Measuring Innovation in Education
Indonesia Country Note

In this country note:

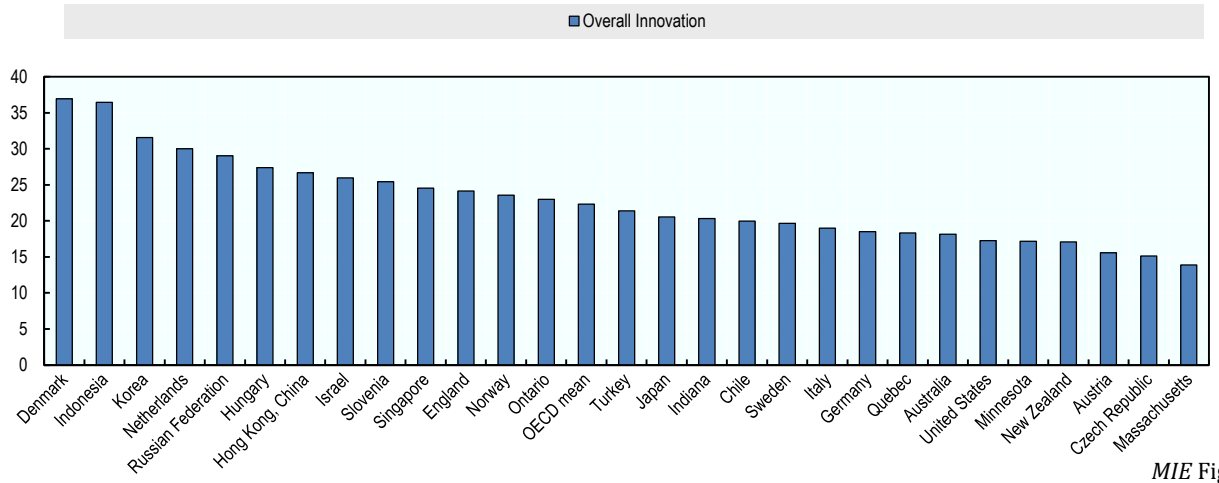
The purpose of the *Measuring Innovation in Education* report

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 Indonesian 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 Indonesian 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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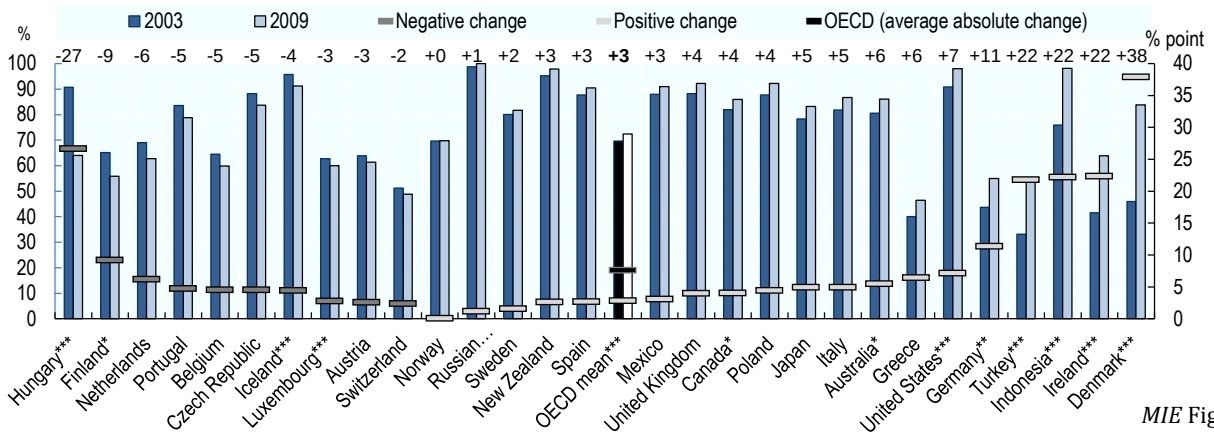
Indonesia's top innovations in organisational policy and practice:

(1) More use of assessments for classroom improvement…

Percentage of 15-year old students in schools where assessments are used to identify instructional or curriculum improvement and change over time



MIE Figure 14.5

Indonesia demonstrated innovation in the use of student assessments for instructional or curriculum improvement over the period analysed in this report. From 2003 to 2009, the percentage of Indonesian 15-year olds in schools where assessments are used to identify instructional or curriculum improvement increased from 75.9% to 98.1%, a net change of 22.2% points.

(2) More use of assessment data in secondary education…

The Indonesian education system also experienced innovation in the use of assessments to make judgements regarding teacher effectiveness, with an increase of 13% points in the percentage of 15-year olds enrolled in schools where assessment data are used to make judgements about teachers' effectiveness between 2003 and 2009. From 2006 to 2009, Indonesia saw no increase in the use of achievement data to evaluate teacher performance and a small decrease in the use of achievement data to evaluate principal performance (-2% points).

(3) More public posting of secondary achievement data…

Another top innovation in secondary schools in Indonesia was an increase in dissemination of secondary school achievement data. Between 2006 and 2009, the percentage of 15-year olds in schools where achievement data are publicly posted increased by 17% points, the third-largest gain of any educational system analysed in this report.

(4) More parental service on secondary school committees…

Innovation in parental involvement can be indicated through 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 Indonesia saw a significant increase of 14% points, an increase well above the OECD average difference in this metric, which saw no change over the same period.

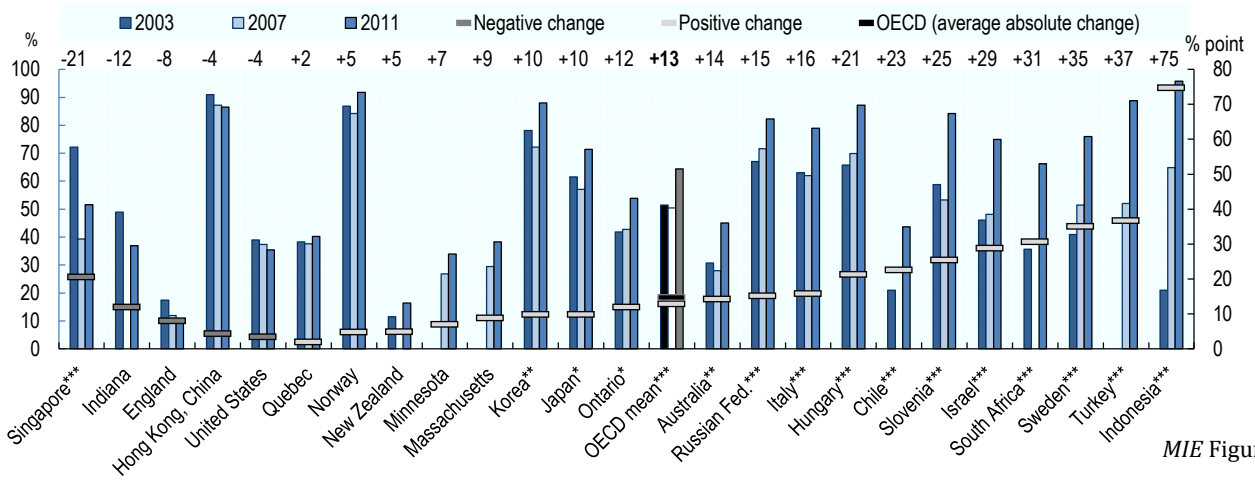
(5) More teacher observations of secondary school science classrooms…

Secondary school teachers in Indonesia also frequently observed each others' classrooms to learn about other instructors' teaching practices. Between 2003 and 2011, the percentage of 8th grade science students in Indonesia with a teacher that observed other classrooms one or more times per week increased by 10% points, the largest change in this metric of any educational system included in this report.

Indonesia's top innovations in pedagogic practice:

(1) More use of textbooks as primary resources in secondary school science…

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



MIE Figure 8.2

Indonesia's top pedagogic innovation was the practice of using textbooks as primary resources in 8th grade science instruction. Between 2003 and 2011, the percentage of Indonesian 8th grade students whose teachers used textbooks as a primary basis for science instruction increased by 75% points. These changes are the largest of any educational system analysed for this metric; the OECD average change over the same period was a 13% point increase.

(2) More grouping by ability in secondary education…

Between 2006 and 2009, in Indonesia the percentage of 15-year old students grouped by ability in at least some of their classes increased from 27.5% to 68.0%, for a total change of 40.5% points. This change was the largest in this metric for any of the educational systems included in this report; Denmark, the educational system with the next-largest change, saw an increase of 36.2% points (from 18.1% to 54.3%).

(3) More relating of secondary school lessons to everyday life…

Between 2003 and 2011, teachers in Indonesia reported 36% point and 28% point increases in the percentage of 8th grade mathematics and science students, respectively, whose teachers ask them to relate what they learn in class to their daily life in at least half of their lessons. Both of these increases were the largest in each respective metric of any educational system included in this report.

(4) More use of answer explanation in secondary mathematics…

Between 2003 and 2007, teachers in Indonesia reported a 30% point increase in the proportion of 8th grade students whose teachers ask them to explain their answers in at least half their mathematics lessons, representing the largest increase in this metric of any educational system analysed in this report. Over the same period, Indonesian students self-reported only a 9% point difference in this metric.

(5) More observation and description in secondary school science lessons…

Another pedagogic innovation in Indonesia's educational system was 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 at least half of their 8th grade science lessons increased by 26% points in Indonesia.