

STUDENTS, COMPUTERS AND LEARNING

Information and communication technology (ICT) has revolutionised many aspects of people's personal and professional lives. As computers and the Internet have reached a central role in everyday life, students who have not acquired basic skills in reading, writing and navigating through a complex digital landscape will find themselves unable to participate fully in the economic, social and cultural life around them. By analysing PISA 2012 data, it is possible to examine how students' access to ICT devices and their experience in using these technologies evolve in recent years.

Definition

The *OECD Programme for International Student Assessment (PISA)* is a triennial survey of 15-year-old students around the world. The survey examines how well students can extrapolate from what they have learned and can apply that knowledge in unfamiliar settings, both in and outside of school.

Additional questionnaire materials were developed and offered as international options to the participating countries and economies, including the information communication technology familiarity questionnaire. It consists of questions to students regarding their access to uses of, and attitudes towards computers.

Comparability

In PISA 2012, 29 OECD countries and 13 partner countries and economies chose to distribute the optional ICT familiarity component of the student questionnaire. In 2012, this component contained 12 questions, some of which were retained from the previous PISA survey (2009) to allow for comparisons across time. New questions focused on the age at first use of computers and the Internet; the amount of time spent on the Internet; and,

Overview

On average across OECD countries, students spent over 2 hours online each day in 2012. In that same year, 96% of 15-year-old students in OECD countries reported that they have a computer at home, 43% of students reported having three or more computers at home, and 72% reported that they use a desktop, laptop or tablet computer at school. But in Korea, only 42% of students reported that they use computers at school – and Korea is among the top performers in the digital reading and computer-based mathematics tests in the *OECD Programme for International Student Assessment* in 2012. By contrast, in countries where it is more common for students to use the Internet at school for schoolwork, students' performance in reading declined between 2000 and 2012, on average.

since mathematics was the major domain assessed in PISA 2012, on the use of computers during mathematics lessons. Additional information on the availability and use of ICT at home and at school, as well as on school policies on using ICT, was collected through the main student and school questionnaires, and is available for the 65 participating countries and economies in PISA 2012.

Sources

- OECD (2015), *Students, Computers and Learning: Making the Connection*, PISA, OECD Publishing.

Further information

Analytical publications

- OECD (2015), *The ABC of Gender Equality in Education: Aptitude, Behaviour, Confidence*, PISA, OECD Publishing.
- OECD (2014), *PISA 2012 Results: Creative Problem Solving (Volume V): Students' Skills in Tackling Real-Life Problems*, PISA, OECD Publishing.
- OECD (2014), *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science*, PISA, OECD Publishing.
- OECD (2013), *PISA 2012 Results: What Makes Schools Successful? (Volume IV): Resources, Policies and Practices*, PISA, OECD Publishing.

Statistical publications

- OECD (2015), *Education at a Glance: OECD Indicators*, OECD Publishing.

Methodological publications

- OECD (2014), *PISA 2012 Technical Report*, OECD, Paris.
- OECD (2013), *PISA 2012 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving and Financial Literacy*, PISA, OECD Publishing.

Online databases

- *OECD PISA Database*.

Websites

- Programme for International Student Assessment (PISA), www.oecd.org/pisa.



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ICT equipment and use at school and at home

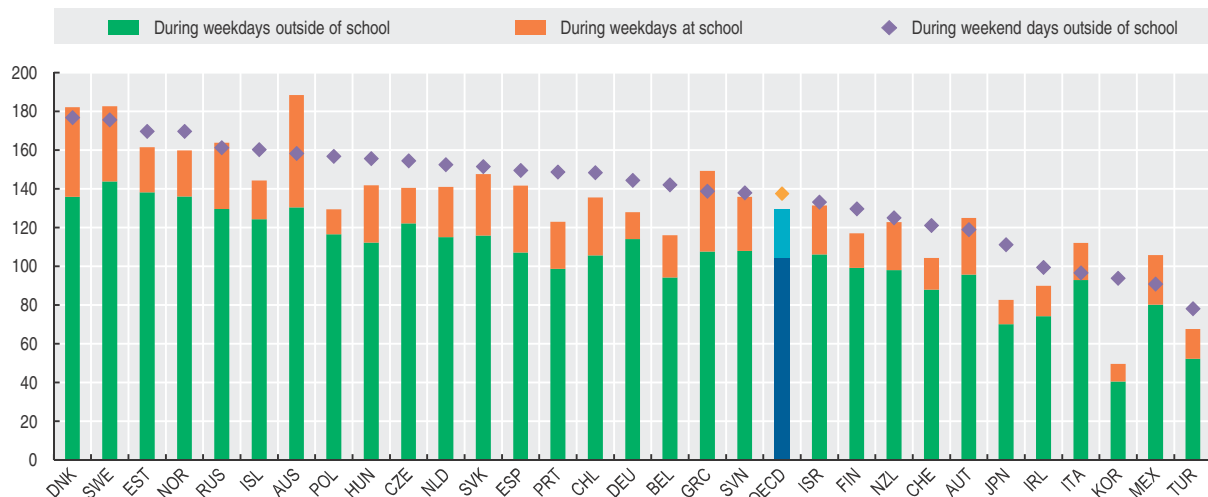
PISA 2012

	ICT use at or for school						Home ICT equipment			
	Number of 15-year-old students per school computer		Students using computers at school		Students browsing the Internet weekly for schoolwork (at school)		Students with at least one computer at home		Students with three or more computers at home	
	Mean	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	0.9	0.0	93.7	0.3	80.8	0.6	99.0	0.1	64.6	0.5
Austria	2.9	0.5	81.4	1.0	48.0	1.3	99.5	0.1	45.3	1.1
Belgium	2.8	0.3	65.3	0.8	29.4	0.9	98.9	0.1	55.0	0.6
Canada	2.8	1.0	..	..	..	..	98.9	0.1	53.0	0.6
Chile	4.7	0.9	61.7	1.5	44.5	1.3	88.3	0.9	20.9	0.8
Czech Republic	1.6	0.1	83.2	1.0	47.6	1.1	98.1	0.3	36.9	0.9
Denmark	2.4	0.3	86.7	0.8	80.8	0.8	99.9	0.0	84.7	0.6
Estonia	2.1	0.1	61.0	1.0	28.9	1.0	98.5	0.2	37.3	0.7
Finland	3.1	0.1	89.0	0.6	34.9	1.1	99.8	0.1	56.1	0.7
France	2.9	0.2	..	..	..	..	99.0	0.1	45.0	0.9
Germany	4.2	1.3	68.7	1.3	28.9	1.0	99.4	0.1	54.0	0.9
Greece	8.2	1.1	65.9	1.3	44.9	1.1	94.6	0.4	18.4	0.7
Hungary	2.2	0.1	74.7	1.0	35.7	1.1	96.2	0.5	24.2	0.8
Iceland	4.1	0.0	81.9	0.6	28.9	0.7	99.3	0.1	70.7	0.9
Ireland	2.6	0.2	63.5	1.4	32.4	1.1	98.7	0.2	36.0	0.8
Israel	4.7	0.6	55.2	1.5	30.6	1.3	96.5	0.4	44.6	1.0
Italy	4.1	0.5	66.8	0.7	28.8	0.6	98.7	0.1	27.7	0.4
Japan	3.6	0.1	59.2	1.9	11.3	0.8	92.4	0.6	17.1	0.6
Korea	5.3	0.2	41.9	1.7	11.0	0.9	98.6	0.2	10.1	0.6
Luxembourg	2.2	0.0	..	..	..	..	99.1	0.1	56.6	0.7
Mexico	15.5	2.0	60.6	0.8	39.5	0.8	58.5	0.8	9.1	0.5
Netherlands	2.6	0.2	94.0	0.6	67.5	1.3	99.8	0.1	69.0	0.7
New Zealand	1.2	0.1	86.4	0.5	59.3	1.0	96.8	0.3	41.6	0.9
Norway	1.7	0.1	91.9	0.7	69.0	1.3	99.1	0.2	83.9	0.6
Poland	4.0	0.1	60.3	1.3	30.3	1.2	97.7	0.3	22.9	1.0
Portugal	3.7	0.3	69.0	1.2	38.1	1.1	97.1	0.3	36.6	1.1
Slovak Republic	2.0	0.2	80.2	0.9	43.1	1.3	94.4	0.6	26.4	0.8
Slovenia	3.3	0.0	57.2	0.8	41.6	0.7	99.7	0.1	43.4	0.8
Spain	2.2	0.1	73.2	0.9	51.1	1.0	97.9	0.2	37.9	0.7
Sweden	3.7	0.8	87.0	1.1	66.6	1.5	99.6	0.1	74.8	0.7
Switzerland	2.7	0.2	78.3	1.0	32.5	0.9	99.5	0.1	58.9	0.7
Turkey	44.9	9.7	48.7	1.7	28.0	1.2	70.7	1.1	4.1	0.5
United Kingdom	1.4	0.1	..	..	..	..	98.8	0.2	50.9	0.8
United States	1.8	0.2	..	..	..	..	94.5	0.5	37.6	1.3
EU 28	..	..	..	..	..	..	..	..	..	..
OECD	4.7	0.3	72.0	0.2	41.9	0.2	95.8	0.1	42.8	0.1
Brazil	22.1	2.7	..	..	..	..	73.5	0.7	9.4	0.5
China	..	..	..	..	..	..	..	..	..	..
India	..	..	..	..	..	..	..	..	..	..
Indonesia	16.4	2.2	..	..	..	..	25.8	2.0	1.9	0.8
Russian Federation	3.0	0.1	80.2	0.7	20.3	0.8	92.8	0.7	10.5	0.9
South Africa	..	..	..	..	..	..	..	..	..	..

1 2 <http://dx.doi.org/10.1787/888933336342>

Time spent on line in school and outside of school

Minutes per day, PISA 2012



1 2 <http://dx.doi.org/10.1787/888933335163>



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