SURVEY OF SCHOOLS: ICT IN EDUCATION

COUNTRY PROFILE: TURKEY

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# 1.	INTRODUCTION

ICT IN THE SCHOOL EDUCATION SYSTEM OF TURKEY

In the Republic of Turkey[1] the ministry of National Education conducts educational activities on a central level and is responsible for preparing curriculum, maintaining coordination between educational institutions, construction of school buildings etc. Educational activities in the provinces are organised by the Provincial Directors of Education appointed by the Minister. The duration of compulsory education in a single primary school is eight years for the children between ages of 6 and 14 and primary education is free of charge in public institutions. Education is compulsory until the age of 18. The curriculum is determined at national level by Turkish Board of Education who determined which textbooks must be used, although teachers are free to choose the way they teach. In general, secondary education is provided at a variety of institutions including vocational and technical education institutions offering four years of education for those who have completed primary education.

According to Eurydice's **Key Data on Learning and Innovation through ICT at school in Europe**[2], in Turkey there are national strategies covering training measures and research projects[3] for ICT in schools, e-inclusion, and digital/media literacy. There are central steering documents for all ICT learning objectives[4] at secondary education level except for using mobile devices and using social media, and at primary level for using a computer, and searching for information. In primary and secondary schools ICT is taught as a general tool for other subjects/or as a tool for specific tasks in other subjects, and as a separate subject. At primary and secondary education level support is provided in all ICT hardware areas, except for mobile devise and e-reader books, and for all ICT software categories[5].support is provided, except for digital learning games and digital resources where recommendations or suggestions are provided. According to official steering documents, both students and teachers at both primary and secondary level are expected to use ICT for complementary activities in all subjects, except for the arts, and also in class for foreign languages. There are no central recommendations on the use of ICT in student assessment. Public-private partnerships for promoting the use of ICT are encouraged for private funding for hardware and software in schools, and ICT training for teachers.

THE SURVEY OF SCHOOLS: ICT IN EDUCATION

In 2011, the European Commission Directorate General Communications Networks, Content and Technology[6] launched the Survey of Schools: ICT in Education, the primary goal of which is to

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[1] https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php?title=Home

[2] http://eacea.ec.europa.eu/education/eurydice/documents/key data series/129EN.pdf, published in 2011, specifically the following tables and associated commentaries: A6, B6, B7, C2, C3, C4, C12 and E10

[3] from the following areas: ICT in schools, e-learning, e-inclusion, digital/media literacy, e-skills development.

[4] i.e. knowledge of computer hardware and electronics, using a computer, using mobile devices, using office applications, searching for information, using multimedia, developing programming skills, and using social media

[5] from a range of hardware and software, i.e. computers, projectors or beamers, DVDs, videos, TV, cameras, mobile devices, e-book readers, smartboards, virtual learning environments; tutorial software, office applications, multimedia applications, digital learning games, communication software, digital resources.

[6] www.ec.europa.eu/dgs/connect/

benchmark countries' performance in terms of access, use and attitudes to ICT at grades 4, 8 and 11. The Survey of Schools is one of a series within the European Union's cross-sector benchmarking activities comparing national progress to Digital Agenda for Europe (DAE) and EU2020 goals. The Survey is funded by the European Commission Communications Networks, Content and Technology Directorate General and is a partnership between European Schoolnet and the Service d'Approches Quantitatives des faits éducatifs in the Department of Education of the University of Liège. The survey took place between January 2011 and May 2012, with data collection in autumn 2011, and covered 31 countries (the EU27, Croatia, Iceland, Norway and Turkey). In four countries (Germany, Iceland, Netherlands and the United Kingdom) the response rate was insufficient, making reliable analysis of the data impossible; therefore the findings in this report are based on data from 27 countries.

This country profile should be read in conjunction with the Report of the Survey of Schools: ICT in Education (the 'main report'). The profile presents key indicators concerning access, use and attitudes to Information and Communication Technology in primary and secondary schools derived from responses to surveys completed by head teachers, teachers and students, showing national results against the EU average and, where possible, for grade 8 only. Charts for this grade are shown but not for other grades for reasons of brevity and clarity and because results at this grade tend to be indicative of all grades (i.e. having the characteristics and revealing issues found both at grade 4 and at grade 11). The text provides information about the results and rankings at other grades and a reference to the particular chart in the main report.

The full report, country profiles, background information, questionnaires, tables, details of the methodology and the raw data are freely available at https://ec.europa.eu/digital-agenda/en/pillar-6-enhancing-digital-literacy-skills-and-inclusion. The authors may be contacted at essie-eu@eun.org and information about the survey is at http://essie.eun.org.

2. ICT INFRASTRUCTURE

AVAILABILITY OF COMPUTERS FOR EDUCATIONAL PURPOSES

A computer is defined as a desktop or laptop, netbook or tablet computer, whether or not connected to the internet, available for educational purposes in school. In Turkey there are considerably fewer computers for all grade students than the EU average, and provision is consistent all levels (fig. 1.1 main report). In most countries the older the student the more the computers, as can be seen from the EU means, and this trend is also reflected in Turkey at grade 11 vocational. Fig. 2.1 shows that at grade 8 Turkey ranks lowest on this indicator with 23 students per computer.

Fig. 2.1: Students per computer
(Grade 8, country and EU level, 2011-12)
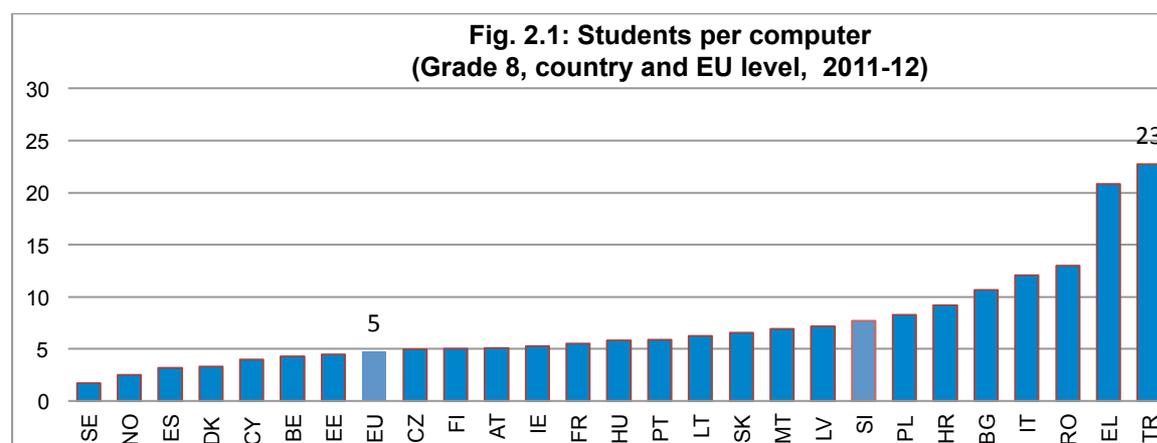
As for computers connected to the internet in schools, in Turkey there is a very low level of provision of desktop computers at all grades, ranking in the bottom few countries, with roughly a third of the EU average, and very few laptops. At grade 8 (fig. 2.2) there are fewer students per desktop computer than in any other country and on student to laptop ratio Turkey ranks last but one.

Fig. 2.2: Students per internet-connected desktop and laptop computer
(Grade 8, country and EU level, 2011-12)
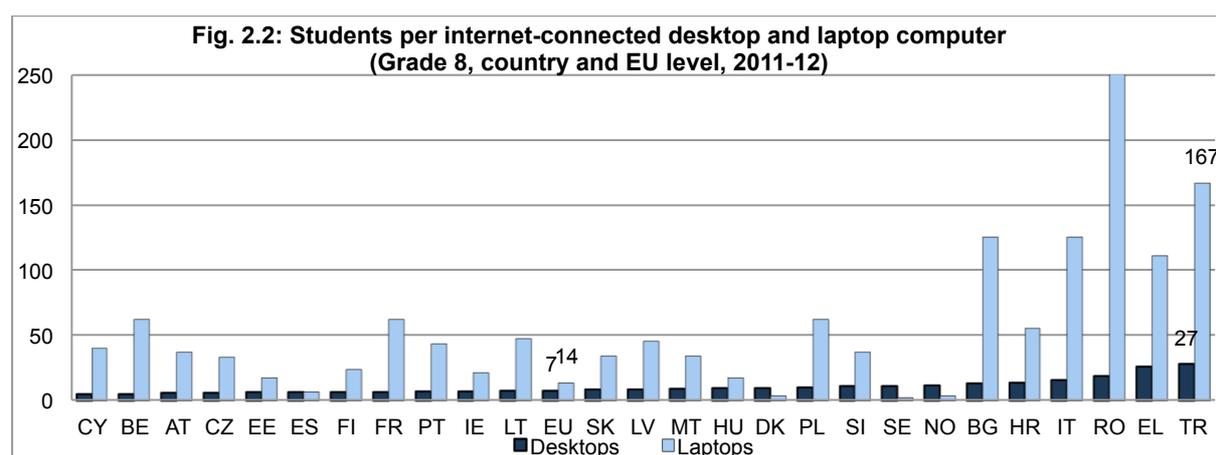
Computers are located overwhelmingly in dedicated labs at all grades (main report, fig. 1.3). Interactive whiteboards (IWBs) are rarely found except at grade 4 (main report, fig. 1.5) where there are relatively more, but the ratio of students to data projectors is rather lower ((around 100:1). There tend to be more data projectors than IWBs. In common with other countries, maintenance of ICT equipment is very much a task for school personnel, but there is some involvement of commercial companies and educational authorities (main report, fig. 1.12).

BROADBAND

In Turkey all students are in schools with broadband at grades 8 and 11 general. Generally though, higher percentages of students are in schools with lower than EU average broadband speeds, the majority at all grades except 11 vocational with under 5mbps.

Fig. 2.3: Broadband speed
(% students excluding 'don't know', Turkey and EU, 2011-12)

		No broadband	<2mbps	2-5 mbps	5-10 mbps	10-30 mbps	30-100 mbps	>100 mbps
Grade 4	Turkey	9%	41%	26%	17%	7%		
	EU	8%	17%	21%	22%	20%	9%	4%
Grade 8	Turkey		39%	24%	24%	5%		6%
	EU	5%	10%	19%	28%	25%	9%	5%
Grade 11gen	Turkey		30%	35%	23%	12%		
	EU	4%	6%	18%	23%	25%	13%	10%
Grade 11voc	Turkey	3%	23%	23%	37%	15%		
	EU	7%	6%	15%	21%	24%	16%	11%
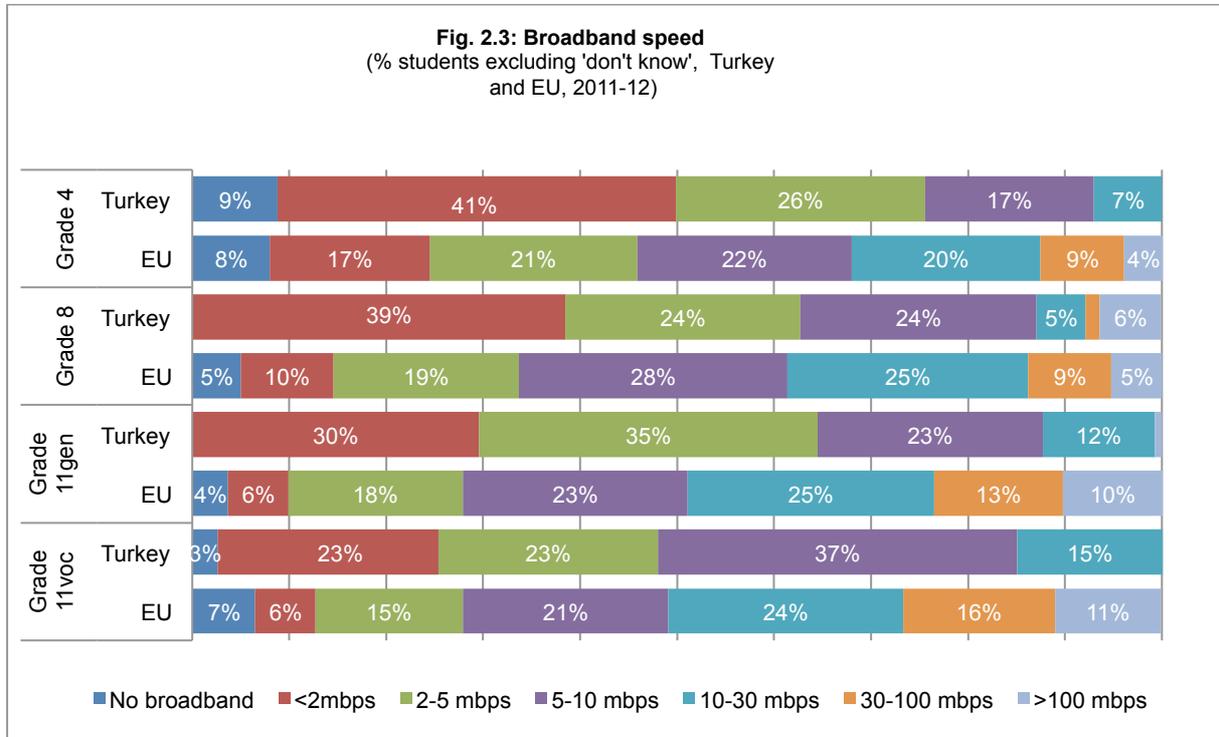
However more students in schools at grade 8 have access to over 100mbps broadband than the EU mean (fig. 2.4).

Fig. 2.4: Broadband speed
(Grade 8, country and EU level, 2011-12, ranked by >100mbps, 2011-12)

Legend: >100mbps, 30-100mbps, 10-30mbps, 5-10mbps, 2-5mbps, <2mbps, No broadband
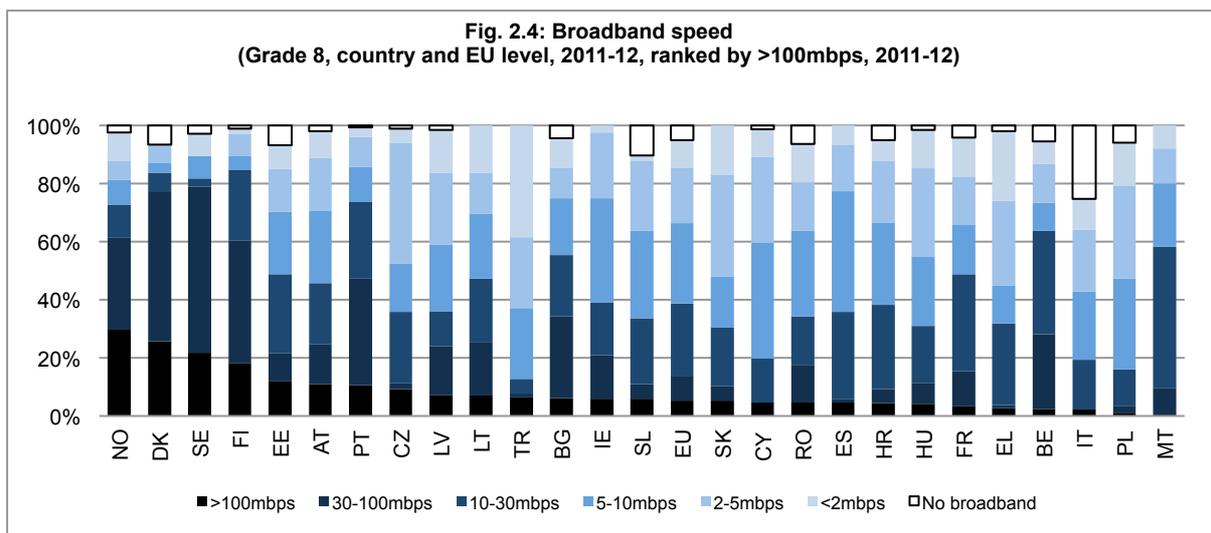
'CONNECTEDNESS'

Percentages of students in schools that have 'connected' characteristics, e.g. having a website or a virtual learning environment (VLE), are shown below, as well as those with none of these items. In Turkey, a lower percentage of students than the EU mean are in schools with a website, and

considerably fewer in schools with a virtual learning environment. 'Unconnected' schools are above the EU average, notably so for pupils in schools at Grade 8.

Fig. 2.5: Percentage of students in connected schools - website, virtual learning environment, no connectedness
(Turkey and EU, 2011-12)

		School website	VLE	No connectedness
Grade 4	Turkey	62%	28%	22%
	EU	79%	32%	15%
Grade 8	Turkey	54%	25%	42%
	EU	86%	58%	10%
Grade 11gen	Turkey	72%	20%	13%
	EU	92%	61%	7%
Grade 11voc	Turkey	70%	21%	15%
	EU	93%	63%	6%
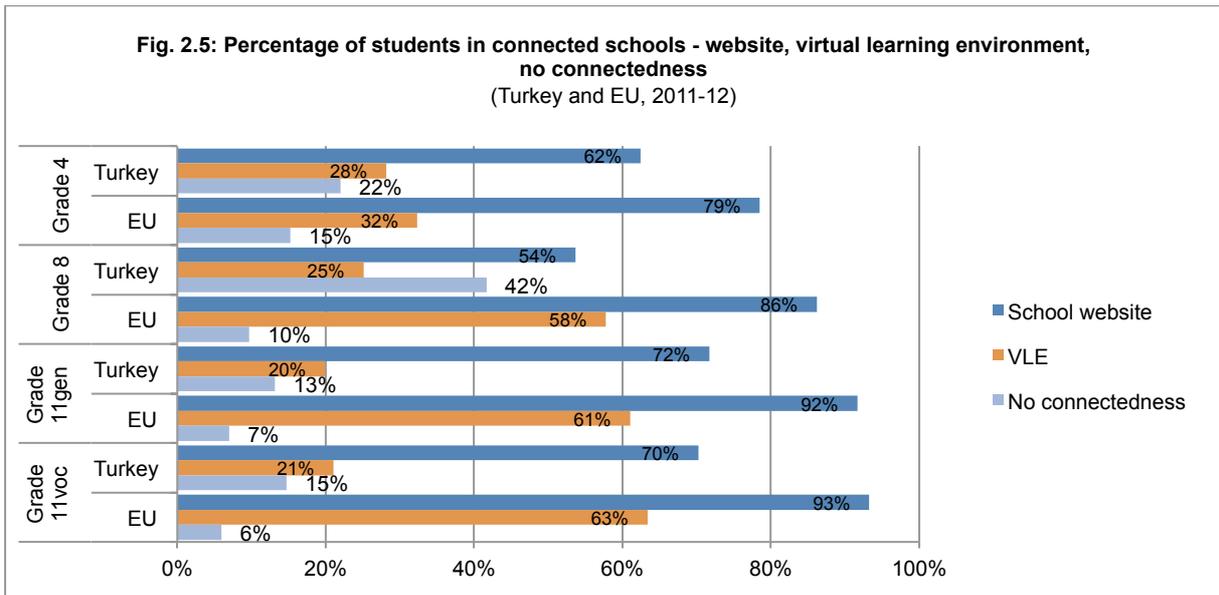
Turkey ranks well below other countries as regards virtual learning environments at grade 8, as seen in fig. 2.6, and at grade 11, but at grade 4 Turkey ranks in the middle range of countries in this respect.

Fig. 2.6: % of students in schools with a virtual learning environment
(Grade 8; country and EU level, 2011-12)

Countries (left to right): NO, PT, DK, FI, SE, ES, FR, BE, AT, SI, EU (61%), IE, EE, LV, SK, LT, RO, PL, EL, TR (25%), CY, CZ, BG, MT, HR, IT, HU
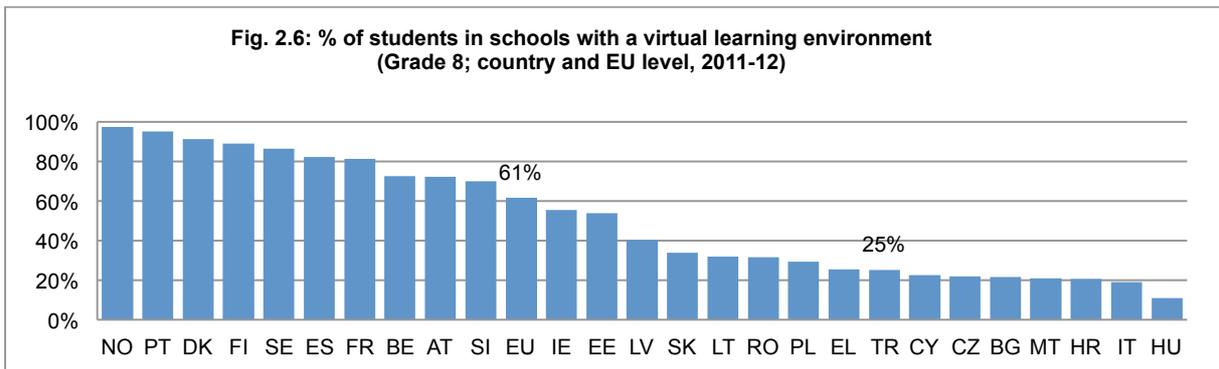
3. FREQUENCY OF ICT USE IN CLASS

FREQUENCY OF ICT USE BY TEACHERS IN CLASS

Teachers' frequency of use of ICT in lessons is shown in the charts below. In Turkey although there is a low level of ICT provision, use by teachers is close to the EU average. There are more teachers than the EU average using ICT in more than 25% of lessons, considerably so at grades 4 and 8. The most intense use of ICT is found at grade 11 vocational with high levels also at grade 8.

Fig. 3.1: Frequency of use of ICTequipment by teachers in lessons
(in % students, Turkey and EU, 2011-12)

		>75%	51-75%	25-50%	11-24%	6-10%	1-5%	<1%	Don't know
Grade 4	Turkey	10%	18%	26%	8%	15%	8%	8%	8%
	EU	3%	10%	14%	18%	19%	21%	9%	7%
Grade 8	Turkey	12%		27%	17%	21%	9%	7%	5%
	EU	7%	7%	15%	21%	19%	14%	11%	6%
Grade 11 gen	Turkey	3%	8%	23%	18%	13%	13%	17%	7%
	EU	7%	8%	15%	23%	17%	14%	10%	6%
Grade 11 voc	Turkey	28%	20%	13%	11%	11%	4%	11%	3%
	EU	19%	12%	17%	19%	13%	9%	7%	4%

Legend: >75% of lessons, 51-75% of lessons, 25-50% of lessons, 11-24% of lessons, 6-10% of lessons, 1-5% of lessons, <1% of lessons, Don't know

Fig. 3.2: Teachers' use of ICT in at least 25% of lessons
(% students, Turkey and EU, 2011-12)

	Turkey	EU mean
Grade 4	58%	29%
Grade 8	60%	32%
Grade 11gen	36%	32%
Grade 11voc	62%	50%

Teachers in Turkey at grade 8 are third highest users of ICT in lessons: when considering percentages using ICT in more than one in four lessons (fig. 3.3). Turkey ranks 4th at grade 4 and around the middle at other grades.

**Fig. 3.3: Teachers' use of ICT in more than 25% of lessons
(Grade 8, EU and country level, 2011-12)**
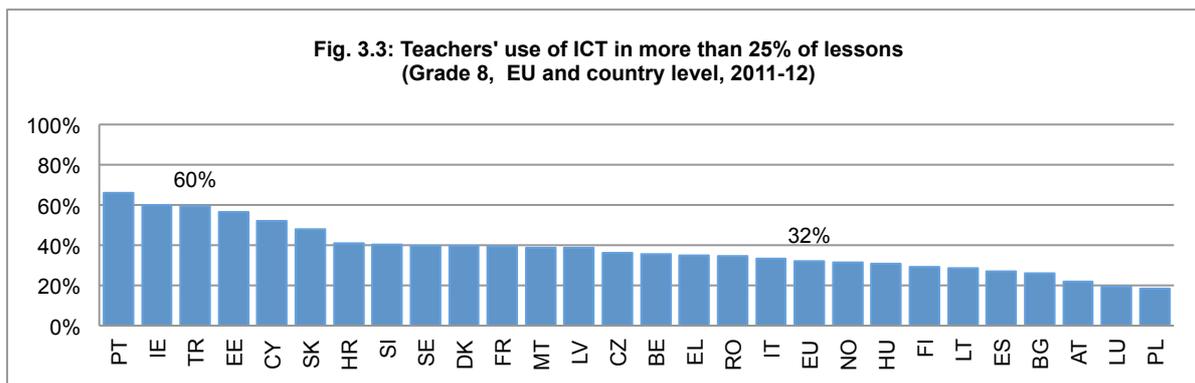
As regards teachers' use of ICT (Section 3 of the main report), few teachers in Turkey have been using ICT in lessons for more than six years (main report, fig 3.2). Turkey is among the lowest ranking countries in terms of student-centred learning (fig. 3.5).

STUDENTS' ICT USE

Students at grade 8 and 11 were also asked how frequently they used various items of ICT equipment in their lessons for learning purposes. The chart below shows their reported intensity of use of a school computer, and their own laptop or mobile phone. In Turkey student use of computers in class is close to the EU mean, although it is noticeably higher at grade 8. Use of their own laptop is close to EU means although slightly higher at grade 8. Mobile phone usage is below the EU mean, except at grade 11 general where it is slightly higher.

Fig. 3.4: Percentages of students using ICT equipment in class for learning, at least once a week
(Turkey and EU, 2011-12)
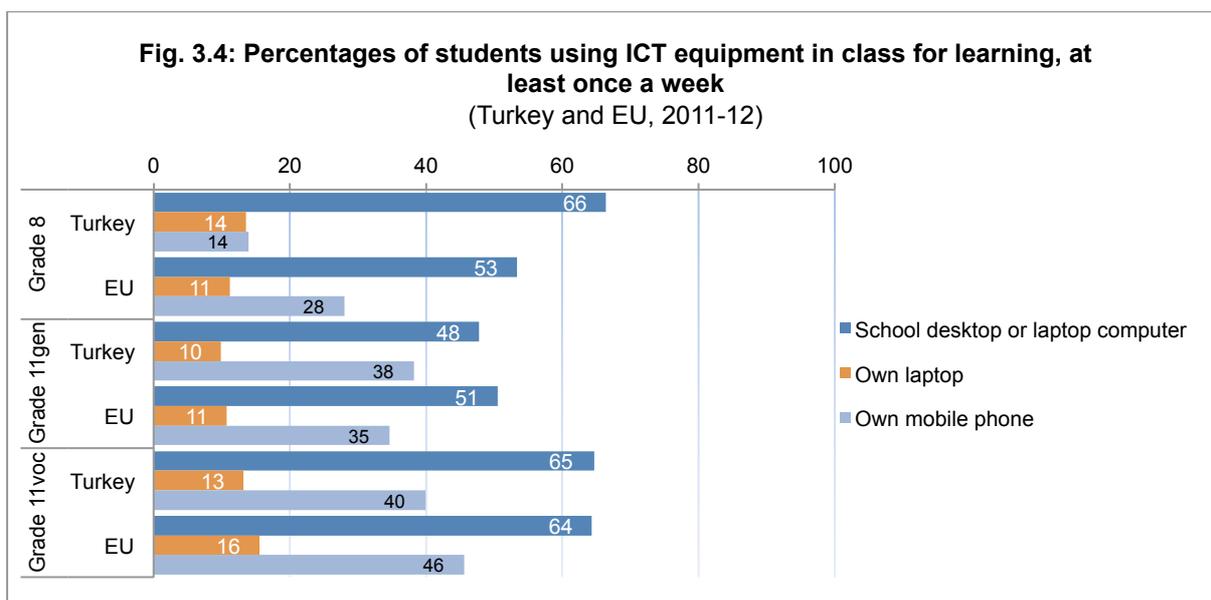
At grade 8 students' reported use of computers is seventh highest in Europe, over 66% saying they use them at least once a week (fig. 3.5) but at other grades Turkey is in the middle or lower range of countries.

Fig. 3.5 Use of school desktop/laptop for learning purposes at least weekly
(% students, Grade 8, country and EU level, 2011-12)

Chart showing percentage values by country (descending order): BG, MT, DK, SK, CY, HR, TR (66), LT, HU, PL, EL, CZ, NO, PT, SE, IE, EU (53), ES, EE, RO, BE, LU, IT, LV, FR, AT, SI, FI. Y-axis ranges from 0 to 100.
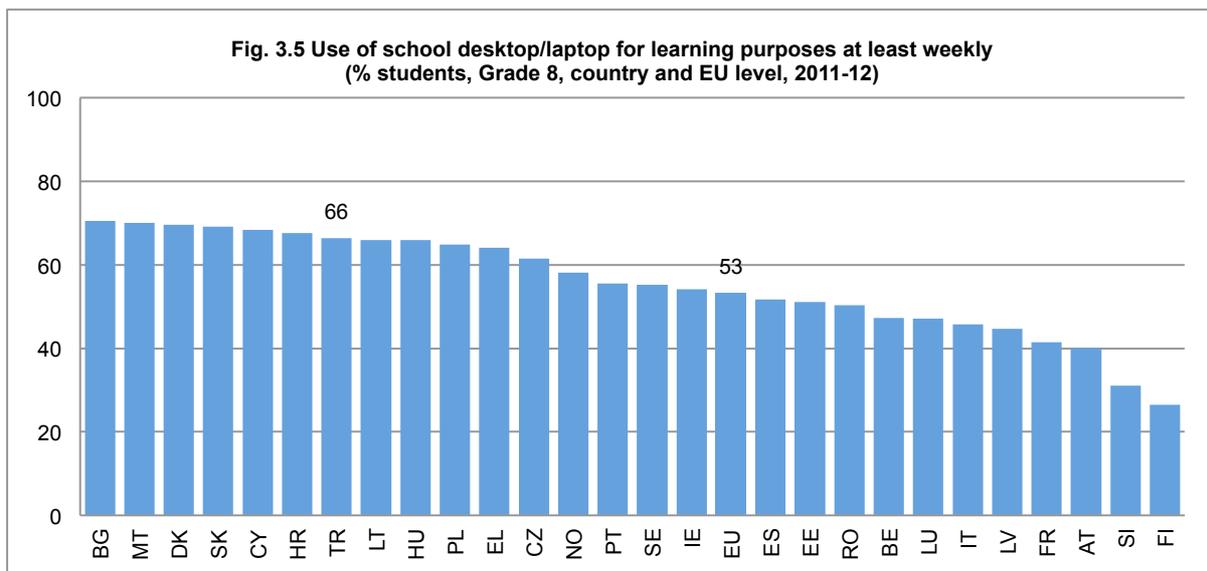
Compared to other countries at grade 8 (fig.3.6), students in Turkey are relatively low users of their own mobile phone and there is little use of their own laptop in school. At other grades too these figures are below those for most other countries.

Fig. 3.6 Use of own mobile phone or laptop for learning purposes at least weekly
(% students, Grade 8, country and EU level, 2011-12)

Chart showing two series (Own mobile phone, Own laptop) by country: LT, LV, DK, EE, PT, PL, CY, HR, SE, BE, SK, LU, BG, AT, NO, CZ, RO, HU, FI, EU (28, 11), EL, IE, SI, FR, IT, ES, TR (14, 14), MT. Y-axis ranges from 0 to 100.

Legend: ■ Own mobile phone □ Own laptop
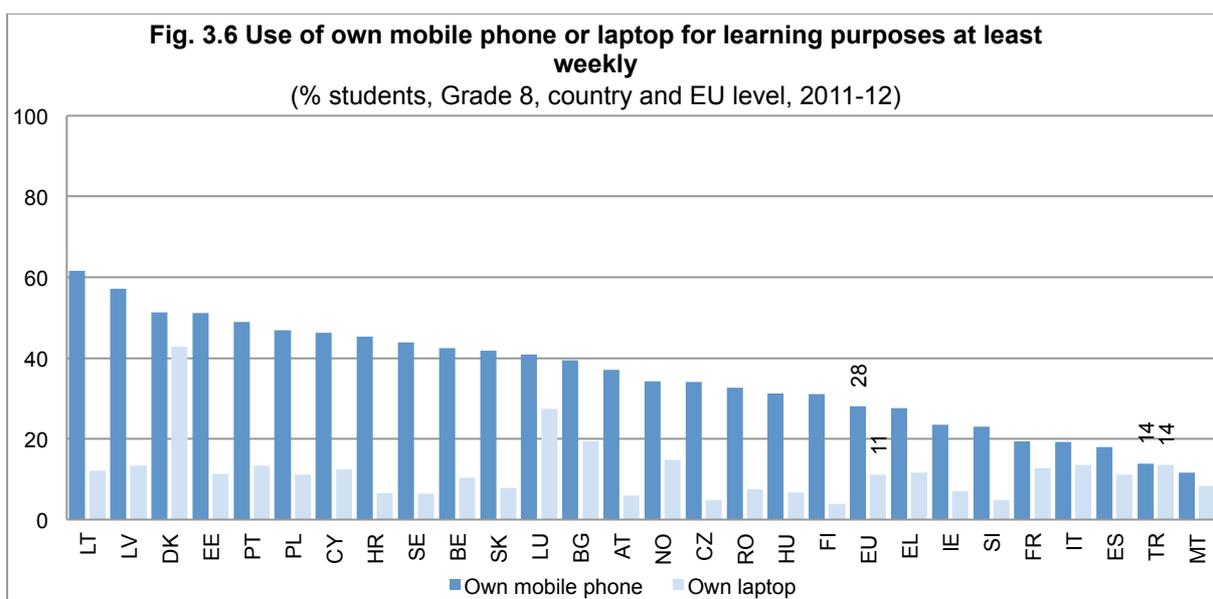
Students report using interactive whiteboards much less frequently than in other countries at all grades. Concerning students' ICT-based activities during lessons, Turkey ranks second at grade 8 and around the middle at grade 11 as measured by frequency of use (main report, fig. 3.8).

4. DIGITAL CONFIDENCE

TEACHERS

The mean score of students in Turkey being taught by teachers declaring confidence in their operational skills is around the EU mean at grade 4, lower at grade 11 general and higher at grade 8 and 11 vocational.

Fig. 4.1: Teachers' self-confidence in their operational and social media skills

(by grade; mean score of students with 1 being 'none' and 4 being 'a lot'; Turkey and EU; 2011-12)

Fig. 4.1a: grade 4

	Turkey	EU
Social media skills	2.4	2.41
Operational skills	2.73	2.98

Fig. 4.1b: grade 8

	Turkey	EU
Social media skills	2.69	2.37
Operational skills	2.93	3

Fig. 4.1c: grade 11 gen.

	Turkey	EU
Social media skills	2.26	2.38
Operational skills	2.64	3.01

Fig. 4.1d: grade 11 voc.

	Turkey	EU
Social media skills	2.83	2.51
Operational skills	3.15	3.16
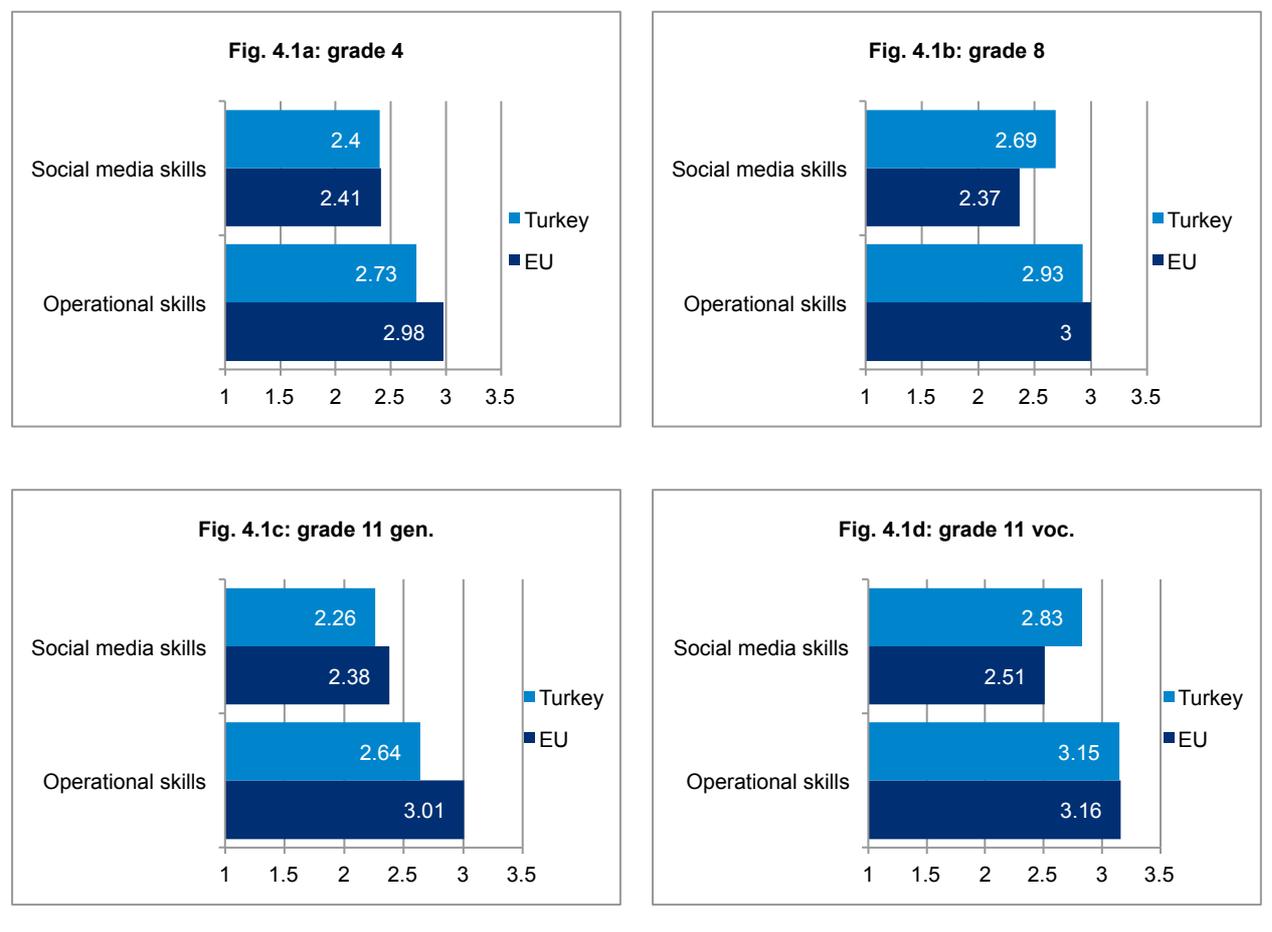
Comparing confidence levels at grade 8, teachers' confidence in their operational skills places Turkey in the lower group of countries (fig. 4.1e). At other grades Turkey is in the bottom group of countries at grades 8 and 11 general but around the middle at grade vocational.

**Fig. 4.1e Teachers' confidence in their operational skills
(Grade 8, country and EU level, 2011-12)**

3

2.93

1 'None' , 2 ' A little', 3 'Somewhat', 4 'a lot'

LU AT PT MT IE PL SI FR SE NO DK SK CZ IT EU RO CY ES BG EL TR EE LV FI HU LT BE HR
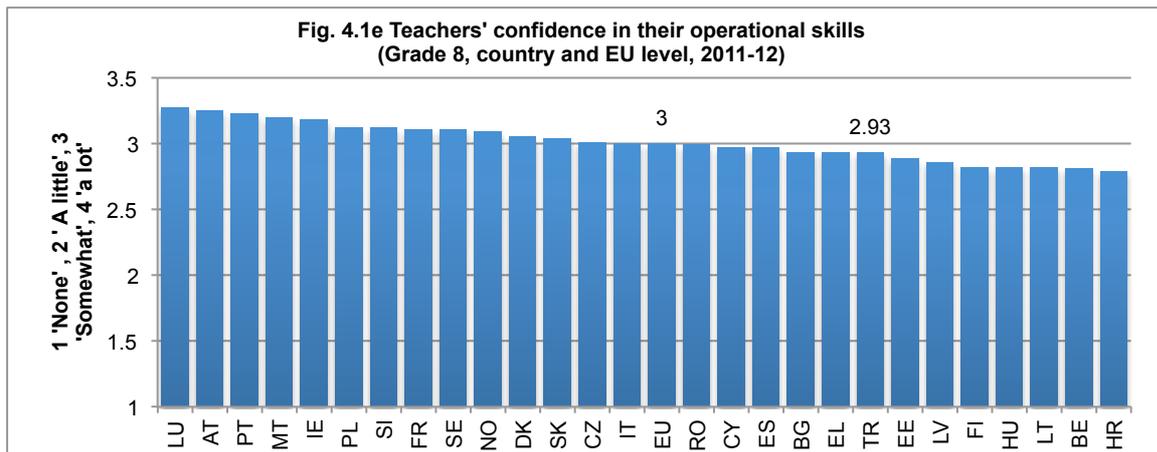
Turkey ranks second as regards social media confidence (fig. 4.1f), around the middle at grades 4 and 11 general but third at grade 11 vocational.

**Fig. 4.1f Teachers' confidence in their social media skills
(Grade 8, country and EU level, 2011-12)**

2.69

2.37

1 'None' , 2 ' A little', 3 'Somewhat', 4 'a lot'

EE TR SE FI IE NO SK DK MT LU PT SI PL ES FR RO EU IT BG HR LT AT EL CZ HU CY BE LV
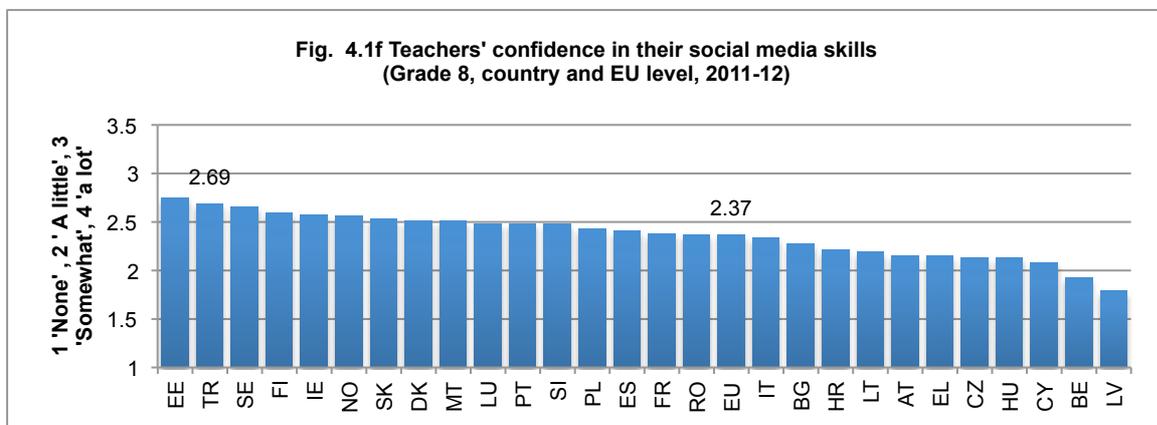
STUDENTS

The mean score of students in Turkey is below the EU mean, in all areas and noticeably lower in social media skills at Grade 11 general.

Fig. 4.2: Students' self-confidence in their ICT skills

(by grade; mean score of students with 1 being 'none' and 4 being 'a lot'; Turkey and EU; 2011-12)

Fig. 4.2a: grade 8

	Turkey	EU
Social media skills	2.24	2.41
Operational skills	2.4	2.63
Responsible internet use	2.54	2.58
Safe internet use	2.91	2.98

Fig. 4.2b: grade 11 gen.

	Turkey	EU
Social media skills	2.29	2.78
Operational skills	2.42	2.88
Responsible internet use	2.6	2.93
Safe internet use	2.92	3.16

Fig. 4.2c: grade 11 voc.

	Turkey	EU
Social media skills	2.28	2.55
Operational skills	2.55	2.78
Responsible internet use	2.57	2.75
Safe internet use	2.9	2.98
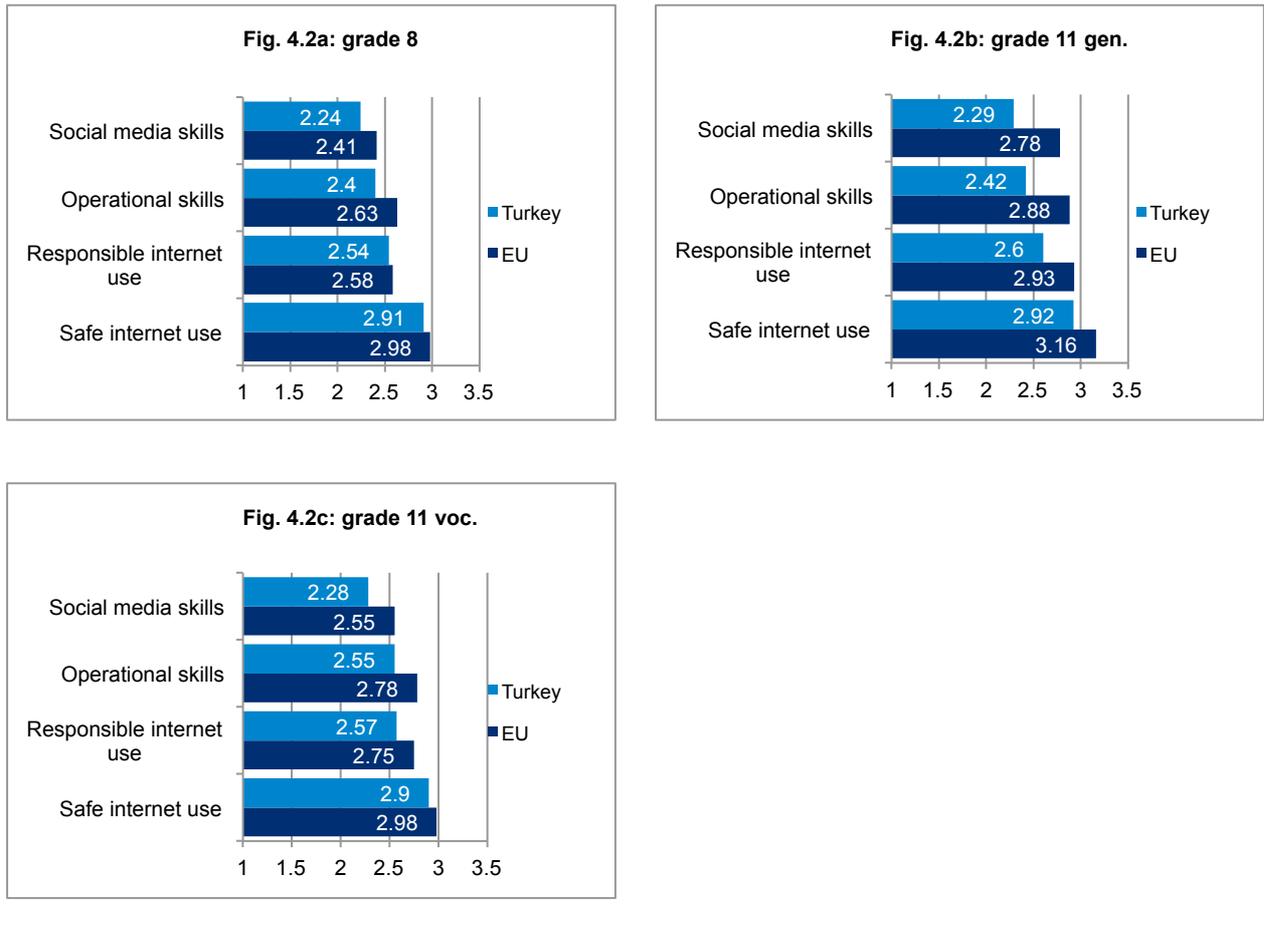
Confidence in operational skills ranks Turkey second from last amongst grade 8 students (fig. 4.2d), and is very low at grade 11.

Fig. 4.2d Students" confidence in their operational skills (Grade 8, country and EU level, 2011-12)
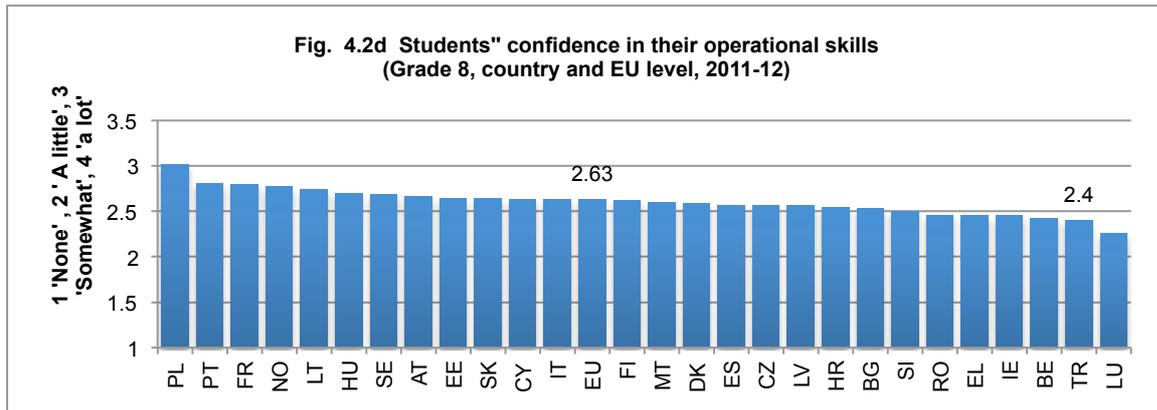
As regards social media competences at all grades Turkish students rate themselves among the lowest compared to other countries at all grades (fig. 4.2e for grade 8).

Fig. 4.2e Students" confidence in their social media skills (Grade 8, country and EU level, 2011-12)
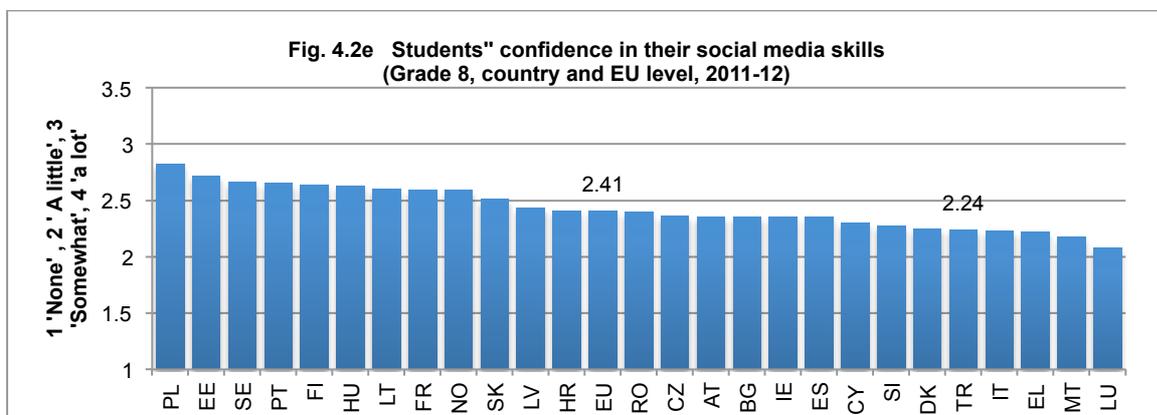
At all grades students in Turkey are, on average, well below the EU average in terms of confidence to use the internet safely and to use it responsibly (main report, figs. 4.16, 4.17).

5. PROFESSIONAL DEVELOPMENT

TIME SPENT ON TRAINING

Fewer students at grade 8 in Turkey are taught by teachers who have invested more than 6 days in professional development activities during the past two years, compared to the EU average. The same is the case for grade 11 students in general education, albeit to a lesser extent, while at grades 4 and 11 vocational level the situation in Turkey is closer to the EU average. When it comes to students being taught by teachers who have alternatively spent between 1 and 3 days on professional development during the last two years, Turkey scores slightly higher than the EU mean at grade 11 general, but noticeably lower at grade 8 and grade 11 vocational.

Fig. 5.1: Time invested by teachers in professional development activities during the past two years (in % of students; excluding '4-6 days' and '< 1 day'; Turkey and EU; 2011-12)

		No time	1-3 days	> 6 days
Grade 4	Turkey	17%	15%	43%
	EU	12%	19%	48%
Grade 8	Turkey	44%	5%	34%
	EU	5%	16%	61%
Grade 11gen	Turkey	34%	24%	25%
	EU	11%	23%	45%
Grade 11voc	Turkey	27%	10%	43%
	EU	10%	21%	49%
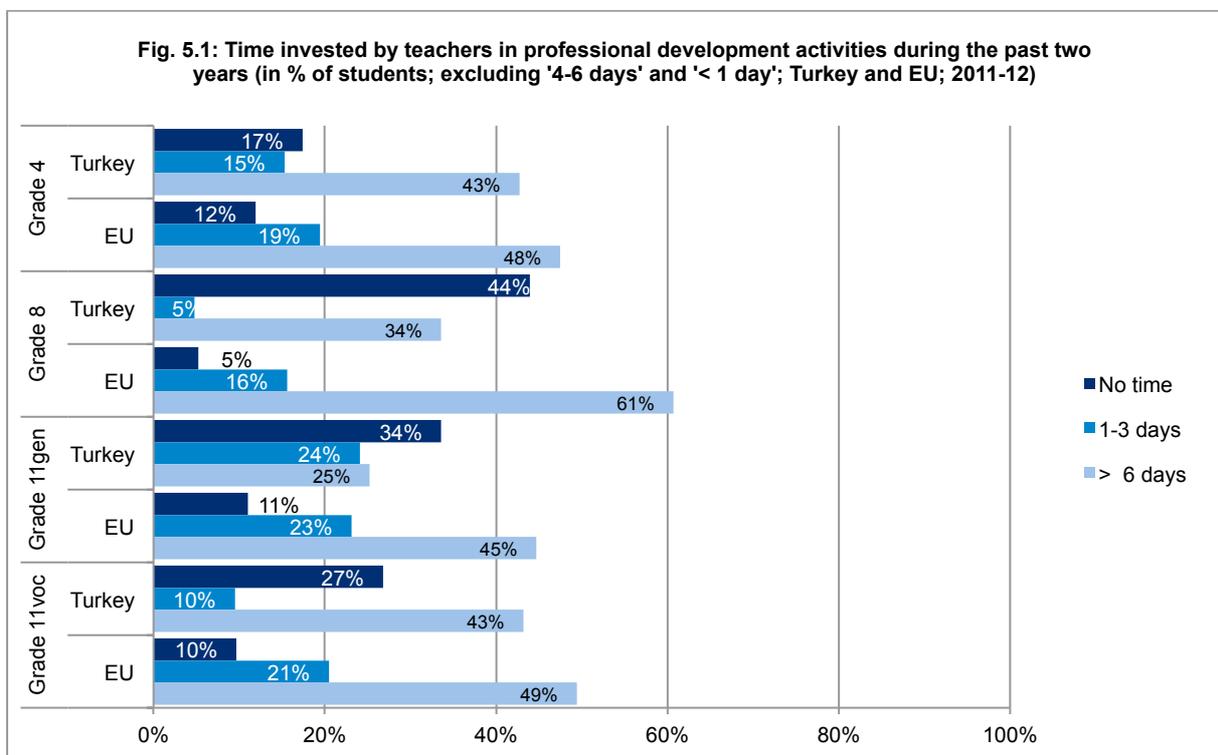
As Fig. 5.2 below shows, Turkey is positioned noticeably lower than the EU mean at all grades, especially so at grade 11 vocational, when considering the percentage of students taught by teachers who have recently undergone ICT training provided by school staff. This is also the case where they have received personalized training, but training via online communities is above the EU mean at all grades, except for at grade 11 general.

Fig. 5.2: Means through which teachers have engaged in ICT related professional development during the past two years

(by grade; in % of students; Turkey and EU; 2011-12)

Fig. 5.2a: grade 4

Participation in online communities	Turkey 29% / EU 25%
ICT training provided by school staff	Turkey 32% / EU 40%
Personal learning about ICT in your own time	Turkey 58% / EU 70%

Fig. 5.2b: grade 8

Participation in online communities	Turkey 33% / EU 31%
ICT training provided by school staff	Turkey 29% / EU 51%
Personal learning about ICT in your own time	Turkey 47% / EU 74%

Fig. 5.2c: grade 11 gen.

Participation in online communities	Turkey 24% / EU 28%
ICT training provided by school staff	Turkey 18% / EU 44%
Personal learning about ICT in your own time	Turkey 52% / EU 72%

Fig. 5.2d: grade 11 voc.

Participation in online communities	Turkey 35% / EU 28%
ICT training provided by school staff	Turkey 11% / EU 41%
Personal learning about ICT in your own time	Turkey 62% / EU 71%

Fig. 5.2e shows that grade 8 teachers in Turkey have taken part in professional development in the preceding two years, although at lower percentage than some countries.

**Fig. 5.2e: Participation in professional development
(Grade 8, by type, country and EU, 2011-12)**

Legend: ■ Pedagogical ■ Subject □ Online communities
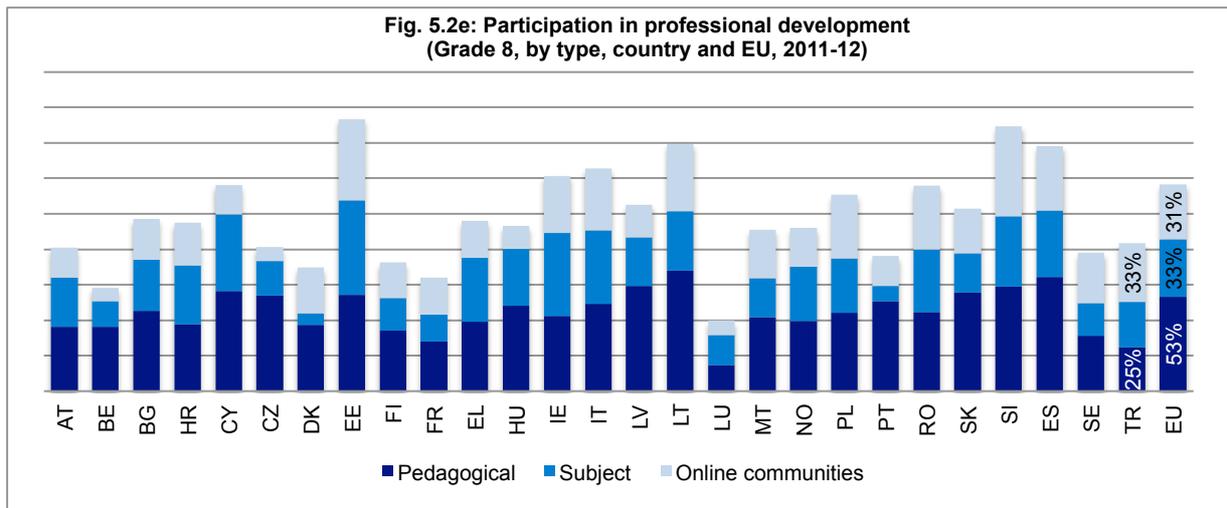
In Turkey at all grades percentages of students taught by teachers for whom ICT training is compulsory rank Turkey around tenth (main report, fig. 4.2). As regards involvement in personal learning about ICT in their own time (main report, fig. 4.4), percentages are well below those of most other countries. The percentage of students taught by teachers participating in training provided by school staff is the close to the lowest of all countries (main report, fig.4.5). Turkey ranks around the middle at grades 4 and 8 for percentages of students whose teachers report have spent more than six days on ICT training (main report, fig. 4.10) and in the bottom half at grade 11.

Turkey ranks high in terms of teachers having had *no* ICT training but at grade 4 the percentage is not so high as regards students taught by teachers who have not spent any time on ICT-related professional development activities during the preceding two years (main report, fig. 4.11).

6. SCHOOL SUPPORT MEASURES

In general students in Turkey are in schools where well above EU averages of ICT strategies are implemented (main report, fig. 5.3), except at grade 11 vocational where Turkey is in the middle group of countries. At all grades except grade 11 general, there are high percentages of students in schools with strategi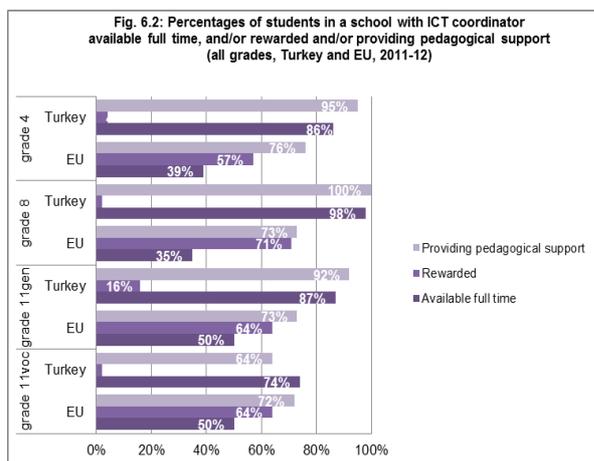es to support teacher collaboration (main report, fig. 5.7), ranking Turkey in the top four countries in this respect. Above average percentages of students in Turkey are in schools with change management programmes at grade 11 (main report, fig. 5.14) but they are low at grades 4 and 8.

ICT COORDINATOR

In Turkey, compared to the situation at EU level, students at grade 4 are in schools where ICT coordinators are provided at much the same level, but the gap widens through the grades and is less than half the EU level at grade 11 vocational. Students at all grades are in schools that employ considerably more full time ICT coordinators than the EU mean, and approaching 100% at grade 8.

Fig. 6.1: Percentages of students in a school with ICT coordinator (all grades, Turkey and EU, 2011-12)

Fig. 6.2: Percentages of students in a school with ICT coordinator available full time, and/or rewarded and/or providing pedagogical support (all grades, Turkey and EU, 2011-12)
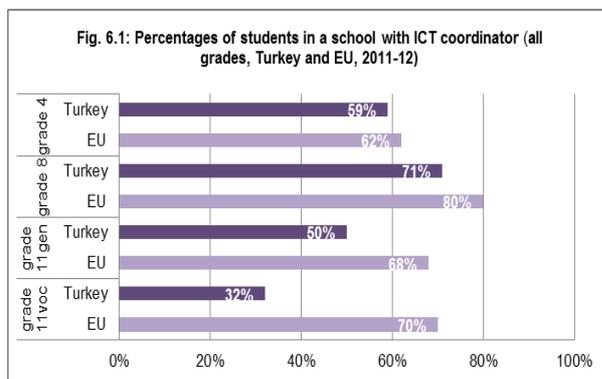
INCENTIVES

The majority of students are schools in Turkey where the ICT coordinator is provided with few incentives and the majority are considerable below the EU level. The exceptions are at grade 11 vocational, where there are above more competitions and at grades 4 and 11 general, where there are reductions in hours above the EU level.

Fig. 6.3: Percentages of students in schools with incentives to reward teachers using ICT in T&L (grade 11 vocational education; in % of students; Turkey and EU;2011-12)

Incentive	Turkey	EU
Additional training hours	6%	42%
Additional equipment	41%	43%
Competitions and prizes	19%	18%
Financial incentives	1%	20%
Reduction of teaching hours		4%
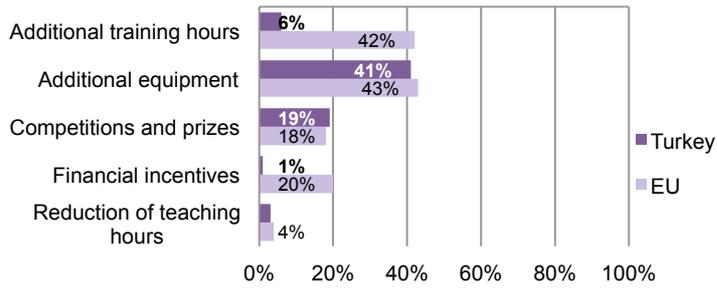
7: CLUSTERS

THE DIGITALLY SUPPORTIVE SCHOOL

Results from the Survey of Schools: ICT and Education suggest that a 'digitally supportive school' develops strong concrete support measures for teachers to use ICT in teaching and learning (ICT coordinator, teacher training, etc.), whether or not associated with strong policies (written statement about introducing ICT in teaching and learning and/or in subject, etc.). In Turkey it is at grade 8 only where a greater percentage of students than the EU mean is in digitally supportive schools, i.e. with strong policy and strong support (ranked 12th out of 27 countries on this score), but at the same grade there are more students in schools with weak policies and weak support, i.e. a strong polarisation. At other grades, particularly grade 11, few students are in schools with strong support.

Fig. A: Percentages of students by school type in terms of policy and support (all grades, Turkey and EU, 2011-12)
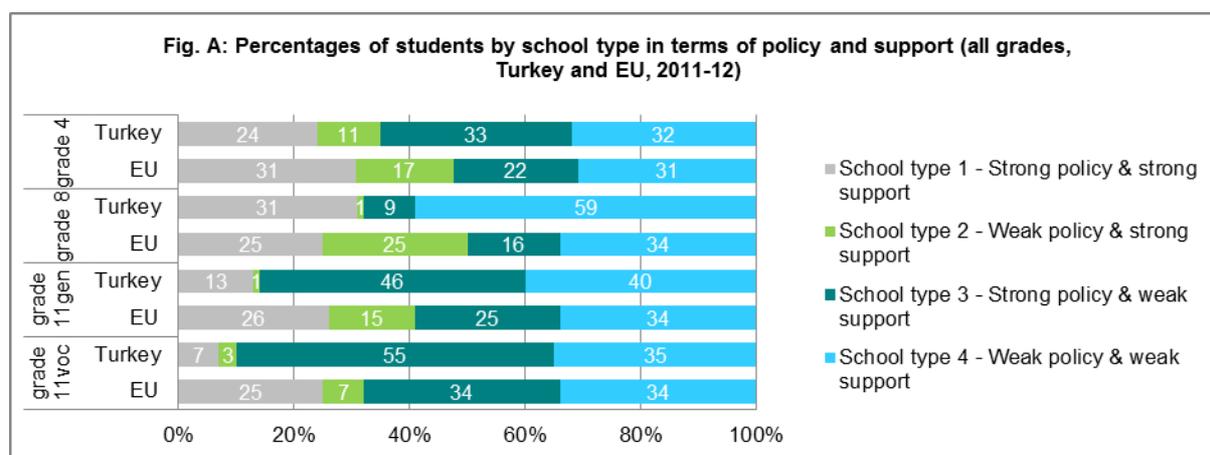
At grade 8 Turkey is in the middle group of countries considering schools with strong policy and strong support (type 1), as shown in fig. 7.1, but is second highest in terms of schools with neither a strong policy nor strong support, suggesting a sharp division between types of school. At other grades (main report, fig. 8.1), Turkey is lower in terms of type 1 schools but there are generally lower percentages of students in type 4 schools.

Fig. 7.1: Digitally supportive schools
(% students, grade 8, EU and country level, 2011-12)

Country				
Czech_Rep				
Slovenia				
Ireland				
Norway				
Malta				
Lithuania				
Bulgaria				
Slovakia				
Denmark				
Belgium				
Estonia				
Turkey	31	9		59
Austria				
Portugal				
Latvia				
Spain				
Sweden				
EU	25	25	16	34
Finland				
Poland				
Hungary				
Romania				
Cyprus				
France				
Italy				
Greece				
Croatia				

School type 1 - Strong policy & strong support
School type 2 - Weak policy & strong support
School type 3 - Strong policy & weak support
School type 4 - Weak policy & weak support

DIGITALLY CONFIDENT AND SUPPORTIVE TEACHERS

The concept of the 'digitally supportive teacher' also emerged from a close analysis of the data. Such teachers have high confidence in and a positive attitude towards ICT and high access to ICT and low obstacles to using it. Teachers having high confidence in and a positive attitude towards ICT even seem to be able to overcome low access to ICT and high obstacles. Percentages of students taught by *digitally supportive teachers* in Turkey are close to or above the EU mean at grades 4 and 8 but well below at grade 11.

Fig. B: Percentages of students by type of T&L conditions (teachers' confidence/attitude & access/obstacles) (all grades, Turkey and EU, 2011-12)

grade 4	Turkey	19	37	3	41
	EU	18	33	25	24
grade 8	Turkey	22	30	11	37
	EU	23	31	24	22
grade 11 gen	Turkey	3	25	6	66
	EU	28	27	26	19
grade 11 voc	Turkey	17	34	9	40
	EU	25	20	26	28

Type 1 - • high teachers confidence/attitude & high access/low obstacles
Type 2 - • high teachers confidence/attitude & low access/high obstacles
Type 3 - • low teachers confidence/attitude & high access/low obstacles
Type 4 - • low teachers confidence/attitude & low access/high obstacles

Turkey ranks in the middle at grade 8 compared to other countries with type 1 teachers (fig. 7.2) but is second highest for type 4 teachers. At grade 11 general there are more students in schools with low teacher ICT confidence, low access and high obstacles than any other country (main report fig. 8.3).

Fig. 7.2: Digitally supportive teachers
(% students, grade 8, EU and country level, 2011-12)

The chart shows horizontal stacked bars for countries: Ireland, Portugal, Slovenia, Hungary, Slovakia, Spain, Estonia, Bulgaria, Austria, Poland, Norway, France, EU, Turkey, Lithuania, Italy, Czech_Rep, Malta, Latvia, Denmark, Belgium, Romania, Croatia, Sweden, Finland, Cyprus, Greece, Luxembourg.

EU: 23, 31, 24, 22
Turkey: 22, 30, 11, 37

Legend:
- Type 1 - • high teachers confidence/ attitude & high access/low obstacles
- Type 2 - • high teachers confidence/ attitude & low access/high obstacles
- Type 3 -• low teachers confidence/ attitude & high access/low obstacles
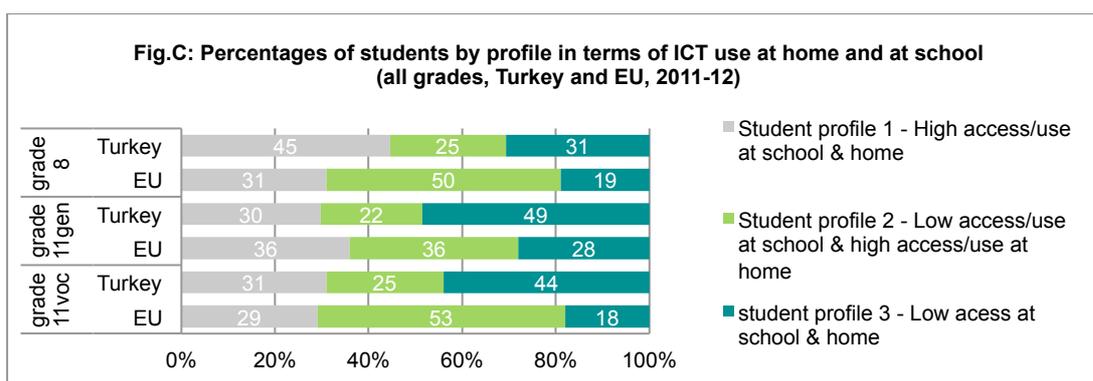- Type 4 -• low teachers confidence/ attitude & low access/high obstacles

THE DIGITALLY SUPPORTIVE STUDENT

A *digitally supportive student* being defined as having high ICT access and use at school and at home, the percentages of such grade 8 students in Turkey is the second highest in the survey but at the same grade there are more students with low access and use both at school and at home than other countries. Percentages of such students are also high at grade 11.

Fig.C: Percentages of students by profile in terms of ICT use at home and at school
(all grades, Turkey and EU, 2011-12)

grade 8	Turkey	45	25	31
	EU	31	50	19
grade 11gen	Turkey	30	22	49
	EU	36	36	28
grade 11voc	Turkey	31	25	44
	EU	29	53	18

Legend:
- Student profile 1 - High access/use at school & home
- Student profile 2 - Low access/use at school & high access/use at home
- student profile 3 - Low acess at school & home

On this measure, percentages of type 1 grade 8 students are second highest in Europe (fig. 7.3), giving Turkey a real benefit. Again however there is polarisation, with the highest percentage of type 3 students at this grade. At other grades (main report, fig. 8.5), the percentage of type 1 students ranks Turkey in the bottom ten at grade 11 general and in the middle at grade 11 vocational.

**Fig.7.3: Digitally supportive students
(% students, grade 8, EU and country level, 2011-12)**
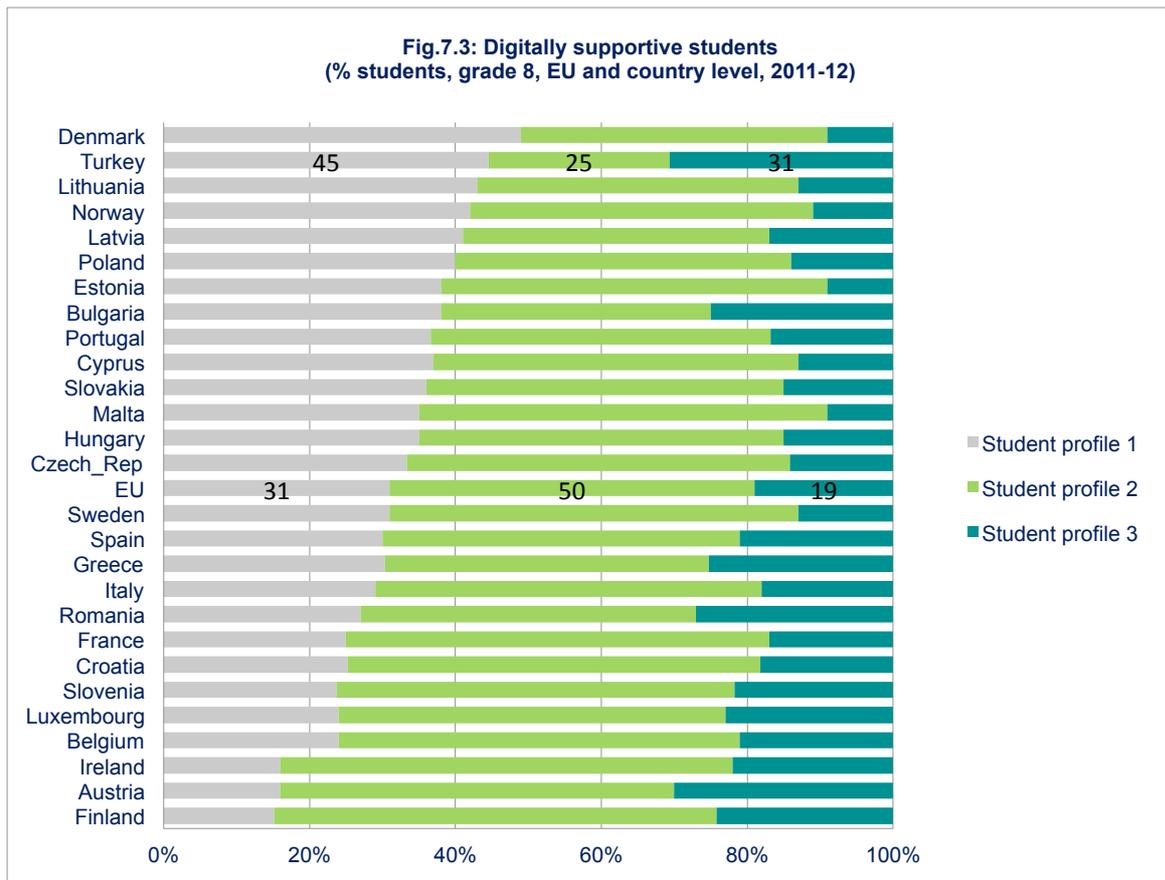
THE DIGITALLY EQUIPPED SCHOOL

A *digitally equipped school* is well equipped, has fast broadband (above 10mbps) and is 'connected' (i.e. has at least one of these: a website, email for teachers and students, a local area network, a virtual learning environment). Analysis of the data revealed three clusters of schools according to these measures:

- Type 1: Highly digitally equipped schools, characterised by relatively high equipment levels, fast broadband and relatively high connectedness

- Type 2: Partially digitally equipped schools, with lower than type 1 equipment levels, slow (less than 10mbps) or no broadband, and some connectedness

- Type 3: As type 2 but with no connectedness

In Turkey at grade 8 there are no students in type 1 schools and more in type 3 than other countries. At other grades Turkey is also below the EU mean.

**Fig. D: Digitally equipped schools
(in % students, Turkey and EU, 2011-12)**

- Type 1: Highly digitally equipped schools
- Type 2: Partially digitally equipped schools
- Type 3: Schools with low equipment levels, slow (less than 10mbps) or no broadband, and no connectedness
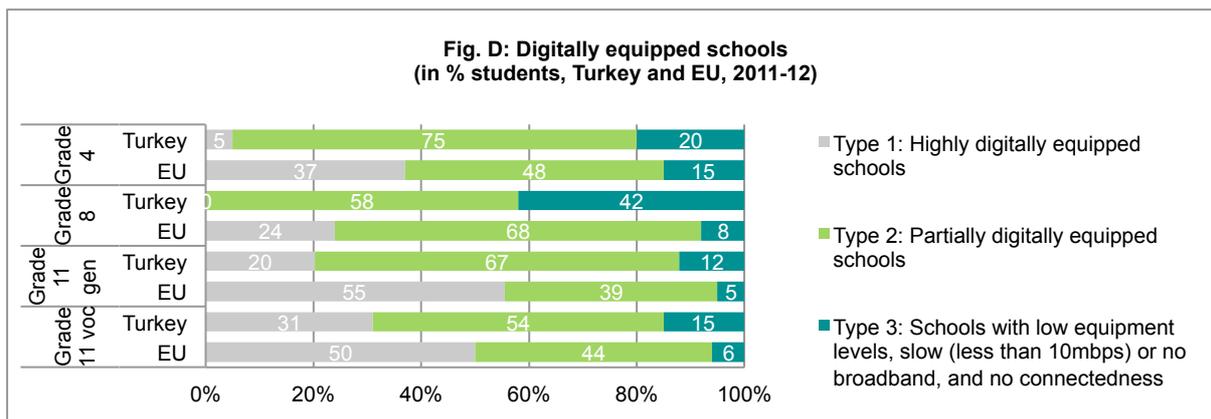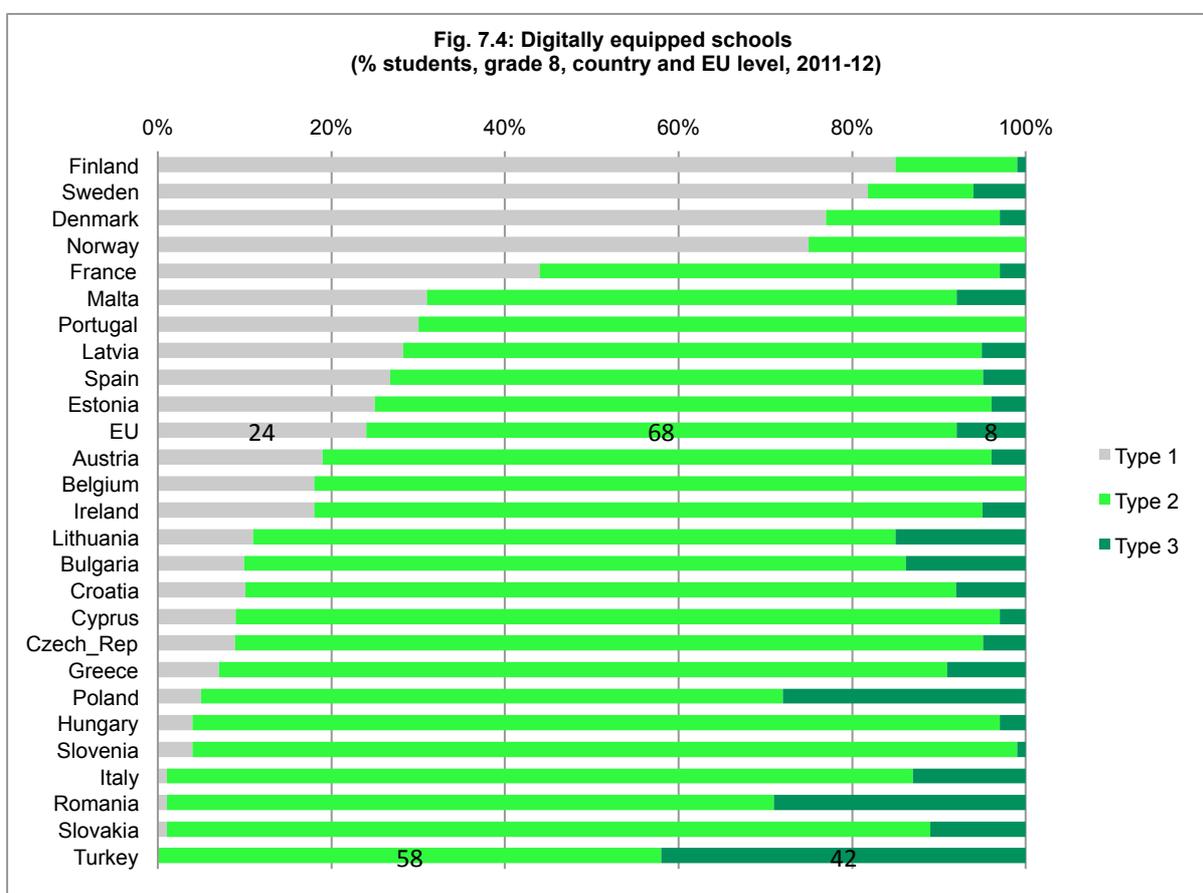
Fig. 7.4 shows how Turkey compares with other countries at grade 8 on this measure, ranking last as regards type 1 and first for type 3 schools. At other grades (main report, fig. 1.13) Turkey is also low in comparison with other countries.

**Fig. 7.4: Digitally equipped schools
(% students, grade 8, country and EU level, 2011-12)**

CONCLUSION

In terms of **equipment,** students in Turkey are in less favourable conditions compared to the EU average situation concerning access to computers and connectedness measured through the existence of a school website or home page, but enjoy good connectivity through broadband (although generally not as fast as the EU mean).

As for **frequency of use of technology,** it is remarkable to note that use levels are close to the EU mean, suggesting heavy use of the equipment that is in schools. At all grades percentages of students in schools using ICT in at least 25 percent of lessons is well above the EU average. Student use is rather lower but close to the EU mean.

Teachers' **confidence in using operational ICT** is close to the EU mean (except at grade 11 general). The mean score of students in Turkey is below the EU mean, in all areas and noticeably lower in social media skills at Grade 11 general.

Time spent on **professional development in ICT** is generally below the EU mean (except at grade 11 vocational), and is particularly low at grade 4. Training via online communities is above the EU mean at all grades (except for at grade 11 general).

As for **support measures for using ICT in teaching and learning**, students at all grades are in schools that all employ considerably more full-time ICT coordinators than the EU mean, and approaching 100% at grade 8. Compared to the situation at EU level, students at grade 4 are in schools where ICT coordinators are provided at much the same level, but the gap widens through the grades and is less than half the EU level at grade 11 vocational.

Overall, the focus in Turkey seems to be on providing broadband for all schools and supporting teachers and this strategy is reflected in teacher confidence and high levels of the use of ICT in lessons.

Analysis of the data in the *Survey of Schools: ICT and education* suggests a '*5C approach*' to addressing issues identified in the survey:

- **Capacity building**, through sustained investment in teachers' professional development
- **Concrete support measures**, accompanying specific policies at school level
- **Combined policies and actions**, in different policy areas within a systemic approach
- **Country-specific support**, addressing large differences and degrees of ICT provision and implementation
- **Competence development**: these four actions directed at increasing effectively and dramatically young people's digital competence and the key competences described in the European framework.

TABLES

Note: For reasons of space, only selected country-EU data tables are shown here; those for all-country charts (e.g. fig. 2.2) are available online. SE = Standard Error; w = insufficient data.

Fig. 2.1
Computers per 100 students

COUNTRY	Grade4	SE1	Grade8	SE2	Grade11gen	SE3	Grade11voc	SE4
Turkey	4.9	(0.7)	4.4	(1.6)	4.5	(0.4)	8.9	(0.7)
EU	14.5	(0.7)	21.1	(1.2)	23.2	(7.7)	33.6	(10.6)

Fig. 2.3
Broadband speed

Level	COUNTRY	NoBroadband	SE1	LessThan2	SE2	From2to5	SE3	From5to10	SE4	From10to30
1. Grade4	Turkey	8.8%	(5.5)	41.1%	(9.4)	25.7%	(7.5)	17.4%	(7.2)	7.0%
	EU	8.0%	(1.3)	16.5%	(2.3)	21.4%	(2.4)	22.1%	(2.2)	19.5%
2. Grade8	Turkey	0.0%	(0.0)	38.5%	(19.2)	24.2%	(18.0)	24.4%	(19.6)	5.0%
	EU	5.0%	(0.8)	9.6%	(1.3)	19.1%	(2.3)	27.7%	(2.4)	24.8%
3. Grade11gen	Turkey	0.0%	(0.0)	29.6%	(6.1)	34.9%	(6.9)	23.2%	(5.8)	11.6%
	EU	3.7%	(1.3)	6.2%	(0.8)	18.0%	(2.8)	23.2%	(3.0)	25.4%
4. Grade11voc	Turkey	2.6%	(1.9)	22.8%	(5.8)	22.6%	(5.7)	37.1%	(6.7)	15.0%
	EU	6.5%	(1.8)	6.2%	(1.3)	15.2%	(3.0)	21.2%	(2.6)	24.2%

SE5	From30to100	SE6	MoreThan100	SE7
(4.6)	0.0%	(0.0)	0.0%	(0.0)
(2.2)	8.6%	(1.4)	4.0%	(1.3)
(4.4)	1.5%	(0.6)	6.3%	(2.5)
(2.3)	8.6%	(1.6)	5.2%	(1.2)
(4.3)	0.0%	(0.0)	0.7%	(0.1)
(3.9)	13.3%	(2.6)	10.3%	(8.0)
(5.3)	0.0%	(0.0)	0.0%	(0.0)
(4.6)	15.7%	(7.1)	10.9%	(5.3)

Fig. 2.5
Connectedness

Level	COUNTRY	SchWebsite	SE1	VLE	SE2	NoConnect	SE3
1. Grade4	Turkey	62.4%	(9.1)	28.2%	(8.6)	22.0%	(8.0)
	EU	69.7%	(3.6)	26.8%	(2.0)	15.9%	(2.2)
2. Grade8	Turkey	53.6%	(19.2)	25.1%	(17.4)	41.7%	(19.7)

Level	COUNTRY	SchWebsite	SE1	VLE	SE2	NoConnect	SE3
	EU	86.0%	(1.6)	61.4%	(3.0)	8.4%	(1.2)
3. Grade11gen	Turkey	71.7%	(6.4)	19.9%	(5.6)	13.2%	(5.3)
	EU	91.7%	(3.1)	61.0%	(7.9)	7.0%	(2.9)
4. Grade11voc	Turkey	70.2%	(6.5)	21.1%	(6.1)	14.7%	(5.1)
	EU	93.1%	(1.8)	63.5%	(4.7)	5.8%	(1.6)

Fig. 3.1
ICT equip use by teachers

Level	COUNTRY	MoreThan75	SE1	From51to75	SE2	From25to50	SE3	From11to24	SE4	From6to10	SE5
1. Grade4	Turkey	10.1%	(5.4)	17.7%	(6.9)	26.1%	(7.1)	7.5%	(3.5)	15.2%	(6.7)
	EU	3.0%	(0.4)	10.0%	(2.4)	13.9%	(1.4)	18.0%	(1.8)	19.1%	(2.1)
2. Grade8	Turkey	12.4%	(6.0)	26.8%	(14.1)	17.2%	(7.0)	20.9%	(6.9)	8.7%	(4.2)
	EU	7.4%	(1.0)	6.8%	(0.8)	14.7%	(0.9)	20.7%	(1.2)	18.9%	(1.4)
3. Grade11gen	Turkey	2.6%	(1.2)	7.9%	(2.0)	23.1%	(3.7)	17.6%	(3.3)	12.8%	(3.2)
	EU	7.0%	(1.0)	8.1%	(1.4)	14.9%	(1.4)	22.9%	(3.8)	17.1%	(1.8)
4. Grade11voc	Turkey	28.1%	(3.8)	19.7%	(4.2)	12.6%	(2.7)	11.1%	(2.8)	10.6%	(3.0)
	EU	19.3%	(1.4)	12.1%	(1.2)	16.8%	(1.0)	19.3%	(2.8)	13.2%	(1.3)

From1to5	SE6	LessThan1	SE7	DontKnow	SE8
8.0%	(5.0)	7.6%	(6.1)	7.7%	(4.6)
20.7%	(2.7)	8.7%	(1.4)	6.7%	(1.4)
1.4%	(1.1)	7.4%	(5.6)	5.2%	(3.3)
14.4%	(1.0)	11.0%	(1.0)	6.1%	(0.8)
12.5%	(3.2)	16.5%	(3.7)	7.1%	(2.3)
14.0%	(1.5)	10.3%	(1.4)	5.7%	(0.9)
4.3%	(2.0)	10.6%	(2.5)	2.9%	(1.5)
9.0%	(1.5)	6.8%	(1.1)	3.5%	(0.5)

Fig. 3.2
Frequency of ICT use by teachers

COUNTRY	Grade4	SE1	Grade8	SE2	Grade11gen	SE3	Grade11voc	SE4
Turkey	58.4%	(9.2)	59.5%	(10.8)	36.1%	(5.0)	62.2%	(4.6)
EU	28.8%	(2.6)	32.0%	(1.6)	31.8%	(1.8)	49.9%	(2.1)

Fig. 3.3
Using ICT equipment

Level	Country	OwnMobPhone	SE1	OwnLaptop	SE2	SchoolComputer	SE3
1. Grade8	Turkey	13.9	(3.1)	13.6	(6.6)	66.4	(5.8)
	EU	28.0	(0.8)	11.2	(0.7)	53.3	(1.1)
2. Grade11gen	Turkey	38.2	(2.5)	9.9	(1.2)	47.8	(2.7)
	EU	34.6	(1.3)	10.7	(1.1)	50.5	(1.5)

Level	Country	OwnMobPhone	SE1	OwnLaptop	SE2	SchoolComputer	SE3
3. Grade11voc	Turkey	39.9	(3.5)	13.2	(1.6)	64.7	(3.7)
	EU	45.6	(1.3)	15.5	(0.7)	64.3	(1.5)

Fig. 3.4
Scale Use of ICT activities

Country	Grade8	SE1	Grade11gen	SE2	Grade11voc	SE3
Turkey	1.88	(0.06)	1.64	(0.04)	1.66	(0.04)
EU	1.63	(0.01)	1.65	(0.03)	1.62	(0.04)

Fig. 4.1
Scales Teachers ICT skills

Level	COUNTRY	SocialMediaSkills	SE1	OperatSkills	SE2
1. Grade4	Turkey	2.40	(0.17)	2.73	(0.14)
	EU	2.41	(0.03)	2.98	(0.02)
2. Grade8	Turkey	2.69	(0.14)	2.93	(0.11)
	EU	2.37	(0.04)	3.00	(0.03)
3. Grade11gen	Turkey	2.26	(0.08)	2.64	(0.06)
	EU	2.38	(0.07)	3.01	(0.03)
4. Grade11voc	Turkey	2.83	(0.09)	3.15	(0.07)
	EU	2.51	(0.03)	3.16	(0.02)

Fig. 4.2
Scales Students ICT skills

Level	country	SocialMediaSkills	SE1	OperatSkills	SE2	RespInternUse	SE3	SafeInternUse	SE4
1. Grade8	Turkey	2.24	(0.12)	2.40	(0.09)	2.54	(0.09)	2.91	(0.10)
	EU	2.41	(0.02)	2.63	(0.02)	2.58	(0.02)	2.98	(0.02)
2. Grade11gen	Turkey	2.29	(0.04)	2.42	(0.04)	2.60	(0.04)	2.92	(0.05)
	EU	2.78	(0.02)	2.88	(0.01)	2.93	(0.03)	3.16	(0.02)
3. Grade11voc	Turkey	2.28	(0.05)	2.55	(0.06)	2.57	(0.05)	2.90	(0.05)
	EU	2.55	(0.02)	2.78	(0.02)	2.75	(0.02)	2.98	(0.02)

Fig. 5.1
Time in professional development

Level	COUNTRY	MoreThan6	SE1	From1to3	SE2	NoTime	SE3
1. Grade4	Turkey	42.7%	(8.9)	15.3%	(6.0)	17.4%	(6.2)
	EU	47.5%	(4.2)	19.4%	(3.0)	11.9%	(2.4)
2. Grade8	Turkey	33.6%	(14.3)	4.8%	(2.7)	43.9%	(10.3)
	EU	60.7%	(1.6)	15.6%	(1.0)	5.2%	(0.5)
3. Grade11gen	Turkey	25.2%	(3.7)	24.1%	(4.4)	33.6%	(4.8)
	EU	44.7%	(5.2)	23.1%	(3.4)	11.0%	(1.6)
4. Grade11voc	Turkey	43.2%	(4.8)	9.5%	(2.7)	26.8%	(4.2)

Level	COUNTRY	MoreThan6	SE1	From1to3	SE2	NoTime	SE3
	EU	49.4%	(3.2)	20.5%	(3.0)	9.7%	(1.6)

Fig. 5.2
Type of training

Level	COUNTRY	OnlineComm	SE1	ICTtraining	SE2	PersonalLearning	SE3
1. Grade4	Turkey	28.5%	(7.4)	31.5%	(8.1)	58.3%	(8.9)
	EU	25.4%	(2.5)	40.3%	(3.2)	70.0%	(2.8)
2. Grade8	Turkey	33.1%	(12.5)	29.3%	(14.3)	47.1%	(13.8)
	EU	30.8%	(1.6)	50.5%	(1.7)	74.2%	(1.3)
3. Grade11gen	Turkey	23.9%	(3.9)	18.2%	(3.7)	52.3%	(4.1)
	EU	28.0%	(2.4)	43.5%	(2.2)	71.7%	(2.2)
4. Grade11voc	Turkey	35.4%	(4.7)	11.0%	(2.7)	62.0%	(4.3)
	EU	28.2%	(1.5)	41.4%	(3.6)	70.8%	(1.5)

Fig. 6.1
ICT Coordinator

COUNTRY	Grade4	SE1	Grade8	SE2	Grade11gen	SE3	Grade11voc	SE4
Turkey	59.4%	(9.0)	70.7%	(17.2)	50.1%	(6.9)	31.5%	(6.4)
EU	62.0%	(3.6)	79.6%	(1.9)	67.7%	(4.8)	69.7%	(3.5)

Fig. 6.2
Type of ICT coordinator

Level	COUNTRY	AvailFullTime	SE1	Rewarded	SE2	ProvPedSupport	SE3
1. Grade4	Turkey	85.9%	(7.7)	4.0%	(1.0)	94.8%	(3.8)
	EU	39.3%	(3.0)	56.5%	(3.0)	75.9%	(2.3)
2. Grade8	Turkey	98.2%	(2.1)	1.8%	(0.9)	100.0%	(0.0)
	EU	34.8%	(2.9)	70.6%	(2.4)	72.5%	(2.5)
3. Grade11gen	Turkey	87.1%	(6.8)	16.3%	(6.1)	91.5%	(5.1)
	EU	49.6%	(6.9)	63.6%	(7.7)	73.4%	(4.2)
4. Grade11voc	Turkey	73.8%	(12.4)	2.1%	(0.6)	63.9%	(13.0)
	EU	49.7%	(3.3)	63.6%	(4.6)	71.5%	(3.9)

Fig. 6.3
Incentives

Level	COUNTRY	TrainingHours	SE1	Equipment	SE2	Competitions	SE3	FinancialInc	SE4	ReductionHours	SE5	Other	SE6
1. Grade4	Turkey	1.7%	(0.3)	17.5%	(7.8)	10.9%	(5.3)	3.4%	(2.5)	5.7%	(3.4)	13.5%	(6.5)
	EU	30.1%	(4.5)	26.6%	(3.8)	12.9%	(2.4)	13.0%	(2.1)	2.9%	(0.6)	12.8%	(2.3)
2. Grade8	Turkey	6.4%	(6.0)	26.2%	(18.2)	0.0%	(0.0)	0.0%	(0.0)	1.0%	(0.4)	2.4%	(1.9)
	EU	34.1%	(2.6)	33.6%	(1.9)	13.3%	(1.6)	10.0%	(1.0)	1.5%	(0.4)	14.8%	(1.8)
3. Grade11gen	Turkey	15.5%	(5.2)	20.7%	(5.5)	11.7%	(4.3)	1.4%	(1.1)	6.9%	(3.4)	17.4%	(5.1)
	EU	36.9%	(9.1)	37.7%	(3.5)	17.6%	(4.4)	14.3%	(2.8)	1.7%	(0.7)	15.3%	(5.0)
4. Grade11voc	Turkey	6.5%	(3.2)	40.9%	(7.1)	18.5%	(5.7)	0.8%	(0.1)	2.7%	(1.9)	19.1%	(5.7)
	EU	41.6%	(8.1)	43.4%	(7.7)	17.8%	(4.2)	19.4%	(4.9)	4.3%	(1.3)	18.7%	(4.5)

Fig. A
Digitally supportive schools

Level	COUNTRY	Type1	SE1	Type2	SE2	Type3	SE3	Type4	SE4
1. Grade4	Turkey	24	(7.74)	11	(5.51)	33	(8.51)	32	(9.05)
	EU	31	(2.70)	17	(3.17)	22	(2.53)	31	(2.98)
2. Grade8	Turkey	31	(18.62)	1	(0.40)	9	(6.69)	59	(18.74)
	EU	25	(1.91)	25	(2.20)	16	(1.83)	34	(2.15)
3. Grade11gen	Turkey	13	(4.13)	1	(0.14)	46	(7.01)	40	(6.91)
	EU	26	(2.28)	15	(8.69)	25	(3.74)	34	(5.30)
4. Grade11voc	Turkey	7	(2.96)	3	(1.74)	55	(6.95)	35	(6.83)
	EU	25	(3.12)	7	(2.21)	34	(7.50)	34	(8.58)

Fig. B
Digitally supportive teachers

Level	COUNTRY	Type1	SE1	Type2	SE2	Type3	SE3	Type4	SE4
1. Grade4	Turkey	19	(7.00)	37	(8.14)	3	(1.93)	41	(8.89)
	EU	18	(2.02)	33	(2.95)	25	(2.33)	24	(2.64)
2. Grade8	Turkey	22	(14.50)	30	(8.52)	11	(6.43)	37	(9.22)
	EU	23	(1.43)	31	(1.27)	24	(1.52)	22	(1.17)
3. Grade11gen	Turkey	3	(1.47)	25	(4.24)	6	(1.85)	66	(4.89)
	EU	28	(2.41)	27	(2.68)	26	(1.65)	19	(1.67)
4. Grade11voc	Turkey	17	(3.73)	34	(4.94)	9	(2.70)	40	(5.18)
	EU	25	(1.49)	20	(2.69)	26	(2.83)	28	(1.67)

Fig. C
Digitally supportive students

Level	COUNTRY	Type1	SE1	Type2	SE2	Type3	SE3
1. Grade8	Turkey	45	(6.36)	25	(4.28)	31	(6.89)
	EU	31	(1.00)	50	(0.85)	19	(0.67)
2. Grade11gen	Turkey	30	(2.02)	22	(2.48)	49	(2.93)
	EU	36	(1.18)	36	(1.00)	28	(1.47)
3. Grade11voc	Turkey	31	(2.54)	25	(2.23)	44	(2.89)
	EU	29	(1.60)	53	(1.03)	18	(1.37)

Fig. D
Digitally equipped Schools

Level	COUNTRY	Type1	SE1	Type2	SE2	Type3	SE3
1. Grade4	Turkey	5	(2.69)	75	(7.72)	20	(7.45)
	EU	37	(4.43)	48	(4.15)	15	(2.12)
2. Grade8	Turkey	58	(19.75)	0	(0.0)	42	(19.75)
	EU	68	(2.87)	24	(3.31)	8	(1.16)
3. Grade11gen	Turkey	20	(5.26)	67	(6.47)	12	(4.92)
	EU	55	(12.27)	39	(10.34)	5	(2.06)
4. Grade11voc	Turkey	15	(4.95)	31	(6.79)	54	(7.02)
	EU	6	(1.88)	50	(13.83)	44	(12.07)

EU mean. In this report, 'EU mean' refers to the weighted average for the 27 countries in the survey (EU27 without Germany, Netherlands and the United Kingdom, Croatia, Norway and Turkey).

Confidence. Teachers and students were asked to rate their level of confidence in their ability to perform ICT related tasks according to a scale ranging from 'not at all' to 'a lot'. By subjecting the data to factorial analysis four scales emerged from the list of items. These included operational skills and social media skills and two additional scales related to students' ability to use the internet safely and responsibly. For a detailed definition of these skills, please refer to section 4 of the survey report.

Participation. For the Survey of Schools: ICT and Education, 300 schools in Turkey were selected at random at each of four levels (grade 4, 8, 11 general and 11 vocational) and invited to participate in the survey. Fig. 8.1 shows the percentage of those schools in which at least one survey questionnaire was submitted, the EU average ranging from 35 to 40 percent depending on the grade. In Turkey participation levels (260 schools in total) are below the EU mean.

**Fig. 8.1: Participation rates
(% of sampled schools with at least one questionnaire completed, all grades, Turkey and EU, 2011-12)**