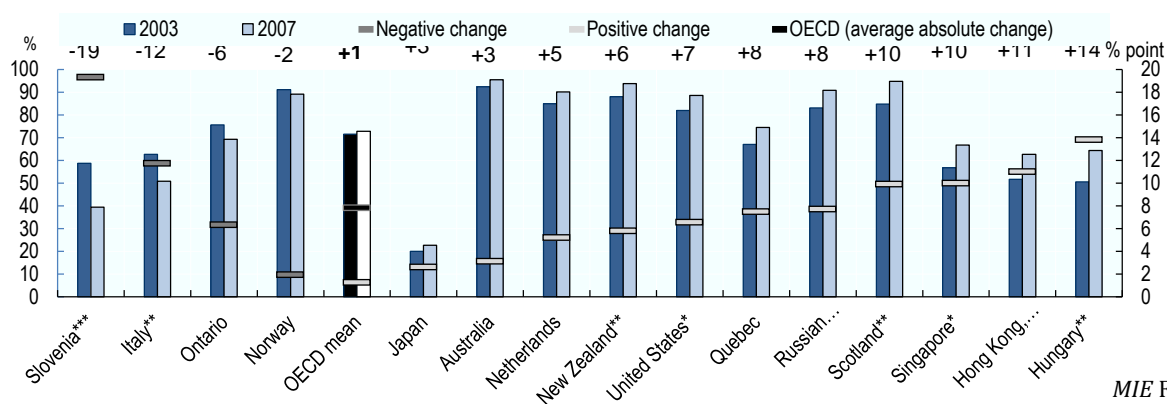
Hungary's top five innovations in organisational policy and practice:

(1) More remedial mathematics and science education in secondary schools...

One of the top innovations in Hungarian secondary schools is the availability of remedial education in maths and science. Between 1999 and 2007, the proportion of 8th grade students in schools offering remedial mathematics education increased by 15% points, while the proportion of 8th grade students in schools offering remedial science education increased by 22% points. These increases are both higher than the average change in remedial education for OECD countries, which was 14% points for mathematics and 4% points for science.

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

Percentage of 4th grade students in schools that ask parents to serve on school committees and change over time



MIE Figure 16.7

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 Hungary saw a significant increase of 15% points, the second largest change of any educational system studied in this report. For the parents of 4th grade students, Hungary's 14% point increase was the largest of all the educational systems included in this report.

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

In both primary and secondary education, another major 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 7.8% to 14.2%; over the same period, the share of 8th grade science students in such schools rose from 6.8% to 14.3%. From 2003 to 2007, the proportion of 4th grade students in schools with teacher incentives rose by 9% points, from 8.4% to 17.5%.

(4) More enrichment education for secondary mathematics students...

Another top organisational innovation in secondary schools in Hungary is the availability of enrichment education for 8th grade mathematics students. Between 1999 and 2007, the percentage of 8th grade students in Hungary enrolled in schools offering enrichment activities in mathematics increased by 12% points, slightly below the OECD average change of 13% points in this metric.

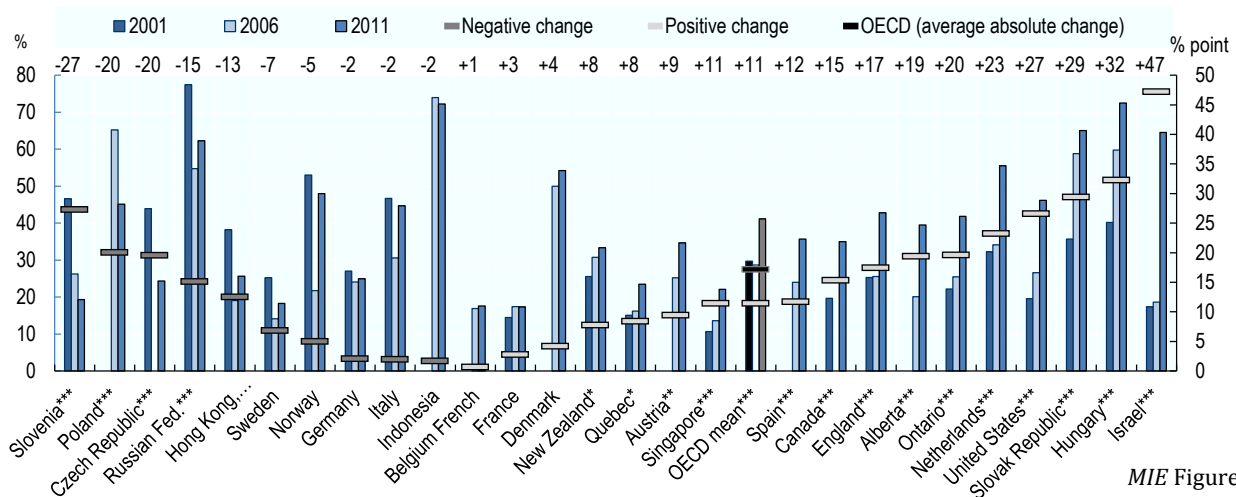
(5) More peer evaluation of teachers in primary education...

This educational system saw significant changes in peer review evaluation of teacher practices in 4th grade classrooms, with an increase of 7% points in the percentage of students in schools with peer review evaluations between 2003 and 2011. This observed difference is slightly greater than the mean change in this metric across all OECD countries, which was 6% points over the same period.

Hungary's top five innovations in pedagogic practice:

(1) More individualised instruction in primary school classrooms...

Percentage of students whose teachers always or almost always use individualised instruction for reading and change over time



MIE Figure 7.18

Hungary's top pedagogic innovation identified in this report is the use of individualised instruction in primary school reading lessons. Between 2001 and 2011, the percentage of 4th grade students in Hungary whose teachers always or almost always use individualised instruction for reading increased by 32% points, compared to a mean change of 11% points for OECD countries examined in this report.

(2) More observation and description in secondary school science lessons...

Another pedagogic innovation in the Hungarian educational system is the change in use of explanation and elaboration of answers in secondary school science lessons. Between 2007 and 2011, according to teachers the percentage of students whose teachers ask them to observe and describe natural phenomena in their 8th grade science lessons increased by 26% points.

(3) More use of computers to develop skills in primary and secondary school science...

The use of computers resources for primary and secondary science education instruction also increased in Hungary from 2003 to 2011. Between 2003 and 2011, Hungary saw a difference of 18% points in the proportion of 4th grade students using computers to practice skills and procedures in their science classes; the change in this metric for 8th grade science students was 24% points over the same period.

(4) More use of computers as reference resources in primary and secondary science...

Hungary also saw innovation in the use of computers to look up ideas and information in primary and secondary science classes. Between 2003 and 2011, Hungary saw a difference of 22% points in the proportion of 4th grade students using computers to look up ideas in their science classes; the change in this metric for 8th grade science students was 21% points over the same period.

(5) More Internet availability in primary school classrooms...

Finally, between 2003 and 2011 Hungary saw large gains in the percentage of 4th grade students with access to Internet in the classroom. Over this period, the percentage of 4th grade mathematics students with Internet access in the classroom increased from 7.7% to 27.1%, while the percentage of 4th grade science students with in-classroom Internet access increased from 12.1% to 30.2%.