



VET in PISA: Results from PISA 2003 and 2006

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VET IN PISA: RESULTS FROM PISA 2003 AND 2006

1. Introduction

1. The objective of this study is to provide information on upper secondary vocational education and training (VET) by comparing it with academic/general upper secondary education and through a comparison between different VET programmes¹. The study is based on PISA 2006 and 2003 data for the OECD countries and for Israel (an EDPC observer country taking part in the policy review of VET).

2. The study is part of the broader policy review of VET, and will feed into the preparation of the reviews of individual countries as well as into work on the comparative report. It provides descriptive data on national upper secondary programmes. Further work involving comparison of programmes within a country, and of upper secondary VET across countries will be carried out as part of the continuing analytical work of the policy review of VET.

2. Approach, coverage and the scope

3. The study describes educational outcomes by national programmes in terms of mean performance in science, mathematics and reading. It also presents data on students' self-reported characteristics such as their socio-economic and migration background. The study provides descriptions of schools attended by 15-year-olds by programmes, in terms of students' learning environment and teaching practices, school resources, teachers' characteristics, students' learning time, grade repetition, teaching methods and students' perception of the role of the school. These data are based both on students and principals' reports.

4. PISA assesses knowledge and other characteristics of 15-year-olds student population. For the purpose of this study, only countries with some 15-year-old students enrolled in VET programmes (if 3 per cent of all 15-year-old students or more were enrolled in the relevant programme) were selected. This refers to the countries that sort students into VET and general programmes before the age of 15. For example in Sweden students choose between VET and academic programmes when they turn 16, thus at the age of 15, most of them are in their last year of compulsory comprehensive general school.

5. The analysis is carried out at the country level which allows differences within the VET sector to be examined. At the same time comparison across country is possible as national programmes were decoded according to ISCED orientation - programmes are classified as general, vocational and pre-vocational. Special education and art programmes have been excluded.

6. To compare the results of students in different programmes within a country the standard error on the difference must be estimated, to establish whether an observed difference is statistically significant. For example, this is necessary if we want to verify whether students in one programme perform better on average than students in other programmes and compare these differences across countries. We have

¹ Where available information on lower secondary programmes is also provided.

carried out such an analysis for the following variables: mean performance in science, mathematics and reading, and ESCS. Similar computations will be done subsequently for other variables.

3. Results

7. Data are presented individually by country (see tables in Annex A). Additional description of used variables is provided in Annex B. Differences between programmes were shown in a chart form if standard errors on a difference between programmes were computed (see Annex C).

ANNEX A. PISA 2003 AND 2006 DATA

Australia

PISA 2006

National programme	lower secondary general academic	lower secondary with some VET subjects	upper secondary general academic	upper secondary with some VET subjects
ISCED orientation	ISCED 2 General	ISCED2 Pre-Vocational	ISCED 3 General	ISCED 3 Pre-Vocational

PISA Performance Outcome

Distribution of 15-year-olds students by programme (%)	76	4	14	5
(SE)	0.82	0.65	0.53	0.35
Mean performance on science scale	522	494	578	504
(SE)	2.55	10.00	3.27	5.32
Mean performance on mathematics scale	514	496	569	506
(SE)	2.48	9.82	2.96	4.77
Mean performance on reading scale	508	476	563	498
(SE)	2.36	7.93	2.67	4.93

Student Characteristics (based on students responses)

ESCS (Economic Social and Cultural Status) index	0.22	0.03	0.33	-0.08
(SE)	0.02	0.09	0.02	0.04
Percentage of native students	79	82	72	81
(SE)	1.31	2.16	1.98	1.88
Percentage of second generation students	13	9	16	11
(SE)	0.87	1.59	1.40	1.44
Percentage of first generation students	9	9	12	7
(SE)	0.62	1.67	1.14	1.09

School characteristics (based on principals' responses)

Total student/teacher ratio	13.40	13.08	13.58	13.46
(SE)	0.15	0.40	0.20	0.34
Proportion of fully certified teachers (%)	98	98	100	100
(SE)	0.01	0.02	0.00	0.00
Proportion of teachers with ISCED 5A (%)	97	95	97	96
(SE)	0.00	0.03	0.01	0.02
Index of school educational resources	0.40	0.53	0.43	0.39
(SE)	0.06	0.15	0.07	0.09
Index of teacher shortage	0.29	0.23	0.41	0.55
(SE)	0.06	0.17	0.09	0.12
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	71	66	65	61
(SE)	2.69	6.90	3.96	6.11
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	10	28	4	3
(SE)	2.05	8.11	1.18	1.18
Percentage of students in schools where the principal reported that career guidance was not available	0	5	0	2
(SE)	0.09	4.82	NA	1.66
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	79	85	84	81
(SE)	2.31	3.87	3.26	4.75

PISA 2003 – no pre-vocational and vocational programmes enrolling for more than 3% of relevant students population

Notes: In italics: not statistically significant values.

NA: not applies

Australia (continued)**PISA 2006**

National programme	lower secondary general academic	lower secondary with some VET subjects	upper secondary general academic	upper secondary with some VET subjects
ISCED orientation	ISCED 2 General	ISCED2 Pre-Vocational	ISCED 3 General	ISCED 3 Pre-Vocational

School characteristics (based on students' responses)

Average time spent in regular lessons in science at school (in number of hours per week)	3.43	2.70	3.25	1.59
(SE)	0.03	0.19	0.10	0.09
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.15	3.81	4.15	3.67
(SE)	0.03	0.13	0.05	0.07
Average time spent in regular lessons in reading at school (in number of hours per week)	4.09	3.80	4.09	3.87
(SE)	0.03	0.13	0.06	0.06
Index of science teaching with the focus on application	0.23	0.14	0.37	0.03
(SE)	0.02	0.07	0.03	0.08
Index of interactive science teaching	0.21	0.12	0.33	0.06
(SE)	0.02	0.09	0.04	0.06

PISA 2003 – no pre-vocational and vocational programmes enrolling for more than 3% of relevant students population

Notes: In italics: not statistically significant values.

NA: not applies

Austria

PISA 2006

National programme	Lower secondary school	Vocational programme	Gymnasium upper secondary	Apprenticeship	Middle vocational school	Higher vocational school
ISCED orientation	ISCED 2 General	ISCED 3 Pre-Vocational	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 Vocational
PISA Performance Outcome						
Distribution of 15-year-olds students by programme (%)	5	10	22	16	14	27
(SE)	0.72	0.94	1.45	0.87	1.32	0.86
Mean performance on science scale	404	437	581	460	469	558
(SE)	13.37	8.61	5.03	5.22	16.39	4.24
Mean performance on mathematics scale	394	429	571	465	468	553
(SE)	11.47	8.44	5.37	6.50	15.42	4.61
Mean performance on reading scale	368	407	573	427	448	541
(SE)	19.08	9.53	4.42	7.46	14.21	3.72
Student Characteristics (based on students' responses)						
ESCS (Economic Social and Cultural Status) index	-0.28	-0.17	0.82	-0.13	-0.16	0.31
(SE)	0.11	0.04	0.04	0.03	0.09	0.03
Percentage of native students	69	83	90	92	78	91
(SE)	8.24	2.56	0.73	1.18	6.32	0.95
Percentage of second generation students	8	6	5	3	11	3
(SE)	2.24	1.48	0.66	0.77	4.37	0.61
Percentage of first generation students	23	11	5	5	11	5
(SE)	7.37	1.43	0.46	1.05	2.35	0.51
School characteristics (based on principals' responses)						
Total student/teacher ratio	9.23	8.50	11.23	21.76	7.49	9.39
(SE)	0.35	0.46	0.35	2.00	0.66	0.31
Proportion of fully certified teachers (%)	99	73	97	81	97	92
(SE)	0.01	0.05	0.01	0.03	0.01	0.03
Proportion of teachers with ISCED 5A (%)	2	1	96	3	36	66
(SE)	0.01	0.00	0.01	0.01	0.07	0.03
Index of school educational resources	-0.04	-0.14	0.31	0.79	0.48	0.45
(SE)	0.48	0.07	0.20	0.19	0.28	0.15
Index of teacher shortage	0.23	0.18	-0.48	-0.73	-0.34	-0.39
(SE)	0.31	0.17	0.09	0.12	0.18	0.09
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	80	100	34	55	82	75
(SE)	9.46	0.00	7.83	8.00	8.01	7.57
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	67	100	8	62	54	38
(SE)	10.29	0.00	3.36	6.04	8.14	7.32
Percentage of students in schools where the principal reported that career guidance was not available	0	0	13	86	3	5
(SE)	NA	NA	6.29	7.72	2.51	3.53
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	83	100	58	64	70	27
(SE)	8.33	0.00	8.58	29.80	10.30	7.27

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Austria (continued)

PISA 2006

National programme	Lower secondary school	Vocational programme	Gymnasium upper secondary	Apprenticeship	Middle vocational school	Higher vocational school
ISCED orientation	ISCED 2 General	ISCED 3 Pre-Vocational	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)						
Average time spent in regular lessons in science at school (in number of hours per week)	1.92	1.31	3.40	1.23	2.18	2.93
(SE)	0.13	0.10	0.10	0.06	0.14	0.16
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.35	3.39	3.50	3.48	2.51	3.15
(SE)	0.12	0.09	0.04	0.22	0.11	0.07
Average time spent in regular lessons in reading at school (in number of hours per week)	3.53	3.23	3.12	2.28	2.87	2.70
(SE)	0.15	0.11	0.04	0.06	0.16	0.03
Index of science teaching with the focus on application	0.30	-0.15	-0.03	-0.53	-0.22	0.05
(SE)	0.10	0.08	0.04	0.08	0.06	0.04
Index of interactive science teaching	0.30	0.40	0.09	0.12	0.37	-0.03
(SE)	0.11	0.07	0.06	0.05	0.05	0.06

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Austria

PISA 2003

National programme	Hauptschule (lower secondary school)	Polytechnische schule (vocational)	Ahs-oberstufe (gymnasium upper secondary)	Berufsschule (apprenticeship)	Bms (medium vocational school)	Bhs (higher vocational school)
ISCED orientation	ISCED 2 General	ISCED 3 Pre-vocational	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)						
Distribution of 15-year-olds students by programme (%)	4	9	21	20	15	28
(SE)	1.02	0.70	1.62	1.72	1.06	1.30
Percentage of students who repeated a grade once and more	80	10	7	NGR	11	6
(SE)	3.06	1.38	1.04		2.29	0.78
Percentage of students who consider that school does little to prepare them to adult life	79	68	69	66	75	74
(SE)	3.04	1.78	1.79	1.85	1.31	1.28
Percentage of students who consider that school is a waste of time	90	83	93	91	91	97
(SE)	2.34	2.19	0.80	1.15	0.96	0.50
Percentage of students who consider that what they learn in school could be useful in a job	83	85	82	80	95	91
(SE)	3.69	1.91	1.29	1.40	1.08	0.86
Percentage of students who chose school because of specific studying programme	21	49	50	34	67	83
(SE)	3.95	3.93	4.23	2.62	2.46	1.36

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Belgium
PISA 2006

National programme	Flanders			French and German speaking Belgium		
	Second & third stage regular secondary education	Second & third stage technical secondary education	Second & third stage vocational secondary education	Second & third degrees of general education	Second & third degrees of techn. or art. educ. (qualif.)	Second & third degrees of vocational education
ISCED orientation	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
PISA Performance Outcome						
Distribution of 15-year-olds students by programme (%)	25	17	11	22	8	7
(SE)	0.80	0.65	0.66	1.16	0.68	0.72
Mean performance on science scale	593	525	433	545	460	386
(SE)	2.30	2.74	3.03	4.69	4.92	6.31
Mean performance on mathematics scale	608	542	443	554	470	395
(SE)	2.74	3.65	3.30	4.75	4.75	5.41
Mean performance on reading scale	589	521	422	537	459	369
(SE)	2.81	3.38	4.54	4.68	6.43	6.11
Student Characteristics (based on students' responses)						
ESCS (Economic Social and Cultural Status) index	0.61	0.12	-0.31	0.45	-0.04	-0.41
(SE)	0.03	0.02	0.04	0.06	0.05	0.06
Percentage of native students	96	95	88	83	81	78
(SE)	0.50	1.09	2.41	2.51	2.90	4.16
Percentage of second generation students	2	3	5	12	13	8
(SE)	0.45	0.92	1.22	2.04	2.28	1.67
Percentage of first generation students	2	2	7	5	6	14
(SE)	0.27	0.51	1.79	0.78	1.88	3.68
School characteristics (based on principals' responses)						
Total student/teacher ratio	10.61	7.49	7.01	11.55	8.27	7.74
(SE)	0.22	0.22	0.19	0.32	0.26	0.18
Proportion of fully certified teachers (%)	93	95	93	85	78	81
(SE)	0.02	0.02	0.02	0.03	0.06	0.04
Proportion of teachers with ISCED 5A (%)	51	29	22	44	29	20
(SE)	0.01	0.02	0.02	0.03	0.03	0.02
Index of school educational resources	-0.03	0.15	0.16	-0.13	-0.34	-0.32
(SE)	0.10	0.08	0.11	0.13	0.11	0.12
Index of teacher shortage	-0.17	0.16	0.09	0.91	1.32	1.46
(SE)	0.11	0.09	0.11	0.13	0.13	0.15
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	10	26	36	17	24	25
(SE)	3.24	4.70	6.17	5.09	6.51	8.58
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	2	0	0	0	0	0
(SE)	1.45	NA	NA	NA	NA	NA
Percentage of students in schools where the principal reported that career guidance was not available	54	30	23	41	14	8
(SE)	5.66	5.15	4.36	5.94	5.09	4.24
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	74	65	58	25	26	36
(SE)	8.54	6.69	6.53	8.00	6.24	8.65

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Belgium (continued)

PISA 2006

National programme	Flanders			French and German speaking Belgium		
	Second & third stage regular secondary education	Second & third stage technical secondary education	Second & third stage vocational secondary education	Second & third degrees of general education	Second & third degrees of techn. or art. educ. (qualif.)	Second & third degrees of vocational education
ISCED orientation	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)						
Average time spent in regular lessons in science at school (in number of hours per week)	3.45	2.14	0.67	3.63	1.92	1.22
(SE)	0.05	0.10	0.05	0.05	0.15	0.14
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.12	3.14	1.66	4.68	3.19	2.20
(SE)	0.05	0.05	0.07	0.05	0.13	0.10
Average time spent in regular lessons in reading at school (in number of hours per week)	3.45	3.01	2.24	4.45	3.75	3.03
(SE)	0.04	0.04	0.08	0.04	0.09	0.12
Index of science teaching with the focus on application	-0.04	-0.26	-1.00	0.16	-0.31	-0.40
(SE)	0.02	0.03	0.06	0.03	0.06	0.09
Index of interactive science teaching	-0.36	-0.12	0.00	-0.21	0.08	0.04
(SE)	0.03	0.04	0.04	0.04	0.05	0.05

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Belgium

PISA 2003

National programme	Flanders			French and German speaking Belgium			
	2nd & 3rd stage regular sec. education (fl.)	2nd & 3rd stage technical sec. education (fl.)	2nd & 3rd stage vocational sec. ed. (fl.)	general education (fr.)	technical or artistic education (transition) (fr.)	technical or artistic education (qualif.) (fr.)	vocational education (fr.)
ISCED orientation	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)							
Distribution of 15-year-olds students by programme (%)	26	16	11	20	4	8	8
(SE)	0.80	0.72	0.54	1.10	0.72	0.69	0.99
Percentage of students who repeated a grade once and more	8	28	49	19	42	46	63
(SE)	0.83	1.15	1.40	1.44	4.08	3.02	2.92
Percentage of students who consider that school does little to prepare them to adult life	71	69	70	72	64	67	58
(SE)	1.16	1.80	2.10	1.26	3.04	2.21	2.77
Percentage of students who consider that school is a waste of time	96	89	81	94	85	83	81
(SE)	0.40	1.01	1.54	0.85	2.37	2.00	2.39
Percentage of students who consider that what they learn in school could be useful in a job	85	91	93	93	87	94	92
(SE)	0.76	0.81	0.80	0.77	2.05	1.15	1.18
Percentage of students who chose school because of specific studying programme	20	46	36	15	60	45	30
(SE)	1.41	2.37	1.37	1.29	5.54	2.63	2.27

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Czech Republic

PISA 2006

National programme	Basic School	6, 8-Year Gymnasium (Upper Secondary)	4- Year Gymnasium	VOC/TECH Secondary School with Maturate	VOC/TECH Secondary School without Maturate
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
PISA Performance Outcome					
Distribution of 15-year-olds students by programme (%)	42	4	6	28	12
(SE)	1.28	0.18	0.72	1.53	1.59
Mean performance on science scale	489	634	613	542	443
(SE)	3.20	7.81	10.13	5.70	8.97
Mean performance on mathematics scale	482	646	614	542	440
(SE)	3.59	7.96	15.47	5.67	8.79
Mean performance on reading scale	457	618	603	522	386
(SE)	4.27	4.89	10.96	4.87	12.10
Student Characteristics (based on students' responses)					
ESCS (Economic Social and Cultural Status) index	-0.05	0.77	0.57	0.05	-0.25
(SE)	0.03	0.04	0.08	0.04	0.04
Percentage of native students	97	99	99	99	99
(SE)	0.44	0.31	0.54	0.31	0.36
Percentage of second generation students	1	0		0	1
(SE)	0.21	0.10		0.15	0.42
Percentage of first generation students	2	1	1	1	0
(SE)	0.38	0.30	0.54	0.28	0.25
School characteristics (based on principals' responses)					
Total student/teacher ratio	15.84	13.35	13.22	10.58	14.09
(SE)	0.21	0.27	0.68	0.56	1.24
Proportion of fully certified teachers (%)	87	99	94	91	79
(SE)	0.02	0.00	0.04	0.02	0.05
Proportion of teachers with ISCED 5A (%)	88	98	95	88	64
(SE)	0.02	0.01	0.04	0.03	0.05
Index of school educational resources	-0.15	-0.41	0.12	0.12	-0.24
(SE)	0.12	0.11	0.22	0.12	0.14
Index of teacher shortage	0.35	-0.55	-0.32	-0.02	0.31
(SE)	0.08	0.11	0.26	0.08	0.14
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	64	40	41	79	85
(SE)	5.10	6.72	13.69	7.65	8.14
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	0	0	0	34	38
(SE)	NA	NA	NA	7.19	12.29
Percentage of students in schools where the principal reported that career guidance was not available	0	0	0	0	4
(SE)	NA	NA	NA	NA	4.62
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	47	5	8	3	0
(SE)	5.82	3.32	7.95	2.40	NA

Notes: In italics: not statistically significant values.

NA: not applies

NGR: no grade repetition.

Czech Republic (continued)

PISA 2006

National programme	Basic School	6, 8-Year Gymnasium (Upper Secondary)	4- Year Gymnasium	VOC/TECH Secondary School with Maturate	VOC/TECH Secondary School without Maturate
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)					
Average time spent in regular lessons in science at school (in number of hours per week)	2.74	5.50	5.40	2.51	1.74
(SE)	0.06	0.13	0.24	0.15	0.13
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.30	3.86	3.76	3.81	3.49
(SE)	0.05	0.07	0.18	0.12	0.11
Average time spent in regular lessons in reading at school (in number of hours per week)	4.06	3.55	3.53	3.38	3.46
(SE)	0.04	0.11	0.11	0.06	0.11
Index of science teaching with the focus on application	-0.03	-0.04	-0.07	-0.33	-0.32
(SE)	0.03	0.05	0.06	0.04	0.07
Index of interactive science teaching	0.20	-0.02	0.10	-0.01	0.21
(SE)	0.03	0.05	0.08	0.04	0.05

Notes: In italics: not statistically significant values.

NA: not applies

NGR: no grade repetition.

Czech Republic

PISA 2003

National programme	basic school	6, 8-year gymnasium (upper sec.)	4- year gymnasium	voc/tech sec. school with maturate	voc/tech sec. school without maturate
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)					
Distribution of 15-year-olds students by programme (%)	41	4	6	28	13
(SE)	1.16	0.49	0.76	1.30	0.84
Percentage of students who repeated a grade once and more	6	NGR	NGR	NGR	NGR
(SE)	0.80	NGR	NGR	NGR	NGR
Percentage of students who consider that school does little to prepare them to adult life	69	68	71	72	64
(SE)	1.61	3.89	1.78	1.07	1.45
Percentage of students who consider that school is a waste of time	91	96	99	96	91
(SE)	0.71	1.04	1.03	0.70	1.40
Percentage of students who consider that what they learn in school could be useful in a job	89	89	91	95	93
(SE)	0.89	2.87	2.40	0.44	1.01
Percentage of students who chose school because of specific studying programme	15	22	39	80	79
(SE)	2.24	5.07	6.74	2.06	2.32

Notes: In italics: not statistically significant values.

NA: not applies

NGR: no grade repetition.

France

PISA 2006

	Lower Secondary (General)	Upper Secondary (general or techn.)	Upper Secondary (professional: CAP, BEP, OTHERS)
National programme			
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
<i>PISA Performance Outcome</i>			
Distribution of 15-year-olds students by programme (%)	37	51	9
(SE)	1.33	1.18	0.83
Mean performance on science scale	430	560	450
(SE)	4.12	3.66	9.20
Mean performance on mathematics scale	430	558	463
(SE)	3.84	3.36	10.66
Mean performance on reading scale	422	554	448
(SE)	4.63	3.82	14.97
<i>Student Characteristics (based on students' responses)</i>			
ESCS (Economic Social and Cultural Status) index	-0.42	0.26	-0.48
(SE)	0.04	0.04	0.06
Percentage of native students	84	89	91
(SE)	1.88	1.49	1.87
Percentage of second generation students	11	9	7
(SE)	1.52	1.27	1.59
Percentage of first generation students	5	2	2
(SE)	0.62	0.44	0.54
<i>School characteristics (based on principals' responses)</i>			
Total student/teacher ratio	NA	NA	NA
(SE)	NA	NA	NA
Proportion of fully certified teachers (%)	NA	NA	NA
(SE)	NA	NA	NA
Proportion of teachers with ISCED 5A (%)	NA	NA	NA
(SE)	NA	NA	NA
Index of school educational resources	NA	NA	NA
(SE)	NA	NA	NA
Index of teacher shortage	NA	NA	NA
(SE)	NA	NA	NA
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	NA	NA	NA
(SE)	NA	NA	NA
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	NA	NA	NA
(SE)	NA	NA	NA
Percentage of students in schools where the principal reported that career guidance was not available	NA	NA	NA
(SE)	NA	NA	NA
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	NA	NA	NA
(SE)	NA	NA	NA

Notes: In italics: not statistically significant values.

NA: not applies

3 NGR stands for no grade repetition.

France (continued)

PISA 2006

National programme	Lower Secondary (General)	Upper Secondary (general or techn.)	
ISCED orientation	ISCED 2 General	ISCED 3 General	
<i>School characteristics (based on students' responses)</i>			
Average time spent in regular lessons in science at school (in number of hours per week)	1.78	3.93	1.46
(SE)	0.04	0.06	0.14
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.69	4.19	2.70
(SE)	0.04	0.04	0.08
Average time spent in regular lessons in reading at school (in number of hours per week)	3.85	4.32	3.15
(SE)	0.05	0.03	0.09
Index of science teaching with the focus on application	-0.03	0.10	-0.44
(SE)	0.03	0.02	0.06
Index of interactive science teaching	0.01	-0.30	-0.17
(SE)	0.03	0.02	0.07

Notes: In italics: not statistically significant values.

NA: not applies

3 NGR stands for no grade repetition.

France

PISA 2003

National programme	5ème, 4ème, 3ème (lower sec.)	2nde ou 1ère (générale ou techn.) (upper sec. general)	enseignement professionnel (upper sec. vocational)
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>			
Distribution of 15-year-olds students by programme (%)	38	52	7
(SE)	1.27	1.03	0.66
Percentage of students who repeated a grade once and more	95	1	1
(SE)	0.70	0.23	0.55
Percentage of students who consider that school does little to prepare them to adult life	69	81	73
(SE)	1.34	0.92	2.91
Percentage of students who consider that school is a waste of time	87	97	92
(SE)	1.00	0.35	1.49
Percentage of students who consider that what they learn in school could be useful in a job	89	96	95
(SE)	0.86	0.49	1.12
Percentage of students who chose school because of specific studying programme	10	27	48
(SE)	1.13	2.32	4.11

Notes: In italics: not statistically significant values.

NA: not applies

3 NGR stands for no grade repetition.

Greece

PISA 2006

	lower secondary education	upper secondary education	(technical- vocational schools) upper secondary education
National programme	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
PISA Performance Outcome			
Distribution of 15-year-olds students by programme (%)	7	78	14
(SE)	0.99	1.77	1.50
Mean performance on science scale	374	500	387
(SE)	9.93	2.59	6.12
Mean performance on mathematics scale	368	483	382
(SE)	10.02	2.55	5.40
Mean performance on reading scale	372	489	350
(SE)	12.92	3.15	10.20
Student Characteristics (based on students' responses)			
ESCS (Economic Social and Cultural Status) index	-0.95	0.02	-0.68
(SE)	0.07	0.04	0.06
Percentage of native students	58	96	91
(SE)	4.98	0.49	1.47
Percentage of second generation students	1	1	1
(SE)	0.81	0.24	0.38
Percentage of first generation students	40	3	7
(SE)	4.51	0.39	1.37
School characteristics (based on principals' responses)			
Total student/teacher ratio	8.33	9.38	6.42
(SE)	0.42	0.24	0.30
Proportion of fully certified teachers (%)	99	98	90
(SE)	0.01	0.01	0.02
Proportion of teachers with ISCED 5A (%)	90	98	57
(SE)	0.07	0.01	0.06
Index of school educational resources	-0.23	0.12	-0.68
(SE)	0.13	0.09	0.17
Index of teacher shortage	-0.42	-0.38	-0.15
(SE)	0.22	0.09	0.22
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	41	41	75
(SE)	11.59	4.92	8.08
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	0	0	0
(SE)	NA	NA	NA
Percentage of students in schools where the principal reported that career guidance was not available	0	1	41
(SE)	NA	0.82	11.85
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	100	99	82
(SE)	0.00	0.50	10.36

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Greece (continued)

PISA 2006

	lower secondary education	upper secondary education	(technical-vocational schools) upper secondary education
National programme			
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
School characteristics (based on students' responses)			
Average time spent in regular lessons in science at school (in number of hours per week)	2.33	3.51	1.74
(SE)	0.17	0.05	0.08
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.24	3.63	2.59
(SE)	0.21	0.04	0.07
Average time spent in regular lessons in reading at school (in number of hours per week)	2.74	3.43	1.94
(SE)	0.22	0.03	0.07
Index of science teaching with the focus on application	0.55	0.31	0.43
(SE)	0.09	0.02	0.05
Index of interactive science teaching	0.96	0.51	0.72
(SE)	0.06	0.02	0.05

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Greece

PISA 2003

	gymnasio (lower sec. education)	eniaio lykeio (upper sec. education)	technical-vocational training inst.: 1st & 2nd cycle
National programme			
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
School characteristics (based on students' responses)			
Distribution of 15-year-olds students by programme (%)	9	71	20
(SE)	1.30	2.15	2.21
Percentage of students who repeated a grade once and more	44	1	9
(SE)	3.13	0.19	1.15
Percentage of students who consider that school does little to prepare them to adult life	68	59	62
(SE)	2.71	1.08	1.72
Percentage of students who consider that school is a waste of time	96	94	95
(SE)	1.07	0.58	0.56
Percentage of students who consider that what they learn in school could be useful in a job	93	88	93
(SE)	1.27	0.71	0.58
Percentage of students who chose school because of specific studying programme	11	12	48
(SE)	1.58	1.69	1.77

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Hungary

PISA 2006

National programme	Primary School	Vocational School	Vocational Secondary School	Grammar School
ISCED orientation	ISCED 2 General	ISCED 3 Vocational	ISCED 3 Pre-Vocational	ISCED 3 General
PISA Performance Outcome				
Distribution of 15-year-olds students by programme (%)	8	18	39	35
(SE)	0.87	0.98	1.57	1.48
Mean performance on science scale	392	431	507	561
(SE)	6.46	3.99	3.52	4.57
Mean performance on mathematics scale	366	421	493	551
(SE)	8.01	3.60	3.36	4.94
Mean performance on reading scale	350	399	492	543
(SE)	12.23	5.23	4.21	5.30
Student Characteristics (based on students responses)				
ESCS (Economic Social and Cultural Status) index	-1.00	-0.70	-0.14	0.48
(SE)	0.06	0.04	0.03	0.05
Percentage of native students	98	99	98	98
(SE)	1.12	0.28	0.43	0.45
Percentage of second generation students	0	NA	0	0
(SE)	0.34		0.19	0.17
Percentage of first generation students	2	1	2	1
(SE)	0.95	0.28	0.39	0.46
School characteristics (based on principals' responses)				
Total student/teacher ratio	11.37	13.72	11.59	12.15
(SE)	0.74	1.26	0.49	0.57
Proportion of fully certified teachers (%)	94	93	96	99
(SE)	0.04	0.04	0.02	0.00
Proportion of teachers with ISCED 5A (%)	94	93	96	99
(SE)	0.04	0.04	0.02	0.00
Index of school educational resources	0.07	0.29	0.15	0.23
(SE)	0.24	0.16	0.11	0.11
Index of teacher shortage	-0.45	-0.46	-0.41	-0.79
(SE)	0.17	0.13	0.08	0.08
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	23	69	47	15
(SE)	8.10	7.49	6.05	5.81
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	0	3	1	0
(SE)	NA	3.10	1.09	NA
Percentage of students in schools where the principal reported that career guidance was not available	1	9	6	8
(SE)	0.60	5.87	1.86	4.91
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	55	30	42	38
(SE)	9.62	9.75	8.54	8.57

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Hungary (continued)**PISA 2006**

National programme	Primary School	Vocational School	Vocational Secondary School	Grammar School
ISCED orientation	ISCED 2 General	ISCED 3 Vocational	ISCED 3 Pre-Vocational	ISCED 3 General
<i>School characteristics (based on students' responses)</i>				
Average time spent in regular lessons in science at school (in number of hours per week)	1.93	1.93	2.32	3.12
(SE)	0.10	0.07	0.07	0.09
Average time spent in regular lessons in mathematics at school (in number of hours per week)	2.76	2.71	3.46	3.48
(SE)	0.16	0.05	0.07	0.07
Average time spent in regular lessons in reading at school (in number of hours per week)	2.46	2.46	3.31	3.55
(SE)	0.13	0.07	0.06	0.08
Index of science teaching with the focus on application	0.33	-0.05	-0.08	0.07
(SE)	0.09	0.04	0.03	0.04
Index of interactive science teaching	0.31	0.18	0.14	0.20
(SE)	0.07	0.06	0.03	0.05

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Hungary**PISA 2003**

National programme	primary school	vocational school	vocational sec. school	grammar school
ISCED orientation	ISCED 2 General	ISCED 3 Vocational	ISCED 3 Pre-vocational	ISCED 3 General
<i>School characteristics (based on students' responses)</i>				
Distribution of 15-year-olds students by programme (%)	6	20	39	35
(SE)	0.52	0.73	0.86	0.99
Percentage of students who repeated a grade once and more	75	11	5	2
(SE)	3.12	0.77	0.52	0.48
Percentage of students who consider that school does little to prepare them to adult life	55	54	54	55
(SE)	3.28	1.95	1.61	1.27
Percentage of students who consider that school is a waste of time	90	91	94	96
(SE)	2.03	1.56	0.60	0.50
Percentage of students who consider that what they learn in school could be useful in a job	92	92	93	91
(SE)	1.49	1.67	0.59	0.92
Percentage of students who chose school because of specific studying programme	13	15	39	50
(SE)	2.61	1.34	2.67	3.12

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Israel

PISA 2006

National programme	Secondary education (Lower)	6 Years higher education Years 7-9	6 Years higher education years 10-12	Higher education technical/vocational	Higher religious education for boys with matriculation	Higher religious education for girls years 10-12 with matriculation
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 General	ISCED 3 General
PISA Performance Outcome						
Distribution of 15-year-olds students by programme (%)	3	9	56	17	5	5
(SE)	0.97	1.29	3.10	2.92	1.36	1.05
Mean performance on science scale	427	434	468	419	468	452
(SE)	13.64	7.20	5.61	13.49	24.64	9.59
Mean performance on mathematics scale	422	418	456	395	477	460
(SE)	14.03	7.79	5.58	15.94	26.48	7.87
Mean performance on reading scale	381	417	454	393	432	479
(SE)	16.80	8.80	6.57	17.34	25.68	7.61
Student Characteristics (based on students' responses)						
ESCS (Economic Social and Cultural Status) index	-0.02	0.07	0.31	0.06	0.51	0.01
(SE)	0.11	0.06	0.03	0.06	0.06	0.06
Percentage of native students	54	61	80	76	78	81
(SE)	12.59	4.37	1.58	3.15	4.58	4.17
Percentage of second generation students	11	15	11	10	14	16
(SE)	3.57	2.17	0.87	1.28	4.75	3.62
Percentage of first generation students	35	24	9	14	7	3
(SE)	13.90	4.26	1.17	2.69	2.89	0.68
School characteristics (based on principals' responses)						
Total student/teacher ratio	12.79	13.32	13.45	12.04	9.32	12.44
(SE)	1.68	1.06	0.51	1.13	0.40	1.96
Proportion of fully certified teachers (%)	96	81	81	69	84	47
(SE)	0.02	0.03	0.02	0.05	0.08	0.08
Proportion of teachers with ISCED 5A (%)	5	9	10	7	5	18
(SE)	0.01	0.02	0.01	0.02	0.02	0.17
Index of school educational resources	0.32	0.36	0.06	0.21	-0.57	-0.30
(SE)	0.78	0.23	0.10	0.24	0.49	0.42
Index of teacher shortage	-0.84	-0.21	-0.26	-0.07	-0.09	-0.36
(SE)	0.25	0.17	0.10	0.21	0.69	0.11
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	51	12	19	23	0	0
(SE)	16.58	4.84	4.10	8.64	NA	NA
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	0	3	3	12	0	0
(SE)	NA	2.47	1.93	6.70	NA	NA
Percentage of students in schools where the principal reported that career guidance was not available	0	39	33	21	35	61
(SE)	NA	7.05	4.76	7.90	29.55	18.56
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	0	16	22	41	0	70
(SE)	NA	8.18	6.11	12.98	NA	28.35

Notes: In italics: not statistically significant values.

NA: not applies.

Israel (continued)

PISA 2006

National programme	Secondary education (Lower)	6 Years higher education Years 7-9	6 Years higher education years 10-12	Higher education technical/vocational	Higher religious education for boys with matriculation	Higher religious education for girls years 10-12 with matriculation
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 General	ISCED 3 General

School characteristics (based on students' responses)

Average time spent in regular lessons in science at school (in number of hours per week)	2.37	2.59	2.54	2.31	1.81	2.12
(SE)	0.19	0.10	0.08	0.10	0.13	0.33
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.10	4.12	4.20	3.94	4.13	4.35
(SE)	0.16	0.14	0.05	0.14	0.23	0.26
Average time spent in regular lessons in reading at school (in number of hours per week)	2.58	2.79	3.17	2.72	3.02	3.24
(SE)	0.20	0.12	0.05	0.10	0.36	0.13
Index of science teaching with the focus on application	0.20	0.22	0.08	0.03	-0.32	0.02
(SE)	0.10	0.07	0.03	0.07	0.32	0.06
Index of interactive science teaching	0.38	0.38	0.30	0.27	0.07	0.36
(SE)	0.07	0.05	0.03	0.04	0.34	0.11

Notes: In italics: not statistically significant values.

NA: not applies.

Italy

PISA 2006

National programme	Liceo (Sc., Class., Soc. Sc., Scient.-Technological, Linguistic)	Technical Institute	Vocational Institute Art Institute, Art High School
ISCED orientation	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
PISA Performance Outcome			
Distribution of 15-year-olds students by programme (%)	42	31	23
(SE)	0.84	0.72	0.75
Mean performance on science scale	518	475	414
(SE)	3.19	2.91	4.27
Mean performance on mathematics scale	499	467	400
(SE)	3.94	2.90	4.05
Mean performance on reading scale	525	463	391
(SE)	2.59	4.22	6.95
Student Characteristics (based on students' responses)			
ESCS (Economic Social and Cultural Status) index	0.34	-0.22	-0.52
(SE)	0.03	0.03	0.04
Percentage of native students	98.19	95.58	95.62
(SE)	0.22	0.47	0.46
Percentage of second generation students	0.52	0.82	0.68
(SE)	0.13	0.15	0.16
Percentage of first generation students	1.29	3.60	3.70
(SE)	0.17	0.43	0.48
School characteristics (based on principals' responses)			
Total student/teacher ratio	11.27	8.19	7.03
(SE)	0.25	0.11	0.17
Proportion of fully certified teachers (%)	94	92	82
(SE)	0.01	0.01	0.04
Proportion of teachers with ISCED 5A (%)	86	83	75
(SE)	0.02	0.02	0.02
Index of school educational resources	0.18	0.48	-0.22
(SE)	0.08	0.09	0.09
Index of teacher shortage	0.00	0.12	0.06
(SE)	0.11	0.07	0.19
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	38	48	59
(SE)	4.16	4.47	5.96
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	1	0	13
(SE)	0.58	0.13	5.27
Percentage of students in schools where the principal reported that career guidance was not available	50	17	4
(SE)	3.71	3.95	1.86
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	50	69	84
(SE)	6.92	6.01	3.68

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Italy (continued)**PISA 2006**

National programme	Liceo (Sc., Class., Soc. Sc., Scient.-Technological, Linguistic)	Technical Institute	Vocational Institute Art Institute, Art High School
ISCED orientation	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>			
Average time spent in regular lessons in science at school (in number of hours per week)	2.83	3.66	2.21
(SE)	0.11	0.05	0.07
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.98	3.98	3.10
(SE)	0.06	0.05	0.06
Average time spent in regular lessons in reading at school (in number of hours per week)	4.98	4.59	4.17
(SE)	0.06	0.06	0.07
Index of science teaching with the focus on application	-0.19	-0.01	0.00
(SE)	0.02	0.02	0.04
Index of interactive science teaching	0.28	0.39	0.51
(SE)	0.02	0.02	0.03

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Italy**PISA 2003**

National programme	scientific, classical or linguistic high school	technical institute	professional or art institute, art high school
ISCED orientation	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>			
Distribution of 15-year-olds students by programme (%)	39	34	25
(SE)	1.09	0.81	1.04
Percentage of students who repeated a grade once and more	5	15	26
(SE)	0.78	1.12	1.52
Percentage of students who consider that school does little to prepare them to adult life	69	64	63
(SE)	1.38	1.19	1.68
Percentage of students who consider that school is a waste of time	97	94	91
(SE)	0.65	0.61	0.87
Percentage of students who consider that what they learn in school could be useful in a job	88	92	92
(SE)	0.89	0.56	0.90
Percentage of students who chose school because of specific studying programme	67	76	70
(SE)	1.86	1.46	1.79

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Japan

PISA 2006

National programme	Upper Secondary School	Upper Secondary School
ISCED orientation	ISCED 3 General	ISCED 3 Vocational
PISA Performance Outcome		
Distribution of 15-year-olds students by programme (%)	74	25
(SE)	1.57	1.62
Mean performance on science scale	546	482
(SE)	3.68	7.79
Mean performance on mathematics scale	537	476
(SE)	3.67	7.27
Mean performance on reading scale	515	443
(SE)	3.87	9.42
Student Characteristics (based on students' responses)		
ESCS (Economic Social and Cultural Status) index	0.09	-0.32
(SE)	0.02	0.03
Percentage of native students	100	100
(SE)	0.13	0.11
Percentage of second generation students	0	0
(SE)	0.05	0.09
Percentage of first generation students	0	0
(SE)	0.10	0.06
School characteristics (based on principals' responses)		
Total student/teacher ratio	13.74	10.25
(SE)	0.31	0.81
Proportion of fully certified teachers (%)	99	98
(SE)	0.00	0.01
Proportion of teachers with ISCED 5A (%)	99	95
(SE)	0.00	0.01
Index of school educational resources	0.48	0.36
(SE)	0.08	0.15
Index of teacher shortage	-0.53	-0.47
(SE)	0.06	0.12
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	13	40
(SE)	2.90	7.58
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	6	3
(SE)	2.27	2.26
Percentage of students in schools where the principal reported that career guidance was not available	0	0
(SE)	NA	NA
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	98	95
(SE)	1.38	3.19

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Japan (continued)**PISA 2006**

National programme	Upper Secondary School	Upper Secondary School
ISCED orientation	ISCED 3 General	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>		
Average time spent in regular lessons in science at school (in number of hours per week)	2.92	2.02
(SE)	0.06	0.11
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.67	2.85
(SE)	0.07	0.11
Average time spent in regular lessons in reading at school (in number of hours per week)	4.11	3.01
(SE)	0.05	0.08
Index of science teaching with the focus on application	-0.93	-0.95
(SE)	0.02	0.07
Index of interactive science teaching	-1.17	-1.05
(SE)	0.02	0.05

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Japan**PISA 2003**

National programme	upper sec. school	upper sec. school
ISCED orientation	ISCED 3 General	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>		
Distribution of 15-year-olds students by programme (%)	75	25
(SE)	0.49	1.03
Percentage of students who repeated a grade once and more	NA	NA
(SE)	NA	NA
Percentage of students who consider that school does little to prepare them to adult life	66	69
(SE)	0.85	2.10
Percentage of students who consider that school is a waste of time	90	89
(SE)	0.56	1.12
Percentage of students who consider that what they learn in school could be useful in a job	58	67
(SE)	0.95	1.42
Percentage of students who chose school because of specific studying programme	13	67
(SE)	1.37	3.92

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Korea

PISA 2006

National programme	Upper Secondary Education	Upper Secondary Education
ISCED orientation	ISCED 3 General	ISCED 3 Vocational
<i>PISA Performance Outcome</i>		
Distribution of 15-year-olds students by programme (%)	75	23
(SE)	1.05	0.96
Mean performance on science scale	544	456
(SE)	3.64	7.40
Mean performance on mathematics scale	571	476
(SE)	4.24	7.19
Mean performance on reading scale	577	494
(SE)	3.69	9.53
<i>Student Characteristics (based on students' responses)</i>		
ESCS (Economic Social and Cultural Status) index	0.13	-0.48
(SE)	0.03	0.03
Percentage of native students	100	100
(SE)	0.03	0.00
Percentage of second generation students	0	NA
(SE)	0.03	
Percentage of first generation students	NA	NA
(SE)		
<i>School characteristics (based on principals' responses)</i>		
Total student/teacher ratio	16.65	14.78
(SE)	0.19	0.29
Proportion of fully certified teachers (%)	99	100
(SE)	0.01	0.00
Proportion of teachers with ISCED 5A (%)	100	99
(SE)	0.00	0.01
Index of school educational resources	-0.16	-0.34
(SE)	0.07	0.16
Index of teacher shortage	-0.56	-0.30
(SE)	0.07	0.17
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	11	34
(SE)	3.03	7.72
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	2	7
(SE)	1.30	4.62
Percentage of students in schools where the principal reported that career guidance was not available	0	0
(SE)	NA	NA
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	73	68
(SE)	4.68	5.49

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Korea (continued)**PISA 2006**

National programme	Upper Secondary Education	Upper Secondary Education
ISCED orientation	ISCED 3 General	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>		
Average time spent in regular lessons in science at school (in number of hours per week)	3.86	2.69
(SE)	0.07	0.16
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.99	3.82
(SE)	0.05	0.10
Average time spent in regular lessons in reading at school (in number of hours per week)	4.73	3.70
(SE)	0.04	0.12
Index of science teaching with the focus on application	-0.29	-0.50
(SE)	0.02	0.05
Index of interactive science teaching	-1.08	-0.93
(SE)	0.03	0.04

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Korea**PISA 2003**

National programme	upper sec. education (ilban kodeung-hakgyo)	upper sec. education (silup kodeung-hakgyo)
ISCED orientation	ISCED 3 General	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>		
Distribution of 15-year-olds students by programme (%)	72	27
(SE)	0.91	0.88
Percentage of students who repeated a grade once and more	0	1
(SE)	0.07	0.24
Percentage of students who consider that school does little to prepare them to adult life	73	71
(SE)	0.78	1.43
Percentage of students who consider that school is a waste of time	90	88
(SE)	0.48	1.29
Percentage of students who consider that what they learn in school could be useful in a job	68	80
(SE)	0.88	1.24
Percentage of students who chose school because of specific studying programme	9	22
(SE)	1.60	2.98

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Luxembourg

PISA 2006

National programme	lower secondary education (preparatory regime of technical secondary edu.)	lower secondary education (technical)	lower secondary education (general)	a 4-year vocational - technical education	a 4 to 5-year technical education	upper secondary education	upper secondary private not subsidized
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 2 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 General	ISCED 3 General

PISA Performance Outcome

Distribution of 15-year-olds students by programme (%)	8	41	16	4	7	18	4
(SE)	0.22	0.35	0.34	0.22	0.24	0.30	0.09
Mean performance on science scale	332	446	530	495	516	572	571
(SE)	4.03	1.64	2.41	5.72	3.46	2.57	5.94
Mean performance on mathematics scale	343	450	530	500	512	578	568
(SE)	3.34	1.73	2.48	6.67	3.50	2.09	5.78
Mean performance on reading scale	304	438	531	485	512	571	555
(SE)	4.34	1.60	2.49	5.75	3.59	2.98	6.12

Student Characteristics (based on students' responses)

ESCS (Economic Social and Cultural Status) index	-0.90	-0.28	0.52	-0.10	0.08	0.75	1.12
(SE)	0.04	0.02	0.03	0.07	0.06	0.03	0.04
Percentage of native students	32	58	78	73	68	86	10
(SE)	2.56	1.10	1.48	2.69	2.31	1.20	2.32
Percentage of second generation students	22	25	14	18	24	8	28
(SE)	2.44	0.91	1.20	2.72	2.25	0.96	3.81
Percentage of first generation students	46	17	9	9	9	5	61
(SE)	2.64	0.81	1.08	2.02	1.47	0.81	3.98

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Luxembourg (continued)

PISA 2006

National programme	lower secondary education (preparatory regime of technical secondary edu.)	lower secondary education (technical)	lower secondary education (general)	a 4-year vocational - technical education	a 4 to 5-year technical education	upper secondary education	upper secondary private not subsidized
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 2 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 General	ISCED 3 General

School characteristics (based on principals' responses)

Total student/teacher ratio	8.55	8.99	10.01	8.92	9.15	9.98	12.80
(SE)	0.03	0.01	0.02	0.07	0.03	0.01	0.09
Proportion of fully certified teachers (%)	74	80	83	80	83	84	55
(SE)	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Proportion of teachers with ISCED 5A (%)	29	33	35	34	27	40	75
(SE)	0.01	0.00	0.01	0.02	0.01	0.01	0.00
Index of school educational resources	0.31	0.29	0.16	0.36	0.16	0.19	0.71
(SE)	0.02	0.01	0.02	0.05	0.02	0.02	0.01
Index of teacher shortage	1.34	0.94	1.26	1.21	0.89	1.14	0.80
(SE)	0.03	0.01	0.02	0.05	0.03	0.01	0.00
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	37	46	32	65	30	26	36
(SE)	1.35	0.42	0.90	2.91	1.63	0.61	1.24
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	18	17	6	24	19	1	0
(SE)	1.14	0.32	0.72	2.49	1.21	0.33	NA
Percentage of students in schools where the principal reported that career guidance was not available	0	0	20	3	0	23	0
(SE)	NA	NA	0.88	1.31	NA	0.79	NA
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	74	81	39	96	89	33	0
(SE)	0.94	0.39	1.09	1.56	1.09	1.00	NA

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Luxembourg (continued)

PISA 2006

National programme	lower secondary education (preparatory regime of technical secondary edu.)	lower secondary education (technical)	lower secondary education (general)	a 4-year vocational - technical education	a 4 to 5-year technical education	upper secondary education	upper secondary private not subsidized
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 2 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 General	ISCED 3 General

School characteristics (based on students' responses)

Average time spent in regular lessons in science at school (in number of hours per week)	1.57	2.19	1.40	1.65	3.71	3.02	4.30
(SE)	0.09	0.04	0.04	0.11	0.14	0.05	0.15
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.65	3.85	4.05	2.73	3.40	4.19	4.66
(SE)	0.14	0.04	0.05	0.09	0.08	0.04	0.12
Average time spent in regular lessons in reading at school (in number of hours per week)	3.05	3.39	4.12	1.96	2.99	3.98	4.01
(SE)	0.11	0.04	0.06	0.13	0.06	0.05	0.11
Index of science teaching with the focus on application	0.05	-0.03	-0.51	-0.35	-0.23	-0.10	-0.11
(SE)	0.07	0.02	0.04	0.08	0.06	0.03	0.07
Index of interactive science teaching	0.24	0.08	-0.24	-0.12	-0.34	-0.24	-0.32
(SE)	0.06	0.03	0.04	0.09	0.06	0.03	0.08

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Luxembourg**PISA 2003**

National programme	year 7 or 8 or 9	year 7 or 8 or 9	year 10-12, in a program leading to an apprenticeship	10-12 in a program leading to higher education	year 10-12 in a program leading to university
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 3 Vocational	ISCED 3 General	ISCED 3 General

School characteristics (based on students' responses)

Distribution of 15-year-olds students by programme (%)	7	63	3	7	18
(SE)	0.16	0.23	0.13	0.12	0.14
Percentage of students who repeated a grade once and more	70	52	NGR	NGR	0
(SE)	2.85	0.62	NGR	NGR	0.21
Percentage of students who consider that school does little to prepare them to adult life	46	50	56	59	55
(SE)	3.38	0.99	4.51	2.68	1.63
Percentage of students who consider that school is a waste of time	87	89	88	96	94
(SE)	2.11	0.66	2.58	0.90	0.97
Percentage of students who consider that what they learn in school could be useful in a job	88	86	91	93	90
(SE)	2.16	0.70	2.71	1.38	1.24
Percentage of students who chose school because of specific studying programme	11	15	36	18	14
(SE)	1.81	0.72	4.03	2.13	1.08

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Mexico

PISA 2006

National programme	General Lower Secondary	Technical Lower Secondary	General Lower Secondary by television	General Baccalaureate or Upper Secondary	General Baccalaureate or Upper Secondary	Technical Baccalaureate or Technical from Upper Secondary	Professional Technician
ISCED orientation	ISCED 2 General	ISCED 2 Pre-Vocational	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational

PISA Performance Outcome

Distribution of 15-year-olds students by programme (%)	20	10	13	5	28	17	4
(SE)	2.20	1.57	2.19	0.58	1.95	0.86	0.60
Mean performance on science scale	392	382	341	468	434	435	434
(SE)	7.17	5.75	7.43	7.99	3.89	2.98	7.65
Mean performance on mathematics scale	389	373	323	470	434	432	435
(SE)	6.78	5.49	9.23	9.54	4.20	3.12	12.34
Mean performance on reading scale	391	379	323	469	442	442	429
(SE)	7.91	7.09	10.27	7.94	3.99	3.23	8.89

Student Characteristics (based on students' responses)

ESCS (Economic Social and Cultural Status) index	-0.84	-1.21	-2.26	-0.07	-0.72	-0.83	-1.11
(SE)	0.14	0.10	0.08	0.13	0.07	0.04	0.05
Percentage of native students	97	96	92	99	99	99	99
(SE)	0.78	0.99	1.76	0.18	0.10	0.10	0.30
Percentage of second generation students	1	1	1	0	0	0	1
(SE)	0.28	0.47	0.60	0.04	0.08	0.07	0.28
Percentage of first generation students	3	3	7	0	0	0	0
(SE)	0.73	0.65	1.56	0.17	0.06	0.07	0.08

School characteristics (based on principals' responses)

Total student/teacher ratio	26.99	27.52	23.07	26.71	28.30	28.21	19.29
(SE)	2.18	2.16	1.30	2.10	0.94	0.93	1.50
Proportion of fully certified teachers (%)	77	51	94	28	31	27	41
(SE)	0.08	0.12	0.04	0.08	0.05	0.04	0.20
Proportion of teachers with ISCED 5A (%)	92	76	48	100	86	89	69
(SE)	0.03	0.04	0.00	0.09	0.02	0.02	0.09
Index of school educational resources	-0.78	-1.15	-1.52	-0.13	-0.71	-0.98	-0.36
(SE)	0.20	0.09	0.11	0.22	0.08	0.08	0.27
Index of teacher shortage	0.65	1.09	1.07	0.56	0.45	0.61	0.44
(SE)	0.12	0.17	0.13	0.12	0.08	0.07	0.17
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	11	19	1	45	39	77	87

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Mexico (continued)

PISA 2006

National programme	General Lower Secondary	Technical Lower Secondary	General Lower Secondary by television	General Baccalaureate or Upper Secondary	General Baccalaureate or Upper Secondary	Technical Baccalaureate or Technical from Upper Secondary	Professional Technician
ISCED orientation	ISCED 2 General	ISCED 2 Pre-Vocational	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational

School characteristics (based on principals' responses)

(SE)	4.34	6.85	1.36	12.65	4.29	3.42	6.01
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	0	8	2	0	1	9	23
(SE)	NA	5.32	1.76	NA	0.46	2.81	8.51
Percentage of students in schools where the principal reported that career guidance was not available	13	21	10	2	2	7	13
(SE)	4.74	7.20	5.02	1.51	0.55	2.25	8.72
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	70	54	83	95	90	62	45
(SE)	12.44	12.87	10.04	2.13	2.10	3.23	12.38

School characteristics (based on students' responses)

Average time spent in regular lessons in science at school (in number of hours per week)	3.20	3.01	3.25	3.14	3.34	3.03	2.23
(SE)	0.10	0.09	0.18	0.09	0.06	0.05	0.12
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.78	3.62	3.43	4.46	4.22	4.17	3.65
(SE)	0.10	0.09	0.17	0.07	0.05	0.05	0.20
Average time spent in regular lessons in reading at school (in number of hours per week)	3.84	3.73	3.29	4.12	3.80	3.88	3.18
(SE)	0.10	0.08	0.19	0.07	0.05	0.04	0.17
Index of science teaching with the focus on application	0.40	0.39	0.56	0.44	0.39	0.33	0.17
(SE)	0.06	0.04	0.06	0.04	0.02	0.02	0.07
Index of interactive science teaching	0.37	0.34	0.51	0.36	0.38	0.37	0.33
(SE)	0.04	0.04	0.04	0.07	0.02	0.02	0.06

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Mexico

PISA 2003

National programme	general lower sec.	technical lower sec.	general lower sec. by television	general baccalaureate or upper sec. (semester prog.)	technical baccalaureate or upper sec. (semester prog.)	professional technician (semester prog.)
ISCED orientation	ISCED 2 General	ISCED 2 Pre-vocational	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational

School characteristics (based on students' responses)

Distribution of 15-year-olds students by programme (%)	27	15	12	22	15	4
(SE)	3.60	2.59	2.50	1.59	1.54	0.90
Percentage of students who repeated a grade once and more	46	49	62	4	3	9
(SE)	3.71	3.05	3.59	0.37	0.49	2.93
Percentage of students who consider that school does little to prepare them to adult life	52	48	41	64	62	51
(SE)	2.87	3.12	4.15	1.01	1.02	6.40
Percentage of students who consider that school is a waste of time	95	94	85	97	98	97
(SE)	1.04	0.90	2.03	0.50	0.29	1.25
Percentage of students who consider that what they learn in school could be useful in a job	94	94	90	95	96	96
(SE)	0.69	0.68	2.41	0.37	0.26	2.34
Percentage of students who chose school because of specific studying programme	18	17	23	26	51	51
(SE)	1.61	2.03	2.75	1.15	1.78	7.12

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Netherlands

PISA 2006

National programme	voorbereidend middelbaar beroepsonderwijs: preparatory middle- level vocational education			hoger algemeen voortgezet onderwijs: higher general continued education		voorbereidend wetenschappelijk onderwijs: preparatory scientific education	
	VMBO BB (3-4 year)	VMBO KB (3-4 year)	VMBO GL/ TL (3-4 year)	HAVO (year 1-3)	HAVO (SEC. year 4- 5)	VWO (year 1-3)	VWO (year 4- 6)
ISCED orientation	ISCED 2 Pre- Vocational	ISCED 2 Pre- Vocational	ISCED 2 General	ISCED 2 General	ISCED 3 General	ISCED 2 General	ISCED 3 General

PISA Performance Outcome

Distribution of 15-year-olds students by programme (%)	13	15	24	9	12	7	15
(SE)	1.15	0.80	1.13	0.65	0.83	0.45	0.65
Mean performance on science scale	414	467	520	559	588	604	636
(SE)	4.15	3.33	3.35	3.36	2.61	2.90	2.69
Mean performance on mathematics scale	430	476	524	559	587	597	644
(SE)	4.18	3.57	2.70	3.50	3.37	3.39	3.10
Mean performance on reading scale	406	457	507	542	567	584	610
(SE)	5.27	4.20	3.25	4.27	3.26	3.74	3.36

Student Characteristics (based on students' responses)

ESCS (Economic Social and Cultural Status) index	-0.27	-0.05	0.17	0.51	0.50	0.66	0.84
(SE)	0.06	0.04	0.04	0.04	0.04	0.07	0.04
Percentage of native students	83	88	89	90	96	92	93
(SE)	3.78	1.78	2.35	1.77	1.03	1.43	1.35
Percentage of second generation students	13	9	9	5	3	4	5
(SE)	2.92	1.41	1.89	1.30	0.89	1.04	1.22
Percentage of first generation students	5	3	2	6	1	4	2
(SE)	1.22	0.79	0.67	1.10	0.40	0.91	0.50

School characteristics (based on principals' responses)

Total student/teacher ratio	13.22	13.49	16.31	17.68	17.93	18.01	18.23
(SE)	0.43	0.48	0.34	0.68	0.77	0.37	0.50
Proportion of fully certified teachers (%)	88	90	89	89	86	89	89
(SE)	0.03	0.02	0.02	0.03	0.03	0.03	0.02
Proportion of teachers with ISCED 5A (%)	86	90	86	85	84	86	87
(SE)	0.04	0.02	0.03	0.03	0.04	0.04	0.03
Index of school educational resources	0.23	0.21	0.30	0.26	0.34	0.34	0.28
(SE)	0.13	0.13	0.12	0.10	0.10	0.12	0.12
Index of teacher shortage	0.29	0.30	0.01	0.10	0.17	-0.03	0.00
(SE)	0.11	0.11	0.09	0.11	0.10	0.13	0.11

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Netherlands (continued)

PISA 2006

National programme	voorbereidend middelbaar beroepsonderwijs: preparatory middle- level vocational education			hoger algemeen voortgezet onderwijs: higher general continued education		voorbereidend wetenschappelijk onderwijs: preparatory scientific education	
	VMBO BB (3-4 year)	VMBO KB (3-4 year)	VMBO GL/ TL (3-4 year)	HAVO (year 1-3)	HAVO (SEC. year 4- 5)	VVO (year 1-3)	VVO (year 4- 6)
ISCED orientation	ISCED 2 Pre- Vocational	ISCED 2 Pre- Vocational	ISCED 2 General	ISCED 2 General	ISCED 3 General	ISCED 2 General	ISCED 3 General

School characteristics (based on principals' responses)

Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	80	74	64	34	33	28	28
(SE)	5.27	5.65	5.89	5.84	5.80	6.11	5.18
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	70	61	51	6	9	7	9
(SE)	6.43	6.73	7.16	2.25	3.34	3.38	2.98
Percentage of students in schools where the principal reported that career guidance was not available	0	0	2	6	3	3	4
(SE)	NA	NA	1.82	3.24	2.03	2.00	2.33
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	86	91	81	93	91	87	90
(SE)	6.09	3.48	5.34	3.02	3.47	4.38	3.60

School characteristics (based on students' responses)

Average time spent in regular lessons in science at school (in number of hours per week)	1.17	1.30	2.02	2.97	2.34	3.17	3.19
(SE)	0.09	0.08	0.06	0.10	0.10	0.13	0.11
Average time spent in regular lessons in mathematics at school (in number of hours per week)	2.28	2.59	2.97	3.23	2.98	3.04	3.19
(SE)	0.08	0.09	0.08	0.06	0.05	0.11	0.06
Average time spent in regular lessons in reading at school (in number of hours per week)	2.67	2.98	3.23	2.99	2.96	2.66	2.66
(SE)	0.07	0.06	0.06	0.06	0.06	0.07	0.05
Index of science teaching with the focus on application	-0.42	-0.62	-0.30	-0.15	-0.21	-0.02	-0.11
(SE)	0.06	0.05	0.03	0.05	0.04	0.04	0.03
Index of interactive science teaching	0.03	-0.18	-0.24	-0.40	-0.37	-0.33	-0.42
(SE)	0.05	0.04	0.03	0.05	0.05	0.04	0.04

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Netherlands

PISA 2003

	Practical preparation for labour market	voorbereidend middelbaar beroepsonderwijs: preparatory middle-level vocational education	hoger algemeen voortgezet onderwijs: higher general continued education	voorbereidend wetenschappelijk onderwijs: preparatory scientific education				
National programme	Pro	Vmbo bb	Vmbo kb	Vmbo tl	Havo 2/3	Havo 4/5	Vwo 2/3	Vwo 4/5
ISCED orientation	Vocational	ISCED 2 Pre-Vocational	ISCED 2 Pre-Vocational	ISCED 2 General	ISCED 2 General	ISCED 3 General	ISCED 2 General	ISCED 3 General

School characteristics (based on students' responses)

Distribution of 15-year-olds students by programme (%)	3	15	13	25	8	11	6	14
(SE)	1.36	1.28	1.21	2.44	0.79	0.91	0.49	0.95
Percentage of students who repeated a grade once and more	41	47	35	30	58	1	33	2
(SE)	24.34	2.66	2.69	1.88	3.32	0.54	3.67	0.86
Percentage of students who consider that school does little to prepare them to adult life	49	67	79	75	81	80	83	81
(SE)	9.72	2.22	1.77	1.73	2.21	2.29	2.60	2.25
Percentage of students who consider that school is a waste of time	70	82	85	90	92	94	95	95
(SE)	13.78	1.95	1.40	1.33	1.34	1.36	1.44	1.03
Percentage of students who consider that what they learn in school could be useful in a job	93	91	95	90	91	94	94	94
(SE)	8.47	1.51	1.12	1.12	1.60	0.76	1.30	0.95
Percentage of students who chose school because of specific studying programme	30	31	32	14	13	11	19	16
(SE)	11.60	2.62	2.40	1.30	2.60	1.40	3.22	2.35

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Portugal

PISA 2006

National programme	Lower Secondary	Upper Secondary	Vocational Secondary (Technical)
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
PISA Performance Outcome			
Distribution of 15-year-olds students by programme (%)	48	38	12
(SE)	1.45	1.31	0.87
Mean performance on science scale	424	535	505
(SE)	3.63	2.17	4.53
Mean performance on mathematics scale	414	527	504
(SE)	4.00	2.50	4.01
Mean performance on reading scale	416	541	504
(SE)	4.35	2.57	3.92
Student Characteristics (based on students' responses)			
ESCS (Economic Social and Cultural Status) index	-1.02	-0.07	-0.60
(SE)	0.05	0.06	0.06
Percentage of native students	91	97	96
(SE)	1.47	0.44	0.72
Percentage of second generation students	3	2	2
(SE)	0.78	0.35	0.61
Percentage of first generation students	6	2	2
(SE)	1.08	0.25	0.54
School characteristics (based on principals' responses)			
Total student/teacher ratio	8.59	9.17	9.35
(SE)	0.24	0.22	0.30
Proportion of fully certified teachers (%)	92	90	88
(SE)	0.01	0.02	0.02
Proportion of teachers with ISCED 5A (%)	67	64	68
(SE)	0.04	0.04	0.05
Index of school educational resources	-0.41	-0.38	-0.25
(SE)	0.08	0.07	0.13
Index of teacher shortage	-0.84	-0.86	-0.75
(SE)	0.05	0.04	0.07
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	37	47	53
(SE)	4.45	4.57	5.20
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	2	0	0
(SE)	1.35	0.21	NA
Percentage of students in schools where the principal reported that career guidance was not available	5	8	5
(SE)	2.26	3.51	2.55
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	26	14	20
(SE)	4.41	3.78	4.46

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Portugal (continued)**PISA 2006**

National programme	Lower Secondary	Upper Secondary	Vocational Secondary (Technical)
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>			
Average time spent in regular lessons in science at school (in number of hours per week)	2.47	4.20	3.24
(SE)	0.04	0.07	0.14
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.07	4.34	3.54
(SE)	0.05	0.05	0.14
Average time spent in regular lessons in reading at school (in number of hours per week)	3.02	3.59	3.31
(SE)	0.04	0.04	0.06
Index of science teaching with the focus on application	0.26	0.44	0.34
(SE)	0.03	0.03	0.05
Index of interactive science teaching	0.42	0.34	0.31
(SE)	0.02	0.03	0.05

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Portugal**PISA 2003**

National programme	lower sec.	upper sec.	vocational sec. (technological)
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
<i>School characteristics (based on students' responses)</i>			
Distribution of 15-year-olds students by programme (%)	35	56	9
(SE)	2.38	2.23	0.93
Percentage of students who repeated a grade once and more	79	1	1
(SE)	1.16	0.17	0.49
Percentage of students who consider that school does little to prepare them to adult life	67	79	71
(SE)	1.10	1.00	2.90
Percentage of students who consider that school is a waste of time	91	98	96
(SE)	0.88	0.26	1.39
Percentage of students who consider that what they learn in school could be useful in a job	93	94	94
(SE)	0.73	0.56	1.29
Percentage of students who chose school because of specific studying programme	12	44	68
(SE)	1.32	2.24	3.42

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Slovakia

PISA 2006

National programme	Basic School	General 8-Year Secondary School (years 5-8)	High School (gymnasium)	Secondary College	Technical College, Class with a School Leaving Exam	Technical College, Class without a School Leaving Exam
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Pre-Vocational	ISCED 3 Vocational	ISCED 3 Vocational

PISA Performance Outcome

Distribution of 15-year-olds students by programme (%)	37	6	13	25	8	9
(SE)	2.06	0.79	0.94	2.27	1.63	1.45
Mean performance on science scale	464	592	564	502	473	416
(SE)	5.13	7.90	5.25	4.51	12.01	8.55
Mean performance on mathematics scale	467	603	565	508	472	423
(SE)	5.72	9.29	5.62	4.07	9.74	9.10
Mean performance on reading scale	434	580	558	494	441	372
(SE)	6.11	7.34	5.80	4.64	11.58	10.86

Student Characteristics (based on students' responses)

ESCS (Economic Social and Cultural Status) index	-0.25	0.65	0.47	-0.17	-0.31	-0.58
(SE)	0.05	0.10	0.06	0.03	0.07	0.04
Percentage of native students	99	100	100	100	100	99
(SE)	0.18	0.23	0.14	0.14	0.37	0.52
Percentage of second generation students	0	0	0	0	0	1
(SE)	0.15	0.23	0.14	0.10	0.00	0.52
Percentage of first generation students	0	0	0	0	0	0
(SE)	0.09	0.00	0.00	0.10	0.37	0.00

School characteristics (based on principals' responses)

Total student/teacher ratio	16.59	14.93	14.30	12.36	16.60	16.58
(SE)	0.35	0.27	0.48	0.36	0.95	0.89
Proportion of fully certified teachers (%)	90	94	94	54	48	51
(SE)	0.02	0.02	0.01	0.03	0.06	0.05
Proportion of teachers with ISCED 5A (%)	4	5	6	42	52	54
(SE)	0.01	0.02	0.01	0.03	0.05	0.05
Index of school educational resources	-0.50	-0.66	-0.59	-0.54	-0.59	-0.62
(SE)	0.08	0.12	0.10	0.11	0.20	0.15
Index of teacher shortage	0.25	-0.50	-0.45	-0.22	0.01	-0.02
(SE)	0.10	0.16	0.24	0.09	0.11	0.11
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	45	9	10	52	55	48
(SE)	5.57	7.04	5.59	9.45	13.24	10.75
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	4	1	2	26	32	44
(SE)	2.13	0.44	1.23	7.15	11.58	10.06
Percentage of students in schools where the principal reported that career guidance was not available	2	21	12	12	15	18
(SE)	1.28	10.94	6.25	5.59	8.19	6.96
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	35	39	50	38	22	36
(SE)	6.42	15.78	14.34	8.31	11.14	12.69

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Slovakia (continued)

PISA 2006

National programme	Basic School	General 8-Year Secondary School (years 5-8)	High School (gymnasium)	Secondary College	Technical College, Class with a School Leaving Exam	Technical College, Class without a School Leaving Exam
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Pre-Vocational	ISCED 3 Vocational	ISCED 3 Vocational

School characteristics (based on students' responses)

Average time spent in regular lessons in science at school (in number of hours per week)	2.38	5.06	4.15	2.10	1.22	0.91
(SE)	0.10	0.16	0.20	0.14	0.13	0.08
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.20	3.23	3.26	2.49	2.88	2.31
(SE)	0.07	0.22	0.10	0.09	0.23	0.10
Average time spent in regular lessons in reading at school (in number of hours per week)	4.07	2.77	2.87	2.54	2.33	2.25
(SE)	0.07	0.08	0.06	0.09	0.11	0.11
Index of science teaching with the focus on application	0.08	0.03	0.02	-0.36	-0.63	-0.45
(SE)	0.03	0.08	0.06	0.05	0.09	0.07
Index of interactive science teaching	0.04	-0.31	-0.34	-0.17	-0.21	-0.01
(SE)	0.03	0.11	0.07	0.04	0.06	0.06

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Slovakia

PISA 2003

National programme	basic school (lower sec.)	sec. school (upper sec.)	high school (gymnasium)	sec. college	technical college
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Pre-vocational	ISCED 3 Vocational

School characteristics (based on students' responses)

Distribution of 15-year-olds students by programme (%)	35	7	12	24	20
(SE)	1.60	0.87	1.49	2.89	2.19
Percentage of students who repeated a grade once and more	5	0	0	0	0
(SE)	0.70	0.11	0.14	0.05	0.17
Percentage of students who consider that school does little to prepare them to adult life	73	66	74	73	72
(SE)	1.37	2.87	1.60	1.34	1.93
Percentage of students who consider that school is a waste of time	94	94	98	96	92
(SE)	0.60	1.26	0.50	0.53	0.81
Percentage of students who consider that what they learn in school could be useful in a job	93	90	95	96	96
(SE)	0.61	1.90	0.65	0.46	0.56
Percentage of students who chose school because of specific studying programme	8	51	36	51	32
(SE)	1.10	3.80	3.50	2.55	1.77

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Switzerland

PISA 2006

National programme	Secondary Education, First Stage	Preparatory course for Vocational Education	School Preparing for the University Entrance Certificate	Vocational Education Dual System 3-4 Years
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
PISA Performance Outcome				
Distribution of 15-year-olds students by programme (%)	79	3	10	6
(SE)	1.66	1.18	0.70	1.36
Mean performance on science scale	499	492	607	527
(SE)	2.94	11.01	5.45	9.31
Mean performance on mathematics scale	518	504	618	551
(SE)	2.99	8.82	5.27	10.47
Mean performance on reading scale	488	484	592	490
(SE)	2.90	12.59	4.52	10.28
Student Characteristics (based on students responses)				
ESCS (Economic Social and Cultural Status) index	0.01	-0.05	0.76	0.00
(SE)	0.02	0.06	0.06	0.06
Percentage of native students	77	78	76	82
(SE)	0.84	3.51	1.78	3.71
Percentage of second generation students	12	11	13	9
(SE)	0.48	3.54	1.93	2.14
Percentage of first generation students	11	12	11	9
(SE)	0.53	2.34	1.63	1.84
School characteristics (based on principals' responses)				
Total student/teacher ratio	11.73	12.07	10.35	19.79
(SE)	0.13	1.22	0.23	2.29
Proportion of fully certified teachers (%)	82	64	94	63
(SE)	0.02	0.12	0.02	0.13
Proportion of teachers with ISCED 5A (%)	58	50	90	46
(SE)	0.02	0.09	0.08	0.15
Index of school educational resources	0.57	1.15	1.08	1.00
(SE)	0.07	0.34	0.20	0.26
Index of teacher shortage	-0.05	0.05	-0.31	0.09
(SE)	0.04	0.17	0.12	0.36
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	65	92	26	42
(SE)	3.32	5.93	5.12	22.31
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	15	55	2	94
(SE)	2.25	21.27	1.11	3.31
Percentage of students in schools where the principal reported that career guidance was not available	4	2	20	92
(SE)	1.13	1.96	10.79	4.03
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	81	99	6	95
(SE)	2.79	0.66	2.68	6.00

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Switzerland (continued)

PISA 2006

National programme	Secondary Education, First Stage	Preparatory course for Vocational Education	School Preparing for the University Entrance Certificate	Vocational Education Dual System 3-4 Years
ISCED orientation	ISCED 2 General	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
School characteristics (based on students' responses)				
Average time spent in regular lessons in science at school (in number of hours per week)	2.20	1.38	4.45	1.59
(SE)	0.04	0.11	0.17	0.13
Average time spent in regular lessons in mathematics at school (in number of hours per week)	4.04	3.35	3.79	2.10
(SE)	0.03	0.45	0.08	0.16
Average time spent in regular lessons in reading at school (in number of hours per week)	3.75	3.59	3.89	2.03
(SE)	0.03	0.38	0.07	0.17
Index of science teaching with the focus on application	0.13	0.10	0.27	0.06
(SE)	0.02	0.12	0.04	0.06
Index of interactive science teaching	0.02	0.12	-0.05	0.09
(SE)	0.02	0.09	0.05	0.10

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Switzerland

PISA 2003

National programme	sec. education, 1st stage	school prep. for the university entrance certificate	vocational education, dual system 3-4 years
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 Vocational
School characteristics (based on students' responses)			
Distribution of 15-year-olds students by programme (%)	80	7	7
(SE)	2.50	0.67	2.79
Percentage of students who repeated a grade once and more	26	1	13
(SE)	1.15	0.49	6.70
Percentage of students who consider that school does little to prepare them to adult life	62	70	64
(SE)	0.84	1.67	5.71
Percentage of students who consider that school is a waste of time	91	96	90
(SE)	0.63	0.97	1.64
Percentage of students who consider that what they learn in school could be useful in a job	88	93	86
(SE)	0.45	1.97	1.19
Percentage of students who chose school because of specific studying programme	9	29	23
(SE)	0.80	5.01	5.05

Notes: In italics: not statistically significant values.

NA: not applies.

NGR stands for no grade repetition.

Turkey

PISA 2006

National programme	primary education	general high school	anatolian high school	vocational high schools	anatolian vocational high schools	secondary and vocational high school
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 Vocational
PISA Performance Outcome						
Distribution of 15-year-olds students by programme (%)	5	40	13	29	4	7
(SE)	1.16	2.82	2.59	2.24	1.61	1.79
Mean performance on science scale	350	429	521	392	433	378
(SE)	15.09	4.81	15.54	3.78	41.46	6.54
Mean performance on mathematics scale	348	429	528	387	435	382
(SE)	16.96	5.63	14.79	3.59	51.16	9.19
Mean performance on reading scale	328	461	536	419	457	396
(SE)	16.91	4.90	10.97	5.47	39.73	10.68
Student Characteristics (based on students' responses)						
ESCS (Economic Social and Cultural Status) index	-0.25	0.65	0.47	-0.17	-0.31	-0.58
(SE)	0.06	0.07	0.15	0.04	0.15	0.08
Percentage of native students	99	99	95	98	99	100
(SE)	0.62	0.19	2.65	0.53	0.80	0.29
Percentage of second generation students	1	1	2	1	1	0
(SE)	0.42	0.18	1.50	0.30	0.80	0.29
Percentage of first generation students	0	0	2	1	NA	NA
(SE)	0.20	0.11	1.22	0.34	NA	NA
School characteristics (based on principals' responses)						
Total student/teacher ratio	29.76	22.35	15.81	15.17	11.09	13.02
(SE)	2.53	1.15	1.78	0.88	0.49	1.41
Proportion of fully certified teachers (%)	NA	NA	NA	NA	NA	NA
(SE)	NA	NA	NA	NA	NA	NA
Proportion of teachers with ISCED 5A (%)	NA	NA	NA	NA	NA	NA
(SE)	NA	NA	NA	NA	NA	NA
Index of school educational resources	-1.74	-0.81	-0.90	-0.76	-0.71	-0.72
(SE)	0.16	0.15	0.29	0.12	0.40	0.29
Index of teacher shortage	1.89	1.51	1.46	1.18	0.81	1.87
(SE)	0.35	0.16	0.10	0.20	0.46	0.20
Percentage of students in schools where the principal reported students had the opportunity to participate more than once a year in job fairs, lectures (at school) by business or industry representatives and visits to local businesses and industries as part of their normal schooling	8	12	14	28	38	10
(SE)	5.81	4.42	8.88	6.83	19.24	11.02
Percentage of students in schools where the principal reported that more than half of students from the school received some training in local business as part of school activities during school year	15	2	0	7	21	0
(SE)	9.51	1.90	NA	3.33	14.43	NA
Percentage of students in schools where the principal reported that career guidance was not available	6	4	6	2	0	0
(SE)	5.75	2.84	6.11	2.25	NA	NA
Percentage of students in schools providing career guidance where the principal reported career guidance was formally scheduled into student's time at school	54	72	84	81	67	67
(SE)	25.54	5.96	10.57	7.28	21.49	15.63

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Turkey (continued)

PISA 2006

National programme	primary education	general high school	anatolian high school	vocational high schools	anatolian vocational high schools	secondary and vocational high school
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)						
Average time spent in regular lessons in science at school (in number of hours per week)	2.83	2.94	4.88	1.90	3.27	2.06
(SE)	0.32	0.10	0.37	0.08	0.66	0.24
Average time spent in regular lessons in mathematics at school (in number of hours per week)	3.47	4.14	4.77	3.11	3.68	3.28
(SE)	0.22	0.07	0.14	0.11	0.35	0.33
Average time spent in regular lessons in reading at school (in number of hours per week)	4.20	4.48	4.51	3.15	3.49	3.79
(SE)	0.23	0.05	0.10	0.08	0.29	0.31
Index of science teaching with the focus on application	0.26	0.07	0.12	0.07	0.16	-0.03
(SE)	0.04	0.03	0.08	0.05	0.12	0.13
Index of interactive science teaching	0.61	0.46	0.45	0.41	0.52	0.42
(SE)	0.09	0.03	0.07	0.03	0.10	0.04

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

Turkey

PISA 2003

National programme	primary education (lower sec.)	general high school (upper sec.)	anatolian high school (upper sec.)	high school with foreign language (upper sec.)	vocational high schools	anatolian vocational high schools
ISCED orientation	ISCED 2 General	ISCED 3 General	ISCED 3 General	ISCED 3 General	ISCED 3 Vocational	ISCED 3 Vocational
School characteristics (based on students' responses)						
Distribution of 15-year-olds students by programme (%)	5	51	6	11	16	7
(SE)	1.84	3.98	2.36	1.69	2.65	1.86
Percentage of students who repeated a grade once and more	62	20	1	1	22	6
(SE)	7.80	1.17	0.41	0.63	2.85	2.28
Percentage of students who consider that school does little to prepare them to adult life	56	53	54	62	60	63
(SE)	6.01	1.15	2.52	3.24	3.51	2.65
Percentage of students who consider that school is a waste of time	67	94	91	96	91	96
(SE)	7.98	0.58	2.40	1.10	1.04	1.61
Percentage of students who consider that what they learn in school could be useful in a job	90	86	78	81	92	89
(SE)	4.52	1.04	4.16	2.12	1.61	3.72
Percentage of students who chose school because of specific studying programme	27	12	26	33	23	29
(SE)	5.87	1.10	3.67	5.45	4.13	3.10

Notes: In italics: not statistically significant values.

NA: not applies.

NGR: no grade repetition.

ANNEX B. GLOSSARY

ESCS Index - The index of economic, social and cultural status was derived from the following indices: highest occupational status of parents, highest educational level of parents (in years of education according to ISCED), family wealth, cultural possessions and home educational resources. The index was standardised to have the OECD mean at 0 and the standard deviation in the OECD population at 1.

First-generation students - Students born outside of the country of assessment whose parents are also foreign-born.

Index of interactive science teaching - The index is based on students' perception of the use of interactive methods in science teaching aiming to give students opportunities to explain their ideas, involve students' opinions about the topics, animate debates or discussions in a class, involve students' opinions about the topics. Higher scores indicate that students are more exposed to interactive science teaching. The index was standardised to have the OECD mean at 0 and the standard deviation in the OECD population at 1.

Index of school educational resources - The index of the school educational resources measures the school principal's perceptions of shortage or inadequacy of educational resources at school (measured by shortage or inadequacy of science laboratory equipment, instruction materials, computers for instruction, internet connectivity, computer software for instruction, library materials and audio visual resources) as potential factors hindering instruction at school. Higher scores indicate better quality of educational resources. The index was standardised to have the OECD mean at 0 and the standard deviation in the OECD population at 1.

Index of science teaching with the focus on application - The index is based on students' perception of applicability and relevance of science knowledge to the 'real world', as measured by the use of relevant teaching methods (the teacher explains how an idea can be applied to a number of different phenomena; the teacher uses science to help students understand the world outside school; the teacher clearly explains the relevance of concepts to student' reality; the teacher uses examples of technological application to show how science is relevant to society). Higher scores indicate that students are more exposed to science teaching with the focus on application. The index was standardised to have the OECD mean at 0 and the standard deviation in the OECD population at 1.

Index of teacher shortage - The index of teacher shortage measures the school principal's perceptions of a lack of qualified teachers at school as potential factors diminishing school performance. Higher scores indicate higher teacher shortage at a school. The index was standardised to have the OECD mean at 0 and the standard deviation in the OECD population at 1.

Native students - Students born in the country assessment with at least one parent born in the same country.

Proportion of fully certified teachers - The proportion of fully certified teachers was calculated by dividing the number of fully certified teachers by the total number of teachers.

Proportion of teachers who have an ISCED 5A qualification - The proportion of teachers who have an ISCED 5A qualification was calculated by dividing the number of teachers with ISCED 5A diploma by the total number of teachers.

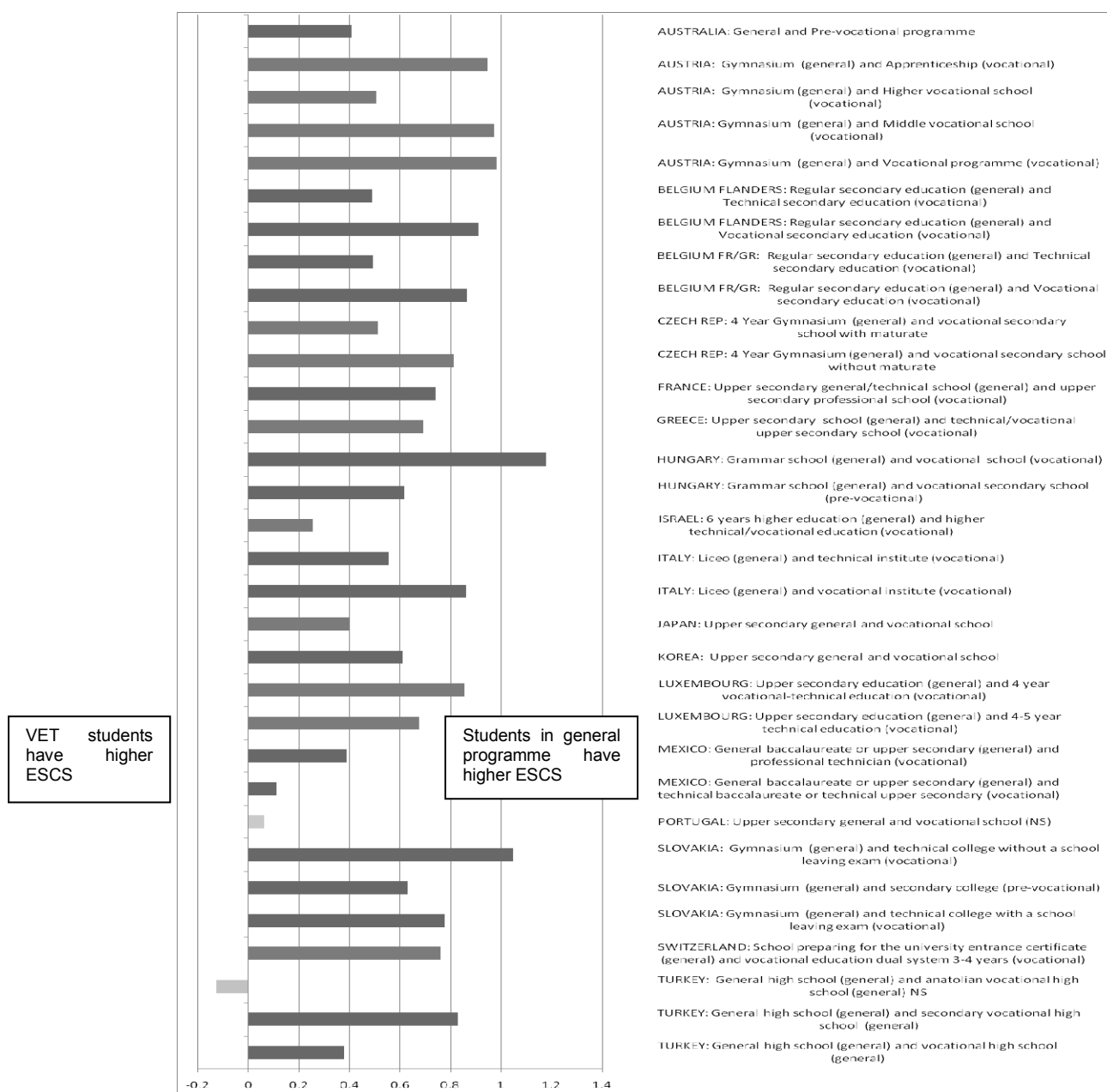
Second-generation students - Students born in the country of assessment with foreign born parents.

Total student-teacher ratio - The total student-teacher ratio was obtained by dividing the school size (measured by number of students) by the total number of teachers. The number of part-time teachers contributes 0.5 and the number of full-time teachers 1.0 to the total number of teachers.

ANNEX C. FIGURES

Figure 1. Difference in ESCS among students in general and vocational programmes at upper-secondary level (ISCED 3) (2006).

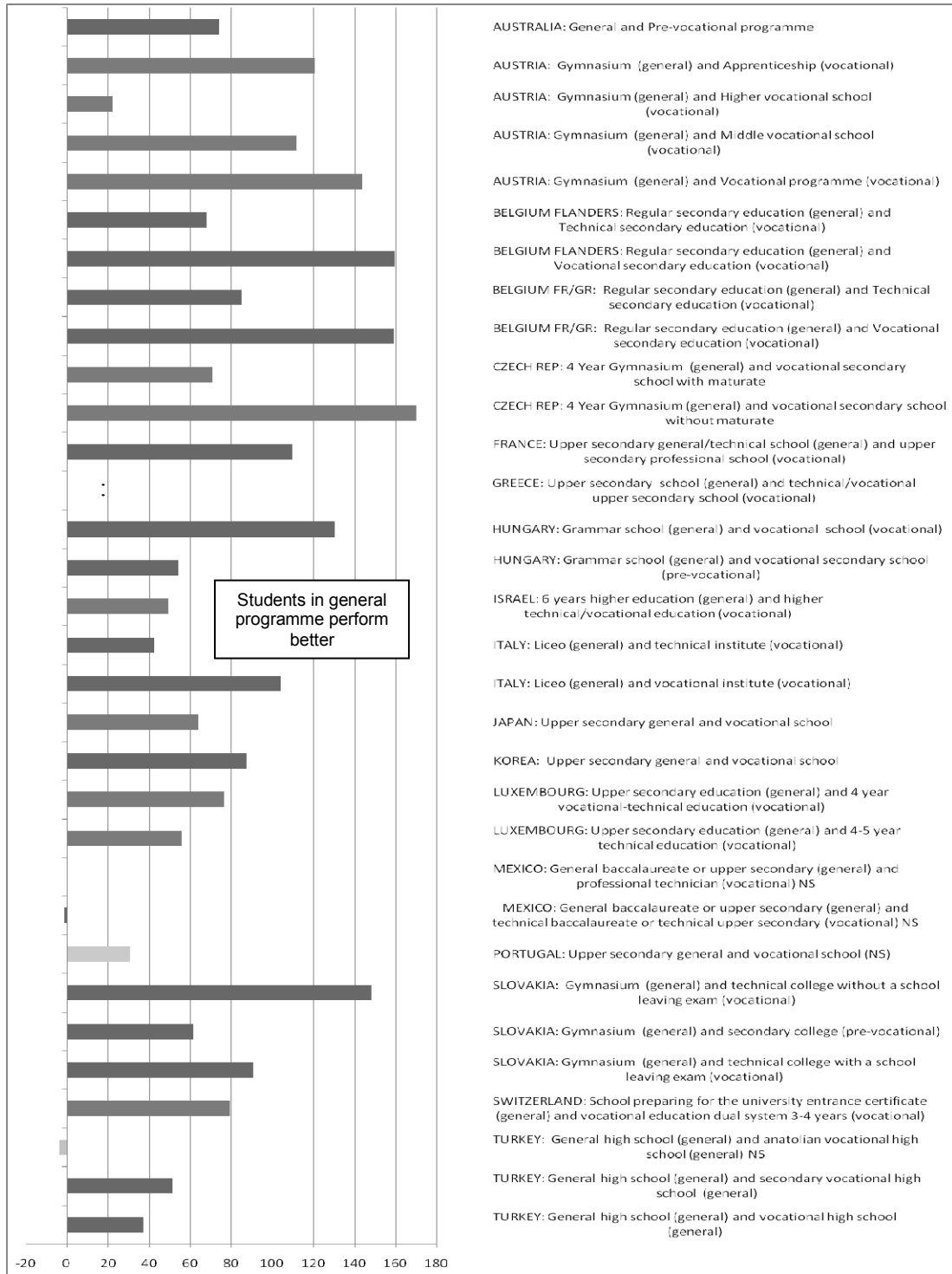
If more than one ISCED 3 general programme is available in the country, the general programme with the highest percentage of students has been selected as the comparison programme



Note: Results in lighter colours are not statistically significant. Difference in ESCS index between programmes has been multiplied by 100.

Figure 2. Difference in performance on science PISA scale among students in general and vocational programmes at upper-secondary level (ISCED 3) (2006).

If more than one ISCED 3 general programme is available in the country, the general programme with the highest percentage of students has been selected as the comparison programme.



Note: Results in lighter colours are not statistically significant.