CHAPTER 14

Innovation in feedback mechanisms in schools

Innovation in schools can take the form of a change in the use of benchmarking, monitoring and feedback activities. Student assessment and achievement data may be used for comparing a school's performance against national benchmarks, against other schools or for monitoring its progress over time to better understand its strengths and weaknesses. Feedback received from assessments can be used for further instructional and curriculum improvement. The aim of innovation with regard to increasing the use of benchmarking, monitoring and feedback activities could be, for example, to improve teaching quality through increased feedback. A decrease may result from the desire to decrease between-school competition or limit the burden of data collection by reducing these activities.

Progress benchmarking and monitoring

General Findings

Much of the innovation in progress monitoring has resulted in less use of student assessments for between-school comparisons and more for comparison with district or national benchmarks across schools teaching 15-year-olds (Figure 14.1 and Figure 14.2). The average absolute change within the OECD area concerning use of assessments for school comparisons was 23% points between 2003 and 2009 whereas it amounted to 15% points for comparison with district or national performance from 2000 to 2009. Hong Kong (68% points), Spain (45% points), Italy (45% points), Iceland (42% points), Poland (40% points), Portugal (39% points) and Hungary (34% points) showed prominent reductions in the use of student assessments for comparison between schools. Increase was noteworthy only in Denmark (19% points). As for comparison with district or national benchmarks, Luxembourg (54% points), Canada (29% points), Portugal (28% points), Denmark (27% points), Switzerland (24% points), United States (23% points) and Germany (21% points) experienced the largest increases. Illustrating the magnitude of change, all increases in these individual education systems were characterised by at least medium effect sizes, whereas the decreases had large effect sizes. OECD average and average absolute effect sizes were small to medium for between-school comparisons and the average absolute effect size was small for comparison with district or national benchmarks. Overall, with at least small effect sizes, assessment use for between-school comparisons decreased in 24 education systems and increased in one. Comparisons with district and national benchmarks increased in 16 systems and decreased in two.

Innovation has also occurred in the form of increased monitoring over time and tracking of the achievement of 15-year-old students by schools and administrations (Figure 14.3 and Figure 14.4). On average absolute level, change between 2000 and 2009 within the OECD area was 12% points regarding the use of student assessments for monitoring school progress over time. It amounted to 7% points between 2006 and 2009 for tracking of achievement data by an administrative authority and to 3% points for parental perception on schools monitoring student progress. In particular, Luxembourg (40% points), Belgium (34% points), Greece (34% points), the United States (24% points) and the Russian Federation (14% points) increased assessment use for monitoring school progress. Decreases in tracking achievement data were prominent in the Netherlands (25% points) and Germany (25% points). Changes in individual systems corresponded to medium to large effect sizes, while the OECD average effect size was small for monitoring school progress as well as for parental perception. There was no notable change for administrative tracking of achievement data on average for the OECD. Overall, with at least small effect sizes, 14 education systems increased the use of student assessment to monitor schools' progress overtime, whereas the opposite was true for three systems. Administrative achievement data tracking increased in eight education systems and decreased in three others with at least small effect sizes.

Country specificities

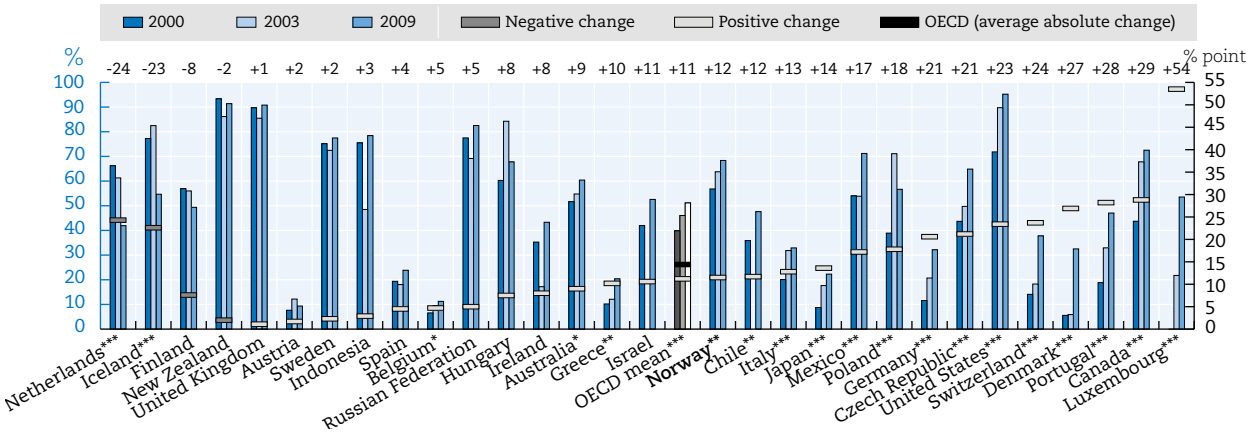
Denmark stands out as the only country where innovation took the form of increased use of assessment data. With at least small effects, assessment use for comparisons between schools and with national benchmarks as well as for monitoring and tracking increased from 2000, 2003 or 2006 to 2009.

In the Netherlands, innovation took the form of decreased monitoring. With at least small effect sizes, assessment use for between-school comparisons and/or district or national performance decreased from 2000 or 2003 to 2009. Also administrative tracking of data decreased from 2006 to 2009.

The cases of Germany and Mexico illustrate that innovation can mean increases in one type of monitoring and decreases in other. In these two countries assessment use for comparison with district or national performance and progress monitoring increased with at least small effects between 2000 and 2009, while use for between-school comparisons decreased from 2003 to 2009.

Figure 14.1 Use of student assessments for district or national benchmarking

Percentage of 15-year old students in schools where assessments are used for comparing school to district or national performance and change over time



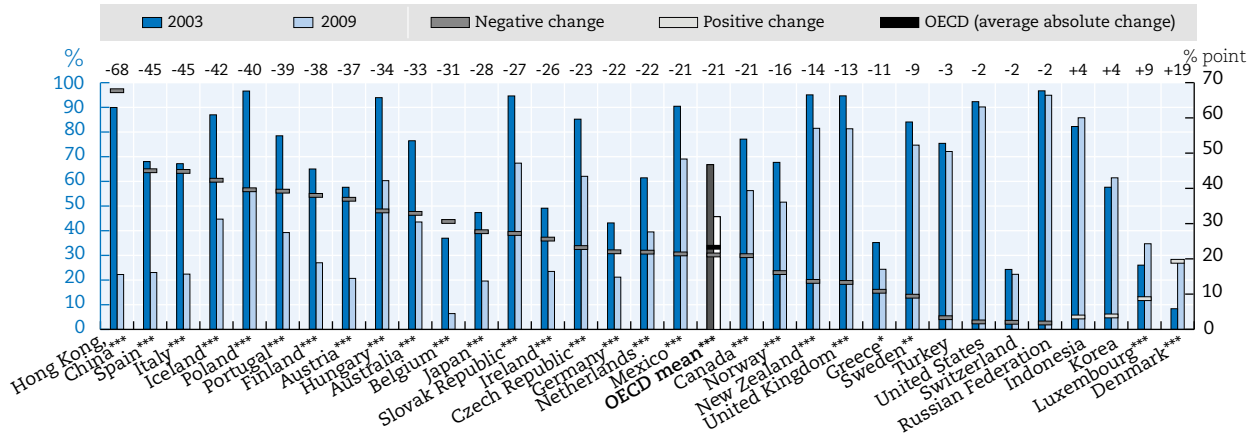
StatLink http://dx.doi.org/10.1787/888933085729

Notes: *** = change significant at the 0.01 level; ** = change significant at the 0.05 level; * = change significant at 0.1 level; OECD average includes all OECD education systems for which data is available for all years concerned.

Source: Authors' calculations based on PISA (2000, 2003 and 2009)

Figure 14.2 Use of student assessments for between-school comparisons

Percentage of 15-year old students in schools where assessments are used to compare the school with other schools and change over time



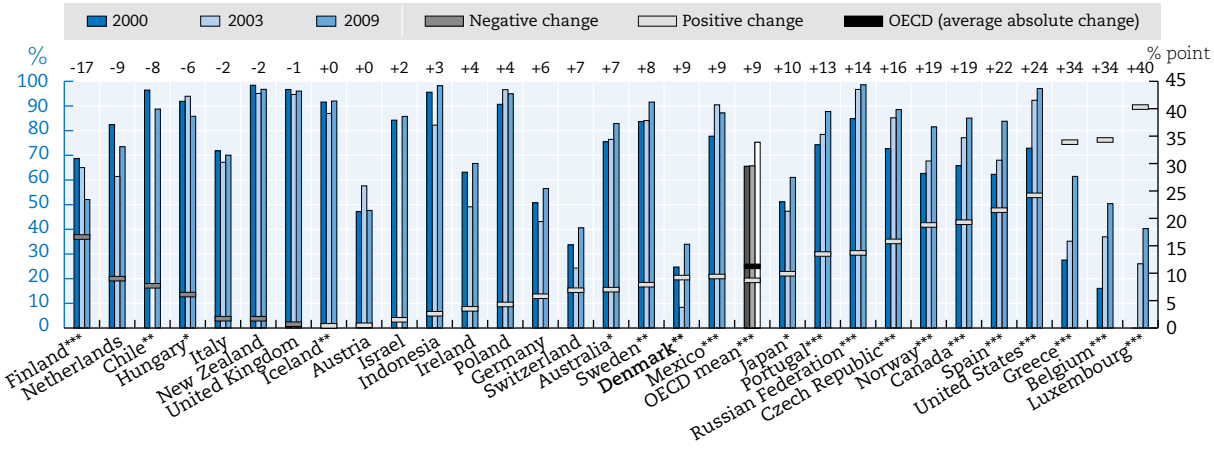
StatLink http://dx.doi.org/10.1787/888933085748

Notes: *** = change significant at the 0.01 level; ** = change significant at the 0.05 level; * = change significant at 0.1 level

Source: Authors' calculations based on PISA (2003 and 2009)

Figure 14.3 Use of student assessments for monitoring progress over time

Percentage of 15-year old students in schools where assessments are used for monitoring progress from year to year and change over time



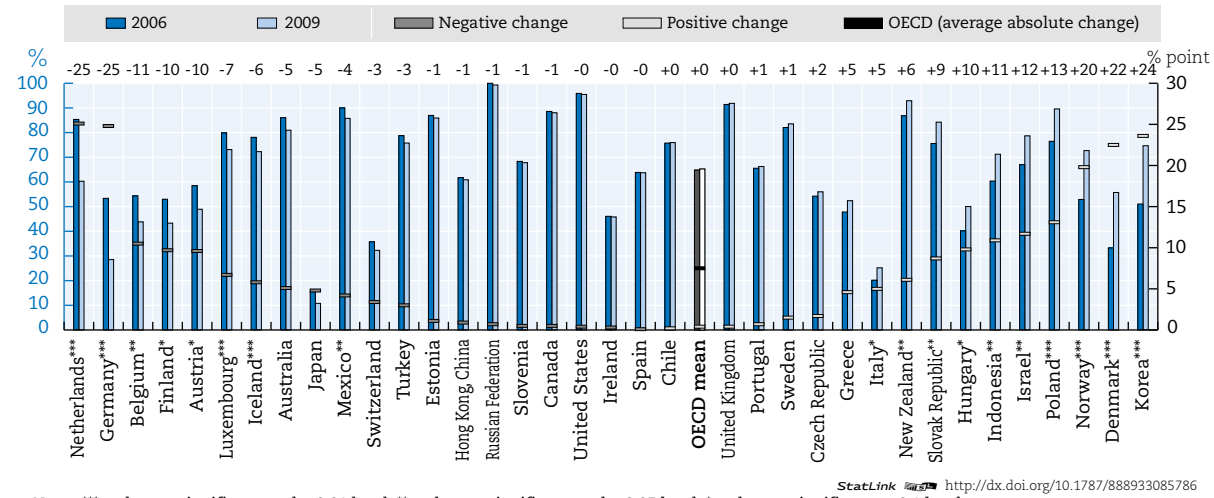
StatLink http://dx.doi.org/10.1787/888933085767

Notes: *** = change significant at the 0.01 level; ** = change significant at the 0.05 level; * = change significant at 0.1 level; OECD average includes all OECD education systems for which data is available for all years concerned.

Source: Authors' calculations based on PISA (2000, 2003 and 2009)

Figure 14.4 Administrative tracking of school achievement data

Percentage of 15-year old students in schools where achievement data is tracked over time by an administrative authority and change over time



StatLink http://dx.doi.org/10.1787/888933085786

Notes: *** = change significant at the 0.01 level; ** = change significant at the 0.05 level; * = change significant at 0.1 level

Source: Authors' calculations based on PISA (2006 and 2009)

Box 14.1 Data source details for Figures 14.1 to 14.4

PISA (2000, 2003 and/or 2009) surveys asked principals "In your school, are assessments of students in <national modal grade for 15-year-olds> used for the following purposes [...]To compare the school to <district or national> performance [...] To compare the school with other schools [...] To monitor the school's progress from year to year" with answer options "Yes/No". PISA (2006 and 2009) asked ''In your school, are achievement data used in any of the following <accountability procedures> [...] tracked over time by an administrative authority?" with answer options "Yes/No".

Curriculum and instruction development

General findings

Innovation in the form of increased use of assessment data for instructional and curriculum improvement has taken place in many education systems in schools with 15-year-old students (Figure 14.5). Between 2003 and 2009, the average absolute change within the OECD area for using student assessments to identify improvement aspects for instruction and curriculum amounted to 8% points. The most noteworthy increases took place in Denmark (38% points) and Indonesia (22% points). Hungary (27%) experienced the largest decrease in using assessments to identify points for instructional and curriculum improvement. Change in these individual countries was associated with large to medium effect sizes. In general, the percentage of 15-year-olds in schools where assessments were used to identify points for instructional and curriculum improvement increased with at least small effect sizes in six education systems, while decreasing in only one.

Overall, little innovation has taken place regarding time investment for pedagogical and curriculum development at the primary school level (Figure 14.6). The average absolute change within OECD area regarding the time principals in the 4th grade schools devoted to curriculum and pedagogical development was 3% points between 2001 and 2006. Hungary (10% points) stands out as the only country where principals notably reduced the time devoted to curriculum and instruction development and it is the only country where the change presents a small effect size.

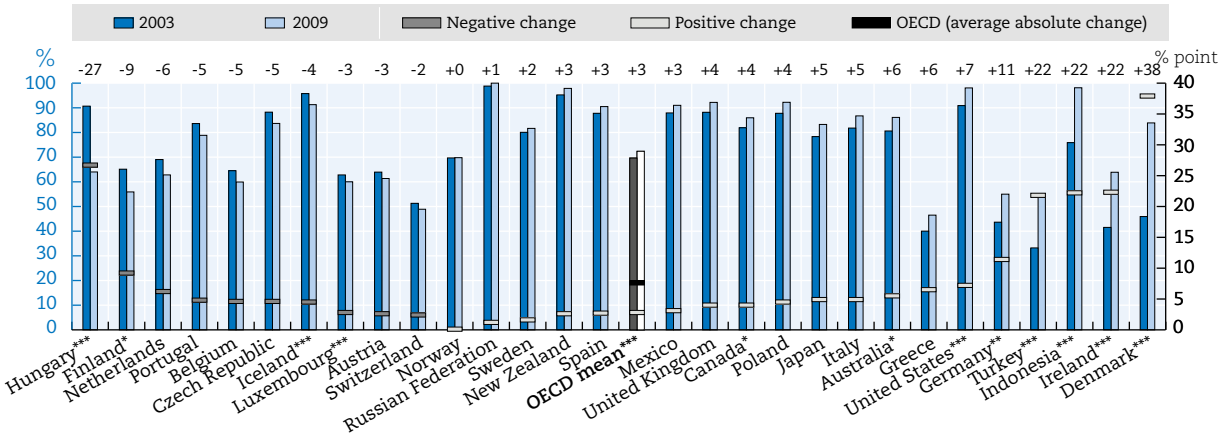
Country specificities

Innovation in Denmark has taken the form of an increase in the use of student assessments for instructional and curriculum improvement. Within the period 2003 to 2009, the share of 15-year-olds attending Danish schools where student assessments were used to identify points for instructional and curriculum improvement increased with a large effect size.

In contrast, innovation took the form of a clear decrease in (data based) curriculum and instruction development in Hungary. In Hungary, the use of student assessments for instructional and curriculum improvement in the schools of 15-year-olds decreased with medium effect size from 2003 to 2009. In addition, the time principals dedicated to curriculum and pedagogy development fell with small effect size between 2001 and 2006.

Figure 14.5 **Use of student assessments for instructional or curriculum improvement**

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



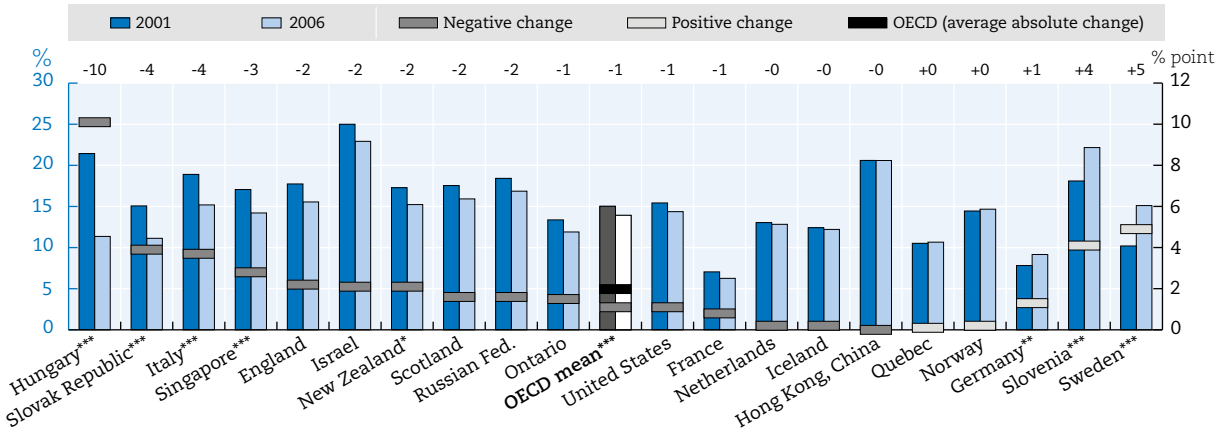
StatLink http://dx.doi.org/10.1787/888933085805

Notes: *** = change significant at the 0.01 level; ** = change significant at the 0.05 level; * = change significant at 0.1 level

Sources: Authors' calculations based on PISA (2003 and 2009)

Figure 14.6 **Principals' time devoted to curriculum and pedagogy development at the 4th grade**

Percentage of principals' time devoted to developing curriculum and pedagogy in their school and change over time



StatLink http://dx.doi.org/10.1787/888933085824

Notes: *** = change significant at the 0.01 level; ** = change significant at the 0.05 level; * = change significant at 0.1 level

Sources: Authors' calculations based on PIRLS (2001 and 2006)

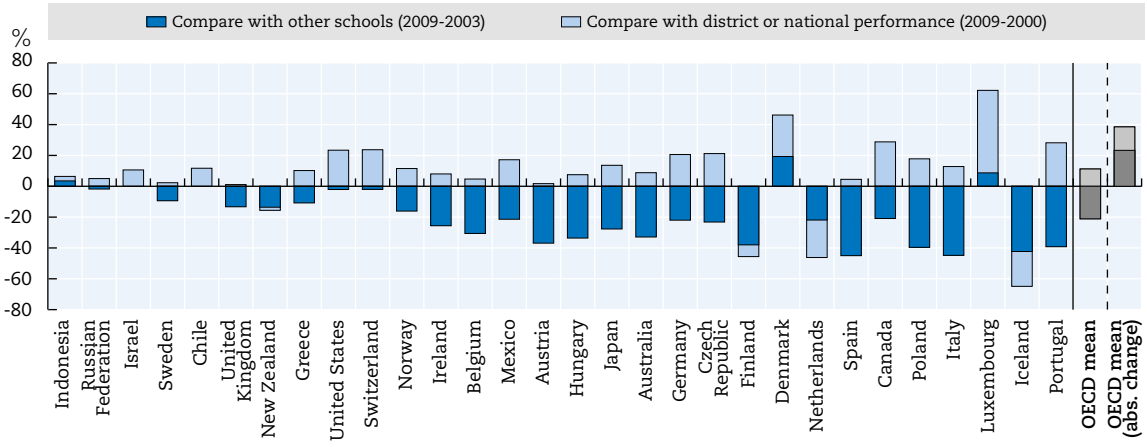
Box 14.2 **Data source details for Figures 14.5 and 14.6**

PISA (2003 and 2009) surveys asked school principals "In your school, are assessments of students in <national modal grade for 15-year-olds> used for the following purposes: […] To Identify aspects of instruction or the curriculum that could be improved" with answer options "Yes/No". PIRLS (2001 and 2006) surveys asked principals and department heads ''As principal of this school, approximately what percentage of your time is devoted to the following activities? […] Developing curriculum and pedagogy for your school", with answers expressed in percentages. The same data restrictions as in International PIRLS Reports by the International Association for the Evaluation of Educational Achievement (IEA) apply to these data.

Summary

Innovation regarding benchmarking, monitoring and feedback practices has meant more or less use of student assessment in secondary schools for external comparison and internal evaluation purposes. Innovation took the form of an increase in performance monitoring for comparison with national benchmarks between 2000 and 2009 and a decrease for comparison among schools among OECD countries between 2003 and 2009. On the contrary, in general, the use of assessment for curriculum and instruction development has exhibited little change between 2003 and 2009.

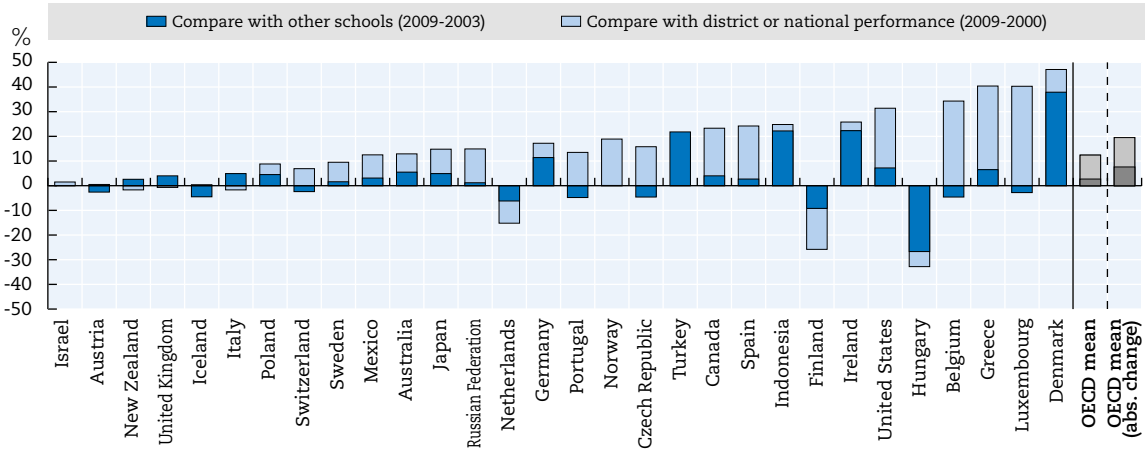
Figure 14.7 **Change in the use of student assessments for external comparison**



StatLink http://dx.doi.org/10.1787/888933085843

Notes : For details please see Figures 14.1 and 14.2

Figure 14.8 **Change in the use of student assessments to monitor progress and to improve curriculum in secondary education**



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Notes : For details please see Figures 14.3 and 14.6

Note on Israel

The statistical data for Israel are supplied by and 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.

Table 14.1 Effect sizes for changes in benchmarking, monitoring and feedback in school education

	Change in progress monitoring				Change in curriculum and instruction development	
	Use of assessment data			Use of achievement data	Use of assessment data	
	Comparison with district/national performance	Comparison with other schools	Monitoring school progress	Tracked over time by admin authority	Instructional or curriculum improvement	Principal time devoted to curriculum development
	00-09	03-09	00-09	06-09	03-09	01-06
Australia	0,18	-0,69	0,18	-0,14	0,15	m
Austria	0,06	-0,78	0,01	-0,19	-0,05	m
Belgium	0,17	-0,80	0,75	-0,21	-0,09	m
Canada	0,59	-0,45	0,46	-0,02	0,11	m
Chile	0,24	m	-0,30	0,00	m	m
Czech Republic	0,43	-0,54	0,41	0,04	-0,13	m
Denmark	0,74	0,52	0,20	0,46	0,83	m
Estonia	m	m	m	-0,03	m	m
Finland	-0,15	-0,78	-0,34	-0,19	-0,19	m
France	m	m	m	m	m	-0,12
Germany	0,51	-0,48	0,12	-0,51	0,23	0,18
Greece	0,29	-0,24	0,70	0,09	0,13	m
Hungary	0,16	-0,87	-0,19	0,20	-0,67	-0,95
Iceland	-0,48	-0,94	0,01	-0,13	-0,18	-0,03
Ireland	0,16	-0,54	0,07	-0,01	0,45	m
Israel	0,21	m	0,04	0,26	m	-0,20
Italy	0,29	-0,94	-0,04	0,12	0,14	-0,40
Japan	0,38	-0,60	0,20	-0,14	0,13	m
Korea	m	0,08	m	0,50	m	m
Luxembourg	1,64	0,19	1,38	-0,16	-0,06	m
Mexico	0,36	-0,55	0,25	-0,13	0,10	m
Netherlands	-0,49	-0,44	-0,22	-0,58	-0,13	-0,03
New Zealand	-0,07	-0,44	-0,11	0,20	0,15	-0,21
Norway	0,24	-0,33	0,43	0,41	0,00	0,02
Poland	0,36	-1,06	0,17	0,36	0,15	m
Portugal	0,61	-0,82	0,35	0,01	-0,12	m
Slovak Republic	m	-0,75	m	0,22	m	-0,62
Slovenia	m	m	m	-0,01	m	0,42
Spain	0,11	-0,94	0,49	0,00	0,09	m
Sweden	0,05	-0,23	0,24	0,04	0,04	0,62
Switzerland	0,55	-0,05	0,14	-0,07	-0,05	m
Turkey	m	-0,08	m	-0,07	0,44	m
United Kingdom	0,04	-0,43	-0,03	0,02	0,14	m
England	m	m	m	m	m	-0,20
Scotland	m	m	m	m	m	-0,17
United States	0,68	-0,08	0,75	-0,02	0,33	-0,09

Table 14.1 Effect sizes for changes in benchmarking, monitoring and feedback in school education (continued)

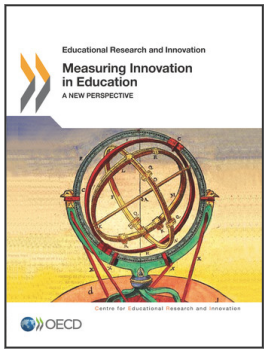
	Change in progress monitoring				Change in curriculum and instruction development	
	Use of assessment data			Use of achievement data	Use of assessment data	
	Comparison with district/national performance	Comparison with other schools	Monitoring school progress	Tracked over time by admin authority	Instructional or curriculum improvement	Principal time devoted to curriculum development
	00-09	03-09	00-09	06-09	03-09	01-06
OECD (average)	0,28	-0,48	0,22	0,01	0,07	-0,11
OECD (average absolute)	0,37	0,54	0,31	0,17	0,20	0,26
Hong Kong, China	m	-1,51	m	-0,02	m	0,00
Indonesia	0,07	0,10	0,15	0,23	0,75	m
Russian Federation	0,13	-0,09	0,56	-0,17	0,22	-0,15
Singapore	m	m	m	m	m	-0,28

StatLink http://dx.doi.org/10.1787/888933085881

Notes: OECD average includes all OECD education systems for which data is available for all years concerned

= Effect size (from -0.2 to -0.5 or 0.2 to 0.5)
= Effect size (from -0.5 to -0.8 or 0.5 to 0.8)
= Effect size (equal or above -0.8 or equal or below 0.8)

Source: Authors' calculations based on PIRLS (2001 and 2006) and PISA (2000, 2003, 2006 and 2009)



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