Annex A

Supplementary tables

Table A.1. **Students who have never used a computer**

Participating countries	% all students		Increase/decrease from	PISA 2003		PISA 2006	
	PISA 2003	PISA 2006	PISA 2003 to PISA 2006	% males	% females	% males	% females
Australia	0.15	0.53	0.38	0.03	0.27	0.76	0.29
Austria	0.09	0.17	0.08	0.04	0.14	0.31	0.03
Belgium	0.53	0.39	-0.14	0.44	0.61	0.51	0.26
Canada	0.47	0.42	-0.05	0.20	0.76	0.65	0.18
Chile		0.95				1.06	0.83
Czech Republic	0.23	0.57	0.34	0.31	0.15	0.75	0.33
Denmark	0.05	0.28	0.23	0.03	0.07	0.47	0.10
Finland	0	0.07	0.07			0.08	0.06
Germany	0.2	0.53	0.33	0.32	0.08	0.82	0.23
Greece	**1.96**	**3.16**	**1.2**	2.53	1.35	3.22	3.10
Hungary	0.11	0.62	0.51	0.14	0.09	0.82	0.39
Iceland	0.06	0.66	0.6	0.00	0.12	1.23	0.10
Ireland	**0.29**	**1.33**	**1.04**	0.27	0.30	1.66	1.02
Italy	1.83	1.68	-0.15	2.10	1.54	1.70	1.66
Japan	1.44	2.38	0.94	1.01	1.89	2.58	2.16
Korea	0.11	0.25	0.14	0.03	0.16	0.38	0.12
Mexico	13.12			13.79	12.36		
Netherlands		0.44				0.50	0.38
New Zealand	0.25	0.59	0.34	0.30	0.21	0.82	0.38
Norway		1.04				1.22	0.85
Poland	0.52	0.43	-0.09	0.37	0.67	0.41	0.44
Portugal	0.58	0.71	0.13	0.57	0.59	0.55	0.86
Slovak Republic	**3.82**	**1.42**	**-2.4**	0.13	0.27	1.63	1.19
Spain		2.17				2.96	1.36
Sweden	0.2	0.52	0.32			0.88	0.13
Switzerland	0.34	0.4	0.06	0.31	0.37	0.61	0.18
Turkey	**14.43**	**6.61**	**-7.82**	21.04	9.06	4.07	9.68
United States				1.46	2.57		
OECD average	1.71	1.09	-0.62	2.17	1.60	1.18	1.02

Table A.1. **Students who have never used a computer** *(continued)*

Participating countries	% all students		Increase/decrease from	PISA 2003		PISA 2006	
	PISA 2003	PISA 2006	PISA 2003 to PISA 2006	% males	% females	% males	% females
Partner countries							
Bulgaria		3.9				4.57	3.18
Colombia		2.96				3.07	2.87
Croatia		1.44				1.15	1.74
Jordan		3.53				5.16	1.98
Latvia	0.59	0.83	0.24	0.71	0.47	1.00	0.67
Liechtenstein	0.3	0.62	0.32	0.00	0.59	1.35	0.00
Lithuania		0.69				0.80	0.58
Macao, China		0.78				0.95	0.60
Qatar		5.13				6.25	4.08
Russian Federation	6.19	6.04	-0.15	7.15	5.23	5.79	6.27
Serbia	**1.39**	**4.27**	**2.88**	1.29	1.50	3.78	4.77
Slovenia		0.45				0.72	0.18
Thailand	**5.83**	**0.3**	**-5.53**	5.86	5.79	0.36	0.26
Uruguay	**3.89**	**1.95**	**-1.94**	4.40	3.34	2.25	1.67

Table A.2. **Percentage of students with access to a computer to use for schoolwork and a link to the Internet at home, PISA 2003 and PISA 2006**

Results based on students' self-reports

	A computer you can use for schoolwork		A link to the Internet	
	PISA 2003	PISA 2006	PISA 2003	PISA 2006
Australia	94.0	96.3	84.6	91.9
Austria	93.0	95.7	69.4	80.0
Belgium	87.2	93.4	**74.8**	**89.1**
Canada	93.3	96.3	88.8	94.0
Chile		54.3		30.2
Czech Republic	76.7	86.8	**49.1**	**66.4**
Denmark	93.3	98.3	**83.4**	**95.7**
Finland	87.9	95.3	**76.7**	**92.6**
France	78.6	86.1	**55.9**	**73.0**
Germany	91.0	95.4	**73.5**	**87.5**
Greece	52.8	74.0	35.3	53.4
Hungary	67.6	85.3	26.0	50.7
Iceland	96.8	98.1	92.3	97.7
Ireland	79.9	87.9	**66.2**	**80.5**
Italy	78.0	89.4	62.4	72.2
Japan	46.2	62.5	60.5	74.9
Korea	95.1	97.2	93.1	96.5
Luxembourg	90.1	93.2	75.4	86.7
Mexico	33.2	42.0	18.4	23.3
Netherlands	95.9	97.4	89.0	96.5
New Zealand	87.3	93.3	82.1	89.4
Norway	93.6	96.8	87.6	95.6
Poland	60.3	79.6	34.2	51.3
Portugal	74.7	86.1	47.5	58.1
Slovak Republic	57.1	77.1	17.4	40.2
Spain	79.0	88.1	**49.8**	**65.8**
Sweden	94.9	97.8	89.6	96.7
Switzerland	86.6	96.0	79.1	93.4
Turkey	**23.3**	**38.2**	14.4	24.6

Table A.2. **Percentage of students with access to a computer to use for schoolwork and a link to the Internet at home, PISA 2003 and PISA 2006** *(continued)*

	A computer you can use for schoolwork		A link to the Internet	
	PISA 2003	PISA 2006	PISA 2003	PISA 2006
United Kingdom	91.4	95.2	80.7	90.4
United States	87.5	88.8	81.8	85.1
OECD	78.9	86.9	64.6	76.4
Argentina		48.6		29.9
Azerbaijan		15.7		13.0
Brazil	27.2	36.0	23.3	38.8
Bulgaria		65.8		59.0
Chinese Taipei		89.2		91.8
Colombia		31.0		15.6
Croatia		84.1		71.1
Estonia		82.9		80.7
Hong Kong, China	92.7	97.0	88.4	96.9
Indonesia	7.9	14.4	2.6	4.3
Israel		90.0		84.1
Jordan		59.2		29.7
Kyrgyzstan		12.1		7.1
Latvia	**44.0**	**72.6**	16.3	52.3
Liechtenstein	94.2	95.5	81.2	96.4
Lithuania		80.1		56.7
Macao, China	89.4	94.7	67.0	89.4
Montenegro		59.9		54.3
Qatar		87.7		81.3
Romania		61.0		32.1
Russian Federation	**29.1**	**58.7**	13.9	34.4
Serbia	**38.4**	**72.3**	25.9	51.6
Slovenia		96.8		85.9
Thailand	26.3	**40.6**	18.7	23.3
Tunisia	**20.0**	**32.3**	10.7	20.2
Uruguay	45.6	56.7	35.6	40.3

Table A.3. **Percentage of students with access to various ICT and educational resources at home, by national top and bottom quarters of the index of economic, social and cultural status (ESCS)**

	A computer you can use for schoolwork		Educational software		Books to help with your schoolwork	
	Bottom quarter	Top quarter	Bottom quarter	Top quarter	Bottom quarter	Top quarter
Australia	89.9	99.6	89.9	99.6	72.7	95.6
Austria	89.6	98.8	89.6	98.8	69.0	93.4
Belgium	83.5	98.9	83.5	98.9	74.5	94.5
Canada	89.9	99.8	89.9	99.8	66.6	92.5
Chile	15.3	90.7	15.3	90.7	83.6	96.9
Czech Republic	65.6	99.0	65.6	99.0	86.5	98.7
Denmark	95.4	99.9	95.4	99.9	75.4	96.8
Finland	88.8	99.2	88.8	99.2	76.8	95.8
France	65.9	97.8	65.9	97.8	79.8	96.8
Germany	88.9	99.2	88.9	99.2	84.7	97.8
Greece	46.9	91.8	46.9	91.8	68.9	87.7
Hungary	60.1	98.7	60.1	98.7	81.0	99.4
Iceland	96.3	99.5	96.3	99.5	85.9	99.5
Ireland	71.8	96.7	71.8	96.7	78.8	96.0
Italy	74.7	97.8	74.7	97.8	88.5	97.7
Japan	36.6	78.3	36.6	78.3	77.0	95.5
Korea	92.4	99.6	92.4	99.6	62.0	94.8
Luxembourg	84.3	98.6	84.3	98.6	83.2	96.2
Mexico	5.2	85.1	5.2	85.1	59.9	92.4
Netherlands	94.4	99.2	94.4	99.2	42.0	84.8
New Zealand	81.9	99.4	81.9	99.4	76.1	96.5
Norway	91.9	99.9	91.9	99.9	78.1	99.6
Poland	45.7	98.0	45.7	98.0	91.3	99.6
Portugal	63.9	98.9	63.9	98.9	80.0	96.5
Slovak Republic	45.6	94.6	45.6	94.6	77.9	98.7
Spain	71.8	97.3	71.8	97.3	81.2	94.3
Sweden	94.2	99.9	94.2	99.9	68.3	97.5
Switzerland	92.0	98.5	92.0	98.5	71.9	93.5
Turkey	7.7	77.2	7.7	77.2	68.2	97.0

Table A.3. **Percentage of students with access to various ICT and educational resources at home, by national top and bottom quarters of the index of economic, social and cultural status (ESCS)** *(continued)*

	A computer you can use for schoolwork		Educational software		Books to help with your schoolwork	
	Bottom quarter	Top quarter	Bottom quarter	Top quarter	Bottom quarter	Top quarter
United Kingdom	86.4	99.8	86.4	99.8	84.2	98.2
United States	69.5	99.5	69.5	99.5	68.1	93.8
OECD	**72.4**	**96.7**	**72.4**	**96.7**	**75.3**	**95.7**
Argentina	14.5	88.7	14.5	88.7	76.7	94.1
Azerbaijan	3.4	41.5	3.4	41.5	49.8	88.5
Brazil	5.9	75.6	5.9	75.6	80.2	95.3
Bulgaria	22.9	95.5	22.9	95.5	65.0	95.3
Chinese Taipei	79.8	95.2	79.8	95.2	50.4	91.6
Colombia	4.3	71.3	4.3	71.3	72.0	97.1
Croatia	62.3	96.0	62.3	96.0	86.8	96.5
Estonia	64.8	93.7	64.8	93.7	78.3	97.9
Hong Kong, China	92.7	98.9	92.7	98.9	56.4	95.3
Indonesia	0.5	46.1	0.5	46.1	76.7	96.0
Israel	77.2	99.4	77.2	99.4	75.6	95.9
Jordan	24.1	88.2	24.1	88.2	45.3	79.4
Kyrgyzstan	4.5	29.6	4.5	29.6	82.7	95.3
Latvia	37.5	93.5	37.5	93.5	90.1	98.8
Liechtenstein	98.8	98.8	98.8	98.8	75.9	89.3
Lithuania	52.2	98.1	52.2	98.1	81.5	97.8
Macao, China	88.0	98.9	88.0	98.9	59.4	88.2
Montenegro	23.3	91.4	23.3	91.4	34.9	80.3
Qatar	72.4	97.7	72.4	97.7	60.7	93.6
Romania	20.8	92.5	20.8	92.5	78.6	98.3
Russian Federation	24.6	90.0	24.6	90.0	87.3	97.8
Serbia	39.2	95.5	39.2	95.5	85.8	97.7
Slovenia	91.2	99.4	91.2	99.4	91.0	98.6
Thailand	8.2	85.9	8.2	85.9	67.1	88.8
Tunisia	2.6	80.8	2.6	80.8	49.1	92.3
Uruguay	22.4	90.3	22.4	90.3	86.0	96.9

Table A.4. **Correlation between students' ESCS and ICT resources at school**

Table A.4a. **Correlation between students' ESCS and never having used a computer at school (OECD countries)**

OECD countries	Correlation	Correlation standard error
Australia	-0.07	0.01
Austria	-0.04	0.02
Belgium	-0.09	0.02
Canada	-0.06	0.01
Chile	0.25	0.02
Czech Republic	-0.10	0.02
Denmark	-0.06	0.01
Finland	0.00	0.02
Germany	0.00	0.02
Greece	0.18	0.02
Hungary	0.03	0.02
Iceland	-0.07	0.02
Ireland	0.01	0.02
Italy	0.01	0.02
Japan	0.02	0.03
Korea	0.05	0.03
Netherlands	-0.03	0.03
New Zealand	-0.02	0.02
Norway	-0.05	0.02
Poland	-0.01	0.02
Portugal	-0.02	0.02
Slovak Republic	-0.03	0.02
Spain	0.00	0.02
Sweden	-0.06	0.02
Switzerland	-0.03	0.02
Turkey	0.15	0.04
OECD	**-0.01**	**0.02**

Table A.4b. **Correlation between students' ESCS and schools principals' reports about:**

	Proportion of computers available for instruction		Proportion of computers connected to the Internet/WWW	
OECD countries	Correlation	SE	Correlation	SE
Australia	-0.02	0.04	0.00	0.04
Austria	-0.06	0.05	-0.02	0.04
Belgium	-0.02	0.04	0.13	0.03
Canada	-0.06	0.03	0.01	0.03
Czech Republic	-0.02	0.04	0.10	0.03
Denmark	0.01	0.03	0.04	0.03
Finland	-0.06	0.04	0.04	0.02
Germany	-0.08	0.04	0.02	0.04
Greece	-0.15	0.09	0.01	0.04
Hungary	-0.03	0.05	0.16	0.03
Iceland	0.07	0.02	0.09	0.01
Ireland	-0.01	0.04	0.02	0.03
Italy	-0.09	0.03	0.08	0.03
Japan	-0.17	0.03	0.01	0.04
Korea	-0.15	0.04	0.00	0.05
Luxembourg	0.10	0.01	0.00	0.01
Mexico	-0.02	0.04	0.35	0.04
Netherlands	-0.11	0.04	-0.01	0.04
New Zealand	-0.07	0.03	0.04	0.03
Norway	-0.02	0.03	0.00	0.03
Poland	-0.10	0.04	0.06	0.03
Portugal	0.02	0.04	0.03	0.05
Slovak Republic	-0.08	0.05	0.03	0.04
Spain	0.04	0.03	-0.10	0.05
Sweden	0.00	0.03	0.03	0.03
Switzerland	-0.08	0.02	0.06	0.02
Turkey	-0.02	0.05	0.06	0.05
United Kingdom	-0.02	0.03	0.03	0.04
United States	0.03	0.04	0.09	0.05
OECD	**-0.04**	**0.04**	**0.05**	**0.04**

Table A.5. **Computers per student by school location**

	Computers per student by school location		
	Rural locations or towns	Cities	Difference
Australia	0.30	0.33	-0.03
Austria	0.32	0.19	0.13
Belgium	0.18	0.14	0.04
Canada	0.25	0.22	0.03
Chile	0.05	0.06	-0.01
Czech Republic	0.15	0.16	-0.01
Denmark	0.22	0.17	0.05
Finland	0.18	0.18	0.00
Germany	0.11	0.09	0.02
Greece	0.11	0.10	0.00
Hungary	0.22	0.23	0.00
Iceland	0.21	0.23	-0.02
Ireland	0.12	0.12	0.00
Italy	0.15	0.13	0.03
Japan	0.33	0.24	0.09
Korea	0.38	0.24	0.14
Luxembourg	0.21	0.79	-0.57
Mexico	0.08	0.11	-0.04
Netherlands	0.19	0.18	0.01
New Zealand	0.26	0.26	0.00
Norway	0.31	0.27	0.04
Poland	0.09	0.07	0.02
Portugal	0.10	0.10	0.00
Slovak Republic	0.08	0.10	-0.02
Spain	0.13	0.12	0.01
Sweden	0.17	0.17	0.00
Switzerland	0.21	0.19	0.02
Turkey	0.08	0.05	0.03
United Kingdom	0.33	0.38	-0.05
United States	0.31	0.25	0.06
OECD	0.20	0.20	0.00

Table A.5. **Computers per student by school location** *(continued)*

	Computers per student by school location		
	Rural locations or towns	Cities	Difference
Argentina	0.05	0.05	0.00
Azerbaijan	0.01	0.02	-0.01
Brazil	0.02	0.04	-0.02
Bulgaria	0.06	0.06	0.00
Chinese Taipei	0.20	0.19	0.02
Colombia	0.21	0.14	0.07
Croatia	0.07	0.08	0.00
Estonia	0.11	0.09	0.01
Indonesia	0.03	0.07	-0.04
Israel	0.10	0.13	-0.02
Jordan	0.05	0.06	0.00
Kyrgyzstan	0.01	0.03	-0.02
Latvia	0.09	0.06	0.03
Liechtenstein	0.30		
Lithuania	0.08	0.06	0.03
Macao, China	0.16	0.16	0.00
Montenegro	0.04	0.03	0.01
Qatar	0.17	0.15	0.02
Romania	0.08	0.07	0.01
Russian Federation	0.04	0.06	-0.02
Serbia	0.06	0.06	0.00
Slovenia	0.21	0.14	0.07
Thailand	0.10	0.11	-0.01
Tunisia	0.02	0.02	-0.01
Uruguay	0.07	0.06	0.01

Table A.6. **Correlation of percentage of various types of computers in school with ESCS**

	PISA 2006							
	Proportion of computers available for instruction		Proportion of computers connected to Internet/WWW		Ratio of computers to school size		Ratio of computers for instruction to school size	
	Correlation	SE	Correlation	SE	Correlation	SE	Correlation	SE
Australia	-0.02	0.04	0.00	0.04	**0.15**	0.03	-0.02	0.01
Austria	-0.06	0.05	-0.02	0.04	-0.02	0.02	0.02	0.04
Belgium	-0.02	0.04	**0.13**	0.03	-0.02	0.03	0.00	0.03
Canada	**-0.06**	0.03	0.01	0.03	**-0.08**	0.02	**-0.07**	0.02
Czech Republic	-0.02	0.04	**0.10**	0.03	0.03	0.03	0.03	0.03
Denmark	0.01	0.03	0.04	0.03	0.03	0.03	0.03	0.03
Finland	-0.06	0.04	0.04	0.02	0.03	0.02	0.03	0.02
Germany	**-0.08**	0.04	0.02	0.04	0.02	0.05	0.04	0.05
Greece	-0.15	0.09	0.01	0.04	**0.10**	0.04	0.08	0.05
Hungary	-0.03	0.05	**0.16**	0.03	-0.01	0.06	-0.01	0.06
Iceland	**0.07**	0.02	**0.09**	0.01	-0.02	0.02	0.01	0.01
Ireland	-0.01	0.04	0.02	0.03	0.02	0.02	-0.04	0.04
Italy	**-0.09**	0.03	**0.08**	0.03	-0.01	0.03	-0.01	0.03
Japan	**-0.17**	0.03	0.01	0.04	**-0.20**	0.03	**-0.07**	0.03
Korea	**-0.15**	0.04	0.00	0.05	**-0.26**	0.07	0.03	0.05
Luxembourg	**0.10**	0.01	0.00	0.01	**0.15**	0.01	**0.16**	0.01
Mexico	-0.02	0.04	**0.35**	0.04	0.03	0.04	0.02	0.04
Netherlands	**-0.11**	0.04	-0.01	0.04	-0.02	0.04	-0.02	0.04
New Zealand	**-0.07**	0.03	0.04	0.03	**-0.06**	0.02	**-0.05**	0.02
Norway	-0.02	0.03	0.00	0.03	0.01	0.03	0.01	0.03
Poland	**-0.10**	0.04	0.06	0.03	0.01	0.01	-0.02	0.02
Portugal	0.02	0.04	0.03	0.05	**0.04**	0.02	**0.04**	0.02
Slovak Republic	-0.08	0.05	0.03	0.04	0.12	0.06	0.12	0.06
Spain	0.04	0.03	**-0.10**	0.05	0.01	0.01	0.01	0.01
Sweden	0.00	0.03	0.03	0.03	-0.03	0.02	-0.02	0.02
Switzerland	**-0.08**	0.02	**0.06**	0.02	-0.01	0.03	0.01	0.03
Turkey	-0.02	0.05	0.06	0.05	-0.05	0.05	-0.05	0.05
United Kingdom	-0.02	0.03	0.03	0.04	**-0.06**	0.02	**-0.07**	0.02
United States	0.03	0.04	**0.09**	0.05	-0.02	0.05	-0.02	0.05
OECD	**-0.04**	**0.04**	**0.05**	**0.04**	**0.00**	**0.04**	**0.01**	0.04

Table A.7. **Percentage of students in schools whose principals report that instruction is hindered by a shortage of computers for instruction**

	PISA 2006	PISA 2003	PISA 2000
	%	%	%
Australia	33.9	34.1	29.5
Austria	24.4	36.4	41.0
Belgium	41.9	43.5	18.3
Canada	38.0	45.4	30.4
Chile	49.7		46.9
Czech Republic	38.8	43.0	37.2
Denmark	38.7	46.3	27.4
Finland	37.0	38.9	42.7
France			28.2
Germany	27.4	33.8	50.1
Greece	23.7	48.7	70.2
Hungary	15.0	26.7	11.8
Iceland	24.2	33.7	44.8
Ireland	54.9	49.5	41.4
Italy	21.4	29.0	31.7
Japan	19.5	39.0	31.3
Korea	32.0	10.2	22.1
Luxembourg	42.0	23.4	23.0
Mexico	59.2	60.2	68.9
Netherlands	38.8	37.8	38.9
New Zealand	41.6	42.2	40.4
Norway	45.8	73.7	60.6
Poland	33.1	55.2	38.4
Portugal	52.2	54.8	38.5
Slovak Republic	38.9	67.5	
Spain	43.3	58.0	29.3
Sweden	46.4	50.2	50.5
Switzerland	15.7	20.6	22.5
Turkey	61.3	81.7	
United Kingdom	37.1	46.4	55.6

Table A.7. **Percentage of students in schools whose principals report that instruction is hindered by a shortage of computers for instruction** *(continued)*

	PISA 2006	PISA 2003	PISA 2000
	%	%	%
United States	33.3	26.4	26.3
OECD	36.5	43.3	37.5
Argentina	51.3		54.0
Azerbaijan	80.7		
Brazil	76.5	66.9	63.0
Bulgaria	48.1		57.2
Chinese Taipei	16.7		
Colombia	69.7		
Croatia	46.2		
Estonia	44.1		
Hong Kong, China	23.3	27.5	15.1
Indonesia	59.4	47.8	57.9
Israel	36.6		28.0
Jordan	67.1		
Kyrgyzstan	90.4		
Latvia	48.6	52.1	39.5
Liechtenstein		11.8	41.2
Lithuania	50.7		
Macao, China	20.8	49.4	
Montenegro	78.7		
Qatar	42.9		
Romania	59.5		
Russian Federation	79.8	77.4	86.4
Serbia	57.6	78.0	
Slovenia	21.0		
Thailand	44.5	63.1	62.3
Tunisia	78.2	68.0	
Uruguay	60.1	70.4	

Table A.8. **Differences in percentages of students with frequent computer use at home and at school, PISA 2003 and PISA 2006**

OECD countries	PISA 2006 Home frequent use (%)	PISA 2006 School frequent use (%)	PISA 2003 Home frequent use (%)	PISA 2003 School frequent use (%)	Diff PISA 2006-PISA 2003 Home frequent use (%)	Diff PISA 2006-PISA 2003 School frequent use (%)
Australia	94	73	87	59	7	14
Austria	89	73	81	53	8	20
Belgium	93	55	84	27	9	28
Canada	94	47	90	40	4	7
Czech Republic	85	69	70	41	15	28
Denmark	95	65	84	68	11	-3
Finland	93	51	78	36	15	15
Germany	90	31	82	23	8	8
Greece	72	58	57	45	15	13
Hungary	84	85	67	80	17	5
Iceland	97	53	89	41	8	12
Ireland	77	47	61	24	16	23
Italy	85	50	76	51	9	-1
Japan	52	50	37	26	15	24
Korea	93	36	86	28	7	8
Netherlands	97	65				
New Zealand	87	50	79	43	8	7
Norway	96	54				
Poland	81	61	59	44	22	17
Portugal	87	60	78	34	9	26
Slovak Republic	77	65	65	42	12	23
Spain	86	42				
Sweden	96	47	89	48	7	-1
Switzerland	93	43	81	30	12	13
Turkey	53	53	48	46	5	7
OECD	**86**	**55**	**74**	**44**	**12**	**11**

Table A.9. **Index of ICT Internet and entertainment use**

Gender difference (males-females)

	Gender difference (M-F)
Sweden	0.71
Norway	0.69
Turkey	0.64
Lithuania	0.63
Poland	0.62
Liechtenstein	0.60
Czech Republic	0.59
Denmark	0.58
Iceland	0.57
Finland	0.56
Slovenia	0.55
Greece	0.54
Latvia	0.54
Germany	0.53
Bulgaria	0.49
Russian Federation	0.49
Italy	0.48
Portugal	0.47
OECD average	0.47
Switzerland	0.46
Slovak Republic	0.45
Netherlands	0.45
Croatia	0.45
Belgium	0.44
Jordan	0.43
Spain	0.43
Uruguay	0.42
Serbia	0.41
Canada	0.40
Hungary	0.37
Australia	0.36
Austria	0.36
Chile	0.35
Korea	0.34
New Zealand	0.31
Colombia	0.28
Macao. China	0.27
Qatar	0.24
Ireland	0.20
Thailand	0.16
Japan	0.13

Table A.10. **Difference in science by years of experience using computers after accounting for the socio-economic background of students**

	Performance on science scale, by using computer								Observed difference in science						Difference in science after accounting for the socio-economic background of students					
	Less than one year		One to three years		Three to five years		More than five years		One to three years		Three to five years		More than five years		One to three years		Three to five years		More than five years	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.
Australia	426	11.16	451	6.74	505	3.39	537	2.15	**25**	12.55	**79**	11.48	**111**	11.18	11	11.63	**54**	11.10	**73**	10.67
Austria	404	13.68	473	9.88	507	4.10	527	3.58	**69**	12.10	**103**	13.21	**124**	13.22	**49**	11.52	**77**	11.29	**89**	11.13
Belgium	432	10.05	464	4.66	507	2.74	540	2.10	**32**	10.13	**76**	9.43	**108**	9.79	**24**	10.25	**55**	9.58	**73**	9.78
Canada	478	9.98	488	5.81	523	3.01	544	1.84	10	11.32	**45**	9.91	**66**	9.79	17	10.51	**41**	9.35	**51**	9.10
Chile	385	3.68	421	4.16	452	4.40	478	4.79	**36**	3.96	**66**	5.18	**93**	5.74	**30**	3.88	**48**	5.01	**50**	5.87
Czech Republic	435	8.40	472	5.32	509	4.01	536	4.08	**37**	8.56	**74**	9.12	**101**	8.74	**29**	8.84	**52**	9.20	**66**	8.92
Denmark	421	14.69	461	6.83	483	4.32	506	3.02	**41**	15.75	**62**	14.56	**86**	14.59	**30**	13.89	**45**	13.31	**56**	13.84
Finland	487	10.90	535	4.87	551	2.85	574	2.23	**49**	12.67	**65**	10.82	**88**	10.76	**38**	13.24	**52**	11.56	**66**	11.18
Germany	444	10.04	490	6.19	522	3.53	537	4.09	**46**	10.42	**78**	9.86	**93**	9.45	**32**	10.84	**55**	9.87	**57**	9.16
Greece	426	5.18	465	3.32	489	3.80	502	3.63	**40**	4.53	**64**	5.17	**76**	5.36	**29**	4.30	**44**	4.95	**44**	5.35
Hungary	437	8.32	481	3.60	506	3.21	522	2.95	**44**	8.16	**69**	8.78	**85**	8.38	**33**	7.56	**47**	8.06	**46**	7.79
Iceland	399	21.11	449	5.37	480	3.19	506	2.00	**51**	21.20	**81**	21.23	**107**	21.42	**44**	21.30	**71**	21.26	**89**	21.65
Ireland	443	7.44	484	4.52	508	3.97	529	2.87	**41**	7.51	**65**	7.93	**86**	7.57	**34**	7.01	**51**	7.28	**62**	6.81
Italy	414	4.69	449	2.74	480	2.40	501	2.27	**35**	4.87	**66**	4.83	**87**	4.92	**28**	5.27	**52**	4.88	**65**	5.11
Japan	486	5.79	520	4.20	548	3.72	560	3.50	**34**	5.79	**62**	5.60	**75**	6.04	**26**	5.68	**49**	5.49	**57**	5.73
Korea	417	15.22	463	10.14	500	5.05	530	3.35	**46**	14.61	**83**	14.64	**113**	14.95	**43**	13.11	**72**	12.97	**90**	13.01

Table A.10. **Difference in science by years of experience using computers after accounting for the socio-economic background of students** *(continued)*

	Performance on science scale, by using computer								Observed difference in science						Difference in science after accounting for the socio-economic background of students					
	Less than one year		One to three years		Three to five years		More than five years		One to three years		Three to five years		More than five years		One to three years		Three to five years		More than five years	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.
Netherlands	484	23.66	483	9.35	514	4.75	538	2.80	-1	24.22	30	23.50	**54**	23.15	5	23.71	32	22.69	44	22.62
New Zealand	423	9.96	453	7.84	511	3.54	549	2.52	**30**	11.95	**88**	10.16	**126**	9.52	**27**	12.01	**64**	9.72	**85**	9.49
Norway	435	12.30	458	6.82	476	3.65	499	2.61	23	13.31	**42**	12.53	**65**	12.40	27	13.98	**38**	13.28	**52**	13.21
Poland	436	4.43	475	3.65	497	2.89	520	2.69	**39**	4.83	**61**	4.88	**84**	4.99	**31**	5.02	**46**	4.64	**47**	5.57
Portugal	393	7.15	435	3.73	472	2.82	498	3.28	**42**	6.94	**79**	6.56	**105**	6.97	**38**	6.62	**65**	6.34	**70**	6.69
Slovak Republic	432	5.01	475	3.69	497	3.05	518	3.80	**43**	5.20	**65**	5.36	**86**	6.31	**29**	4.64	**40**	4.93	**42**	5.39
Spain	423	5.50	458	3.53	491	2.44	516	2.74	**35**	6.11	**68**	5.38	**93**	5.68	**28**	6.02	**53**	5.38	**67**	5.40
Sweden	439	23.33	480	6.80	499	3.86	510	2.61	41	24.25	**59**	23.02	**71**	23.24	31	22.77	**43**	21.28	**48**	21.29
Switzerland	424	8.15	480	4.83	512	3.68	527	3.19	**56**	7.93	**88**	7.66	**103**	8.02	**45**	8.35	**67**	7.76	**73**	8.56
Turkey	400	3.26	421	4.47	433	4.88	451	7.37	**21**	4.46	**33**	5.24	**51**	7.73	**13**	4.14	**18**	4.38	**14**	4.52
OECD	433	12.01	471	6.04	501	3.70	523	3.34	**37**	12.42	**67**	11.98	**90**	12.03	**30**	12.06	**51**	11.50	**61**	11.52
Bulgaria	385	5.99	424	6.10	464	6.08	480	7.13	**40**	6.40	**80**	6.92	**95**	8.27	**24**	5.60	**48**	5.42	**46**	6.15
Colombia	354	6.36	377	4.25	398	3.55	418	3.61	**23**	5.99	**44**	7.30	**64**	6.75	**20**	5.93	**38**	7.44	**45**	6.90
Croatia	437	4.61	475	3.23	500	3.00	522	3.03	**38**	4.78	**63**	5.11	**86**	5.17	**33**	4.73	**49**	5.02	**59**	5.42
Jordan	378	3.99	416	3.06	439	3.02	453	3.80	**38**	4.28	**61**	4.56	**75**	5.09	**35**	4.25	**52**	4.46	**46**	4.68

Table A.10. **Difference in science by years of experience using computers after accounting for the socio-economic background of students** *(continued)*

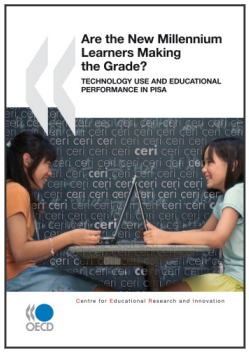
	Performance on science scale, by using computer								Observed difference in science						Difference in science after accounting for the socio-economic background of students					
	Less than one year		One to three years		Three to five years		More than five years		One to three years		Three to five years		More than five years		One to three years		Three to five years		More than five years	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.	Diff	S.E.
Latvia	445	5.36	478	3.80	495	3.63	509	3.78	**32**	5.95	**50**	6.31	**64**	6.03	**28**	5.90	**41**	6.29	**44**	6.71
Liechtenstein	450	39.60	462	22.51	516	7.65	536	6.52	12	45.18	66	39.86	**86**	40.01	70	42.05	**98**	30.79	**106**	30.50
Lithuania	435	4.02	480	3.53	504	3.30	515	4.44	**45**	4.73	**69**	5.13	**80**	5.50	**30**	4.88	**44**	5.58	**38**	5.87
Macao, China	457	7.78	484	3.64	510	2.15	526	1.60	**28**	8.67	**54**	8.16	**69**	7.95	**28**	8.60	**52**	8.21	**63**	8.23
Qatar	318	1.80	335	1.98	361	2.66	382	1.80	**17**	2.83	**43**	3.03	**64**	2.78	**18**	2.86	**44**	3.03	**60**	3.15
Russian Federation	455	4.30	482	4.71	507	4.58	506	4.85	**27**	5.30	**53**	4.85	**51**	5.49	**21**	5.65	**41**	4.74	**29**	6.11
Serbia	397	3.62	430	3.67	454	3.36	472	3.85	**33**	4.21	**57**	3.58	**75**	4.49	**26**	4.23	**42**	3.76	**42**	5.05
Slovenia	453	8.96	493	4.08	518	3.53	536	1.97	**40**	10.22	**66**	10.52	**83**	9.02	**28**	9.78	**34**	10.55	**40**	8.99
Thailand	381	4.75	396	2.73	423	2.63	449	3.39	**15**	5.01	**42**	5.10	**68**	5.51	**13**	4.56	**32**	4.62	**33**	4.56
Uruguay	375	4.49	410	3.88	437	4.13	470	2.98	**35**	4.14	**62**	4.86	95	4.72	**31**	4.06	**47**	5.15	**54**	5.29

Table A.11. **Frequency of computer use at home and at school and student performance on PISA science scale**

	Frequency of computer use at school						Frequency of computer use at home					
	Frequent use		Moderate use		Rare or no use		Frequent use		Moderate use		Rare or no use	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD countries												
Australia	533	(2.4)	530	(3.2)	509	(4.4)	534	(2.3)	483	(6.0)	462	(5.9)
Austria	516	(4.4)	516	(5.7)	508	(6.8)	518	(3.9)	493	(6.5)	460	(8.2)
Belgium	522	(2.5)	524	(4.4)	513	(4.5)	522	(2.2)	475	(7.9)	454	(9.1)
Canada	538	(2.2)	542	(2.5)	535	(3.1)	541	(1.9)	527	(6.1)	486	(5.4)
Czech Republic	526	(3.9)	507	(5.2)	484	(6.2)	526	(3.4)	496	(10.9)	457	(6.3)
Denmark	499	(3.5)	499	(4.2)	480	(6.0)	499	(3.1)	487	(8.8)	448	(10.1)
Finland	561	(2.8)	570	(2.9)	566	(3.6)	566	(2.1)	571	(9.2)	534	(5.9)
Germany	512	(4.7)	524	(5.4)	535	(3.9)	528	(3.5)	505	(6.1)	468	(8.6)
Greece	462	(3.9)	476	(6.9)	502	(3.4)	484	(3.3)	479	(6.9)	452	(3.9)
Hungary	506	(2.7)	485	(6.0)	516	(8.5)	514	(2.7)	484	(9.1)	463	(3.9)
Iceland	495	(2.4)	501	(3.6)	483	(3.1)	494	(1.7)	468	(10.9)	439	(15.5)
Ireland	516	(3.5)	501	(6.8)	515	(3.5)	521	(3.3)	506	(5.0)	481	(4.7)
Italy	469	(2.4)	487	(2.9)	489	(4.0)	484	(2.0)	474	(4.6)	434	(4.7)
Japan	533	(4.3)	542	(6.1)	543	(5.2)	553	(3.6)	537	(4.5)	513	(4.1)
Korea	510	(6.3)	525	(6.2)	531	(3.6)	523	(3.3)	533	(7.8)	502	(10.5)
Netherlands	527	(3.7)	544	(3.9)	523	(7.7)	532	(2.9)	460	(14.2)	480	(15.3)
New Zealand	526	(3.2)	543	(3.9)	547	(3.6)	542	(2.4)	507	(8.5)	480	(6.9)
Norway	488	(3.3)	500	(3.2)	484	(5.2)	493	(2.6)	463	(11.7)	436	(9.7)
Poland	503	(3.0)	497	(3.7)	500	(3.5)	509	(2.5)	479	(8.9)	468	(3.5)
Portugal	478	(3.6)	469	(4.2)	481	(4.3)	486	(2.6)	448	(8.2)	421	(5.2)
Slovak Republic	498	(3.5)	480	(5.0)	486	(4.8)	505	(2.9)	491	(6.8)	451	(4.5)

Table A.11. **Frequency of computer use at home and at school and student performance on PISA science scale** *(continued)*

	Frequency of computer use at school						Frequency of computer use at home					
	Frequent use		Moderate use		Rare or no use		Frequent use		Moderate use		Rare or no use	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Spain	490	(2.8)	495	(4.2)	499	(3.4)	500	(2.5)	473	(6.3)	445	(3.8)
Sweden	503	(3.2)	512	(3.2)	504	(4.2)	506	(2.4)	498	(10.5)	494	(14.2)
Switzerland	511	(3.9)	520	(3.5)	514	(3.6)	515	(3.2)	500	(8.4)	465	(7.8)
Turkey	416	(5.3)	423	(9.0)	448	(6.3)	446	(6.3)	413	(11.9)	419	(3.6)
OECD	**506**	**(3.7)**	**508**	**(5.0)**	**508**	**(5.0)**	**514**	**(3.1)**	**490**	**(8.7)**	**465**	**(8.2)**
Partner countries												
Bulgaria	450	(5.8)	433	(7.5)	419	(9.2)	462	(6.5)	389	(14.1)	406	(5.7)
Chile	434	(4.6)	458	(6.0)	449	(5.9)	467	(4.6)	428	(11.2)	415	(3.0)
Colombia	394	(3.5)	403	(5.3)	399	(10.1)	425	(3.7)	372	(10.9)	390	(3.3)
Croatia	500	(2.7)	504	(5.8)	495	(5.0)	506	(2.4)	477	(8.2)	456	(4.8)
Jordan	428	(2.8)	415	(5.8)	405	(6.4)	435	(3.3)	404	(8.9)	410	(2.7)
Latvia	495	(3.2)	476	(5.1)	483	(7.0)	502	(3.1)	466	(9.6)	468	(4.2)
Liechtenstein	504	(5.6)	542	(13.3)	555	(12.2)	526	(4.5)	473	(37.1)	477	(26.7)
Lithuania	492	(3.0)	491	(4.8)	489	(5.5)	501	(3.0)	455	(10.9)	451	(3.4)
Macao-China	514	(1.3)	510	(5.3)	495	(4.8)	514	(1.1)	484	(5.9)	485	(7.1)
Qatar	353	(1.0)	353	(3.5)	354	(2.5)	356	(1.0)	340	(4.4)	326	(3.3)
Russian Federation	487	(3.7)	481	(8.4)	473	(6.3)	492	(3.9)	450	(11.9)	471	(4.5)
Serbia	441	(3.0)	436	(5.6)	410	(8.8)	449	(3.0)	425	(7.5)	409	(4.5)
Slovenia	531	(1.5)	528	(3.9)	487	(4.3)	523	(1.2)	516	(10.5)	474	(8.7)
Thailand	423	(2.4)	416	(4.9)	414	(5.7)	456	(3.2)	425	(12.2)	402	(2.2)
Uruguay	429	(4.9)	449	(5.0)	447	(3.1)	459	(3.3)	430	(10.2)	414	(3.6)



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