Measuring Innovation in Education
Slovenia Country Note

In this system note:

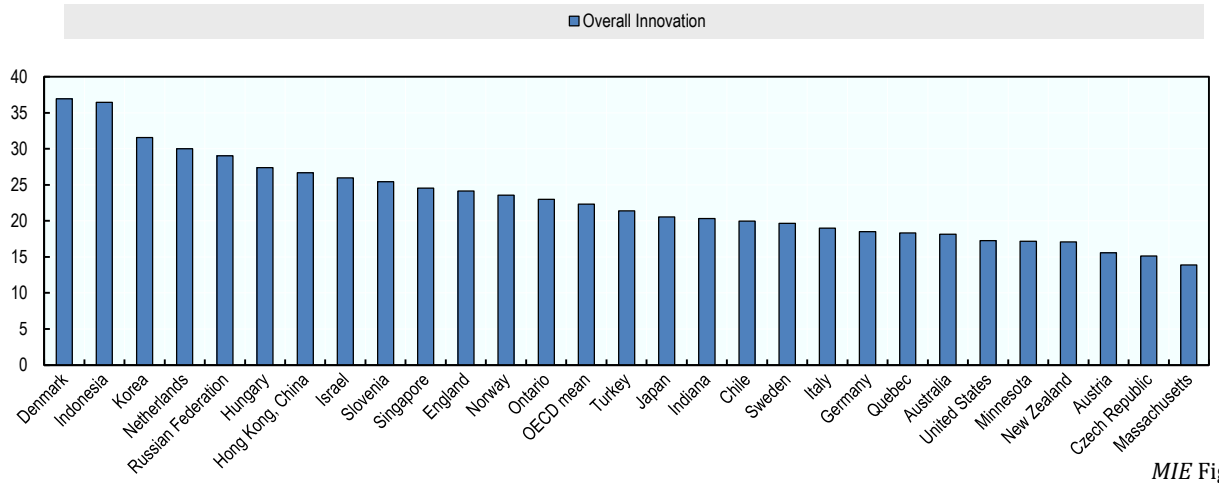
The purpose of the *Measuring Innovation in Education* report

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 Slovenia as 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 pedagogic and organisational practices in Slovenia 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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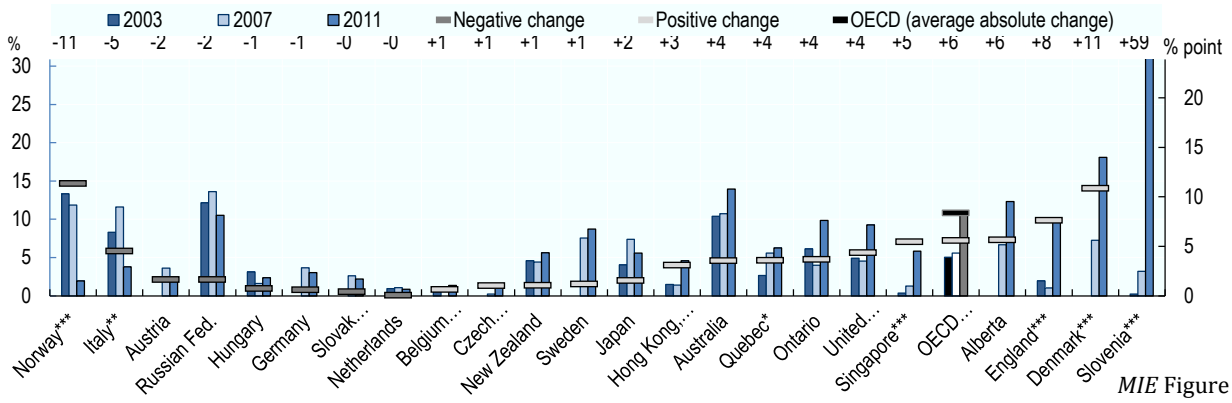
Slovenia's top five innovations in organisational policy and practice:

(1) More teacher observations in primary and secondary school classrooms…

Percentage of 4th grade students who have a teacher who visits another classroom to learn more about teaching once a week or more and change over time



MIE Figure 13.9

Teachers in primary and secondary schools in Slovenia more frequently observed each other's classrooms to learn about their teaching practices. Between 2003 and 2011, Slovenia saw a 59% point increase in the percentage of 4th grade students who have a teacher who visits another classroom to learn more about teaching one or more times per week. Over the same period, 8th grade science students saw a 6% point increase in this metric, while 8th grade mathematics students saw a 11% increase.

(2) More use of achievement data to evaluate principals…

The Slovenian education system experienced innovation in the use of achievement data to make judgements regarding principal performance, with an increase of 49% points in the percentage of 15-year olds enrolled in schools where achievement data are used for evaluating principal performance between 2006 and 2009. This increase was the largest in this metric of any educational system included in this report.

(3) More principal engagement in primary-level curriculum development…

In primary education, another major innovation in Slovenia was an increase in the proportion of principals' time dedicated to curriculum and pedagogy development. Between 2001 and 2006, the percentage of principals' time devoted to developing curriculum and pedagogy in their school increased by 4% points, well above the OECD mean shift of -1% points over the same period.

(4) More peer discussions amongst secondary mathematics teachers…

Between 2003 and 2011, the level of peer-to-peer discussion amongst 8th grade mathematics teachers in Slovenia to exchange pedagogic ideas increased by 21% points. Of the educational systems analysed in this report, Slovenia saw the second-largest change in this metric; Israel, the system with the largest change, had a system-level increase of 24% points over this period.

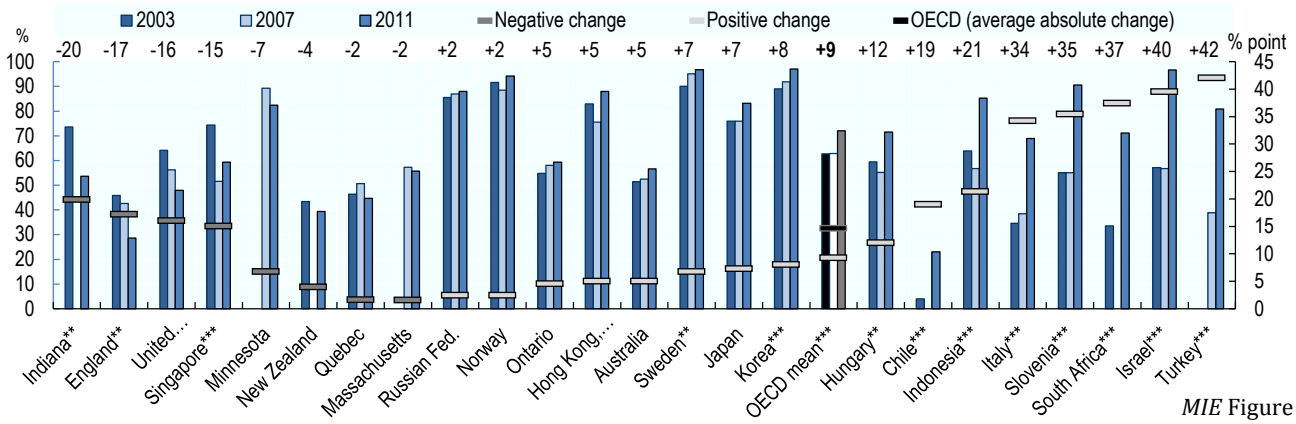
(5) More teacher collaboration in developing instructional materials…

Change in collaboration in planning and preparation of instructional materials is another indicator of innovation in instructional collaboration. Between 2003 and 2011, the percentage of 8th grade mathematics students in Slovenia who had a teacher who collaborates with other teachers in planning and preparing instructional materials increased from 29.2% to 42.9%, the percentage of 8th grade science students with collaborative teachers, from 16.1% to 20.9%, and the percentage of 4th grade students with collaborative teachers, from 38.5% to 54.6%, the largest change of any system included in this report.

Slovenia's top five innovations in pedagogic practice:

(1) More use of textbooks as primary resources in mathematics and science…

Percentage of 8th grade mathematics students whose teachers use textbooks as a basis for instruction and change over time



MIE Figure 8.1

Between 2003 and 2011, the percentage of 8th grade science students in Slovenia whose teachers use textbooks as a primary basis for instruction increased by 25% points, while this proportion increased by 35% points for 8th grade mathematics students. Similarly, use of textbooks as primary resources also increased in primary classes over this same period, with increases of 32% points and 63% points, respectively, for 4th grade mathematics and science students.

(2) More relating of lessons to everyday life…

Between 2003 and 2011, based on teacher reports, Slovenia saw a 20% point increase in the percentage of students whose teachers ask them to relate what they learn in class to their daily life in at least half of their lessons. Students also reported a 17% point increase in this metric from 2003 to 2007. 4th grade science teachers reported similar gains in this metric, with a 20% point increase between 2003 and 2011.

(3) More Internet availability in primary science classrooms…

Slovenia also saw innovation in the availability of the Internet in primary science classrooms. Between 2003 and 2011, the percentage of 4th grade science students in Slovenia with Internet access in their classrooms increased by 21% points, from 16.9% to 37.5%. This change far exceeds the mean increase of OECD countries over this same period, which was 5% points (increasing from 53.2% to 58.1%).

(4) More text interpretation in primary reading lessons…

According to teachers, Slovenia experienced significant increases in the extent to which students interpret text in 4th grade reading lessons. Between 2001 and 2011, the percentage of students whose teachers ask them to make generalisations and draw inferences from a text one or more times per week increased from 61.6% to 81.5%, a 19.9% point gain. While this increase is significant, it is in line with the mean difference in this metric for OECD countries, which was 16.2% points over the same period.

(5) More use of computers in primary science classrooms…

Finally, according to teachers, Slovenia saw significant increases in the use of computers as resources in 4th grade science instruction. Between 2003 and 2011, the percentage of Slovenian students using computers to look up ideas and information in at least some of their 4th grade science lessons increased by 18% points, the sixth-largest increase of all educational systems analysed in terms of this metric.