European Schoolnet

University of Liege
Psychology and
Education

SURVEY OF SCHOOLS: ICT IN EDUCATION

COUNTRY PROFILE: ROMANIA

November 2012

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1. INTRODUCTION

ICT IN THE SCHOOL EDUCATION SYSTEM OF ROMANIA

In Romania[1] the education system is managed at national level by the ministry of Education, Research, Youth and Sports (MECTS). Education is compulsory between the ages of 6 and 16 years. The Ministry of Education, Research Youth and Sports is responsible for the elaboration of the national curriculum for Pre-tertiary education: curriculum frameworks, syllabi and textbooks. Schools, in cooperation with the County School Inspectorates and local community representatives, establish the school based curriculum (local development curriculum for T/VET). Textbooks are provided free of charge for all compulsory education and teachers are allowed to use only textbooks that are approved by the ministry. For most subjects taught during primary/secondary education there are three or more alternative textbooks approved for each grade

According to Eurydice's **Key Data on Learning and Innovation through ICT at school in Europe**[2], in Romania there are national strategies covering training measures in ICT in schools[3]. There are central steering documents for all ICT learning objectives[4] at secondary education level only, except for in developing programme skills. In secondary schools ICT is taught as a general tool for other subjects/or as a tool for specific tasks in other subjects, is included within technology as a subject, and as is taught as a separate subject, but is not included at primary school level. At primary and secondary education level recommendations or suggestions are provided in the ICT hardware areas of e-book readers, and computers projectors or beamers where support is also provided, and for ICT software[5] where recommendation or suggestions and are made for multimedia applications, communication software, and for office applications and digital resources, where in addition support is provided. According to official steering documents, both students and teachers at secondary level are expected to use ICT in all subjects both in class and for complementary activities, and for natural and social sciences at primary education level. 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 ICT training for teachers, ICT training for pupils/students, providing extra-curricular activities, curriculum development, and for developing new forms or modes of assessment.

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.

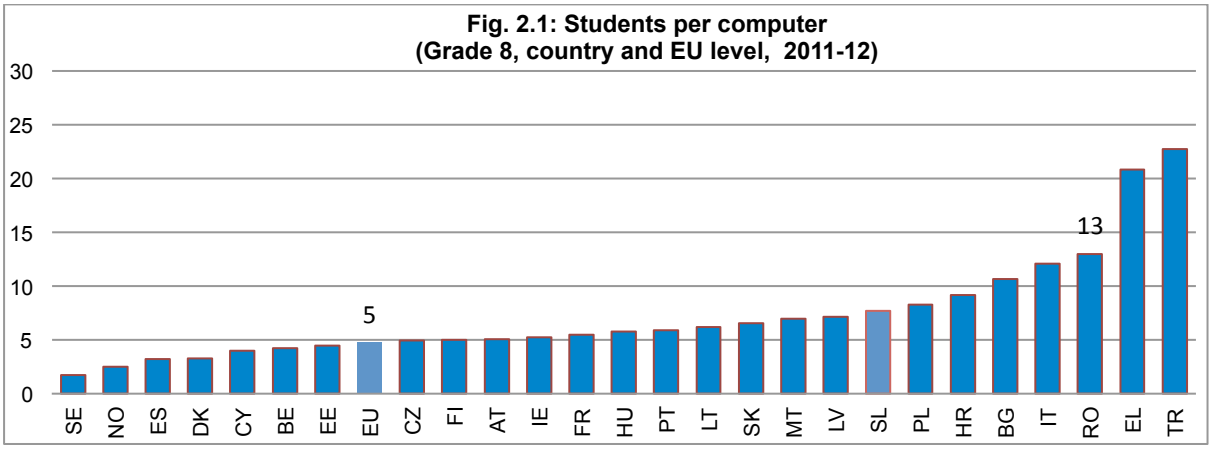
The full report, country profiles, background information, questionnaires, tables, details of the methodology and the raw data are freely available at https://ec.europa.eu/digital-agenda/en/pillar-6-enhancing-digital-literacy-skills-and-inclusion. The authors may be contacted at essie-eu@eun.org and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

2. ICT INFRASTRUCTURE

AVAILABILITY OF COMPUTERS FOR EDUCATIONAL PURPOSES

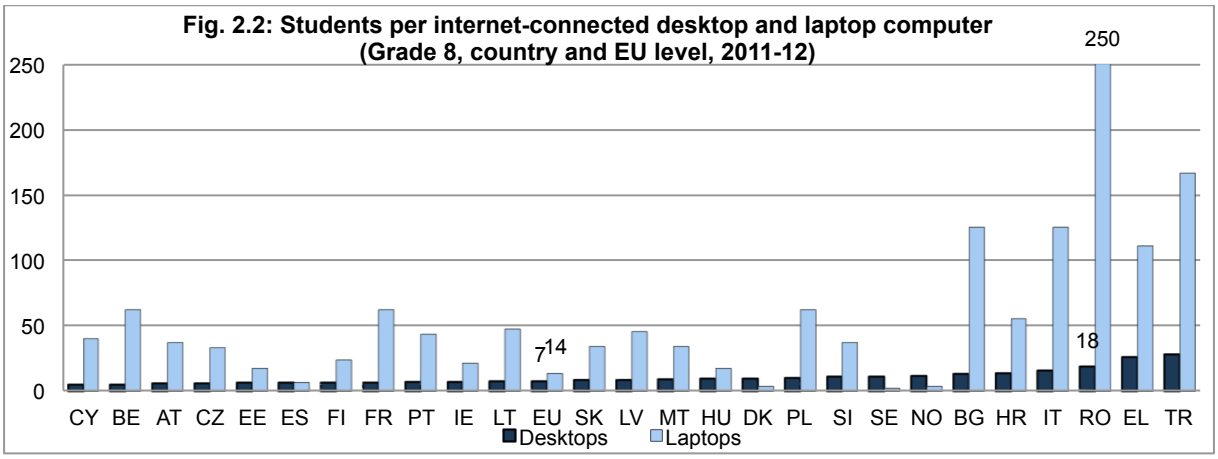
A computer is defined as a desktop or laptop, netbook or tablet computer, whether or not connected to the internet, available for educational purposes in school. In Romania there are considerably fewer computers available for all grade students than the EU average and this is particularly notable at Grade 11 vocational (fig. 1.1 main report). Fig. 2.1 shows that at grade 8 Romania ranks at the low end of the scale on this indicator with 13 students per computer. At other grades there are between 10 and 17 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 Romania there is less than the EU average for desktop computers and considerable fewer laptops for students at all grades. At grade 8 (fig. 2.1) and other grades (main report fig. 1.2) there are fewer students per desktop computer than in most other countries and very few laptops.

Fig. 2.2: Students per internet-connected desktop and laptop computer (Grade 8, country and EU level, 2011-12)



Computers are mostly located in dedicated labs (main report, fig. 1.3). Romania is in the group of low-ranking countries in terms of students in schools where over 90% of computers are operational (main report, fig. 1.4): 57% of grade 8 students in schools where this is the case. There are few interactive whiteboards and data projectors in Romanian schools at any grade. (main report, fig. 1.6). As in other countries, maintenance of ICT equipment is very much a task for school personnel.

BROADBAND

In Romania the numbers of students in schools without broadband is close to the EU mean, and lower at grade 11 vocational. At all grades the percentages of students in schools with broadband faster than 10mbps, is close to the EU mean, and is higher at grades 4 and 11.

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

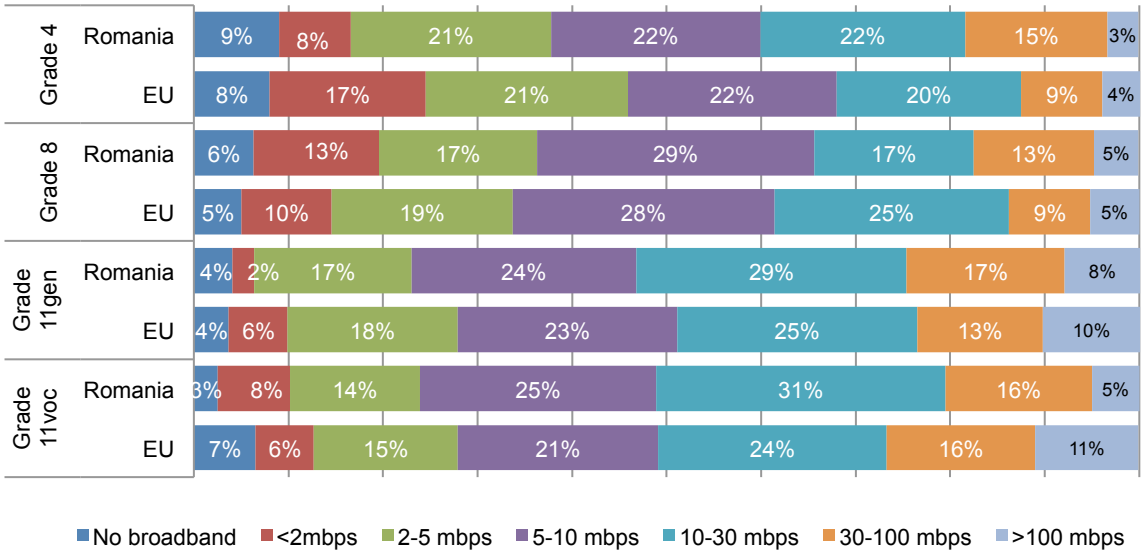
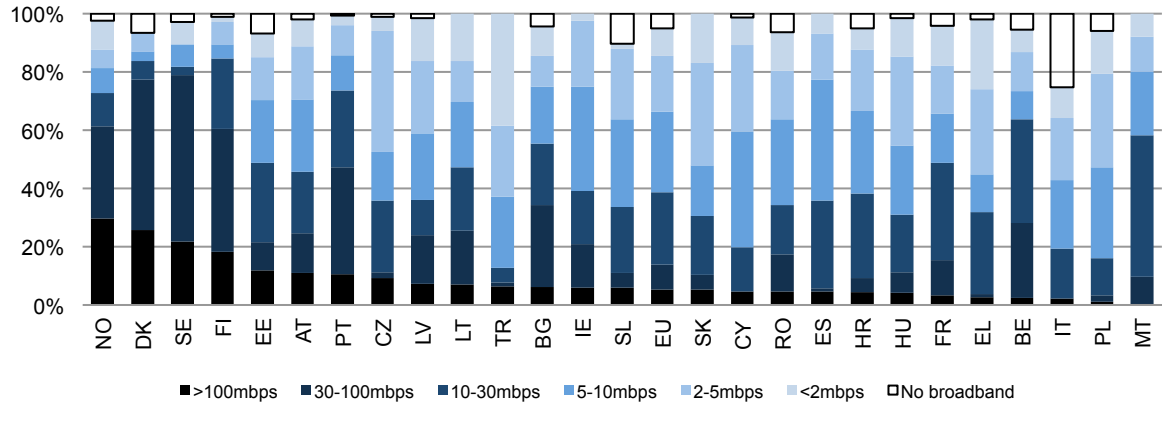


Fig. 2.4 shows how Romania compares with other countries at grade 8: 6 percent of students in schools with no broadband and most in schools with under 10mbps. The same is true at other grades, although more students are in schools with higher speeds at grade 11 vocational. Between 3 and 9% of students, dpeending on grade, are in schools without broadband in Romania (main report, fig. 1.9).

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

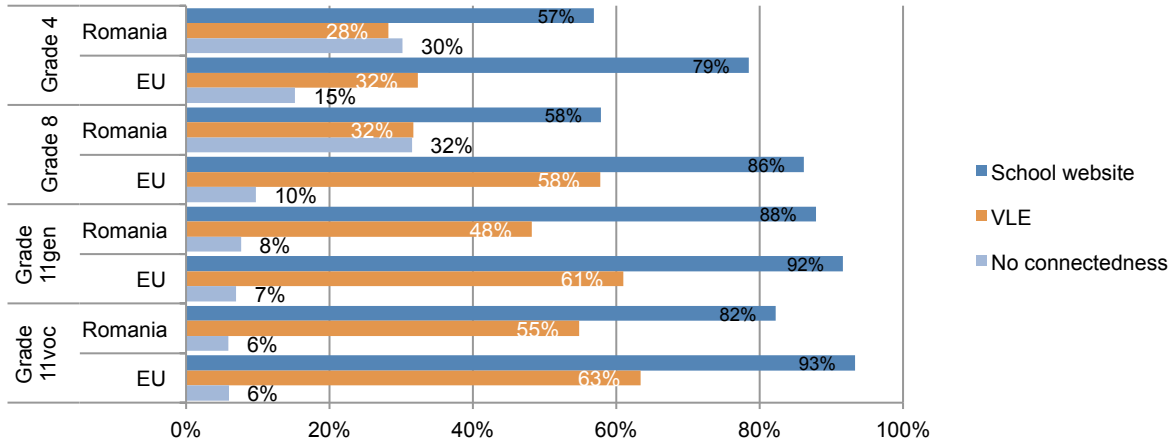


There are significant positive correlations between the population size of the school's locality and broadband speed in Romania (main report, section 1): the higher the population the faster the school's broadband.

'CONNECTEDNESS'

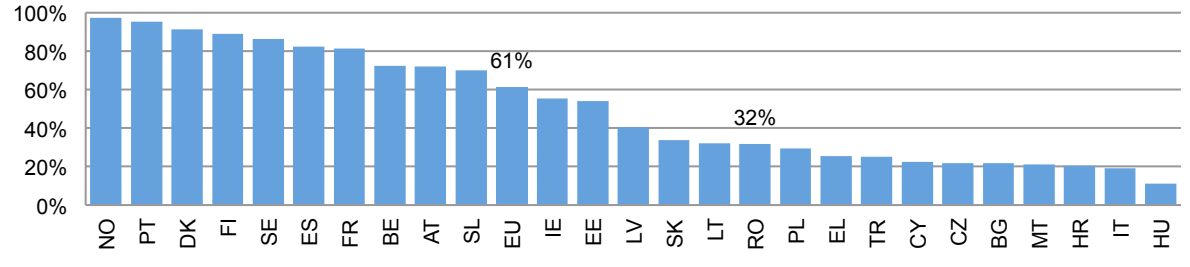
Percentages of students in schools that have 'connected' characteristics, e.g. having a website or a virtual learning environment (VLE), are shown below, as well as those with none of these items. In Romania, a lower percentage of students than the EU mean are in schools with a website, and also fewer in schools with a virtual learning environment, although this is approaching the EU mean at grades 4 and 11 vocational. 'Unconnected' schools are close to the EU average at grade 11, but are notably higher for pupils in schools at grades 4 and 8.

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



Romania is in the lower half of countries as regards virtual learning environments at all grades (grade 8 in fig. 2.6, other grades in the main report, fig. 1.10), very few offering external access (main report, fig. 1.11).

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



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 Romania use of ICT by teachers is close to the EU average, despite the relatively low levels of equipment provision. Commendably high percentages of teachers are using ICT in more than 25% of lessons, close to the EU average at all grades except grade 11 vocational which is slightly below.

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

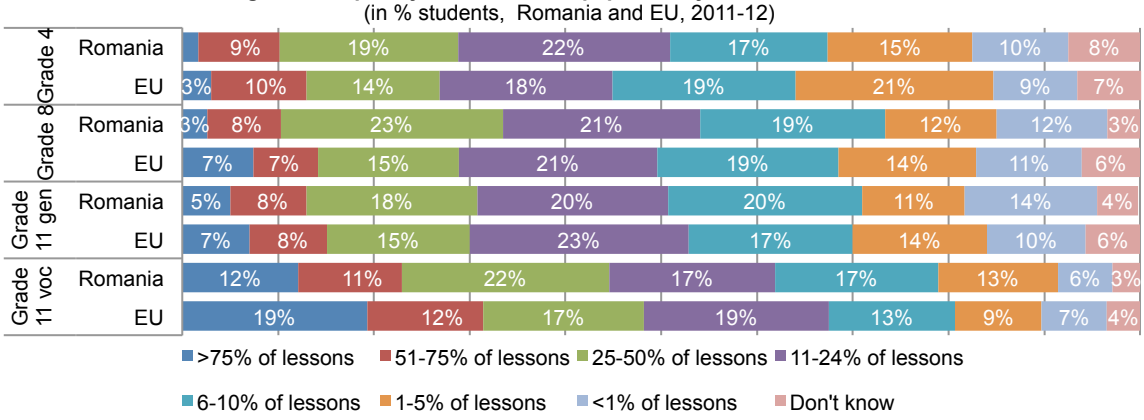


Fig. 3.2: Teachers' use of ICT in at least 25% of lessons
(% students, Romania and EU, 2011-12)

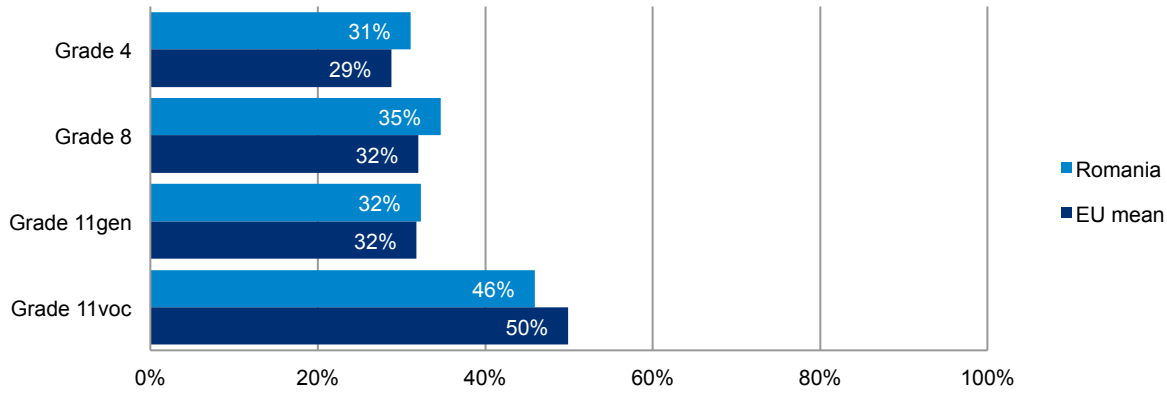
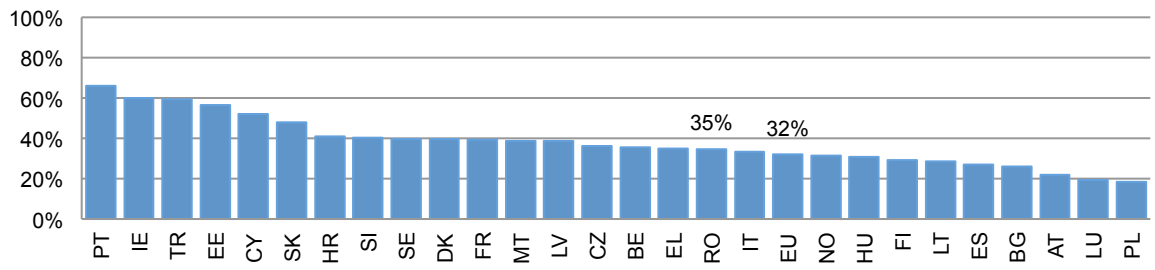


Fig 3.3 shows Romania ranks around the middle at grade 8, and similarly at other grades (main report, fig. 2.2).

Fig. 3.3: Teachers' use of ICT in more than 25% of lessons (Grade 8, EU and country level, 2011-12)

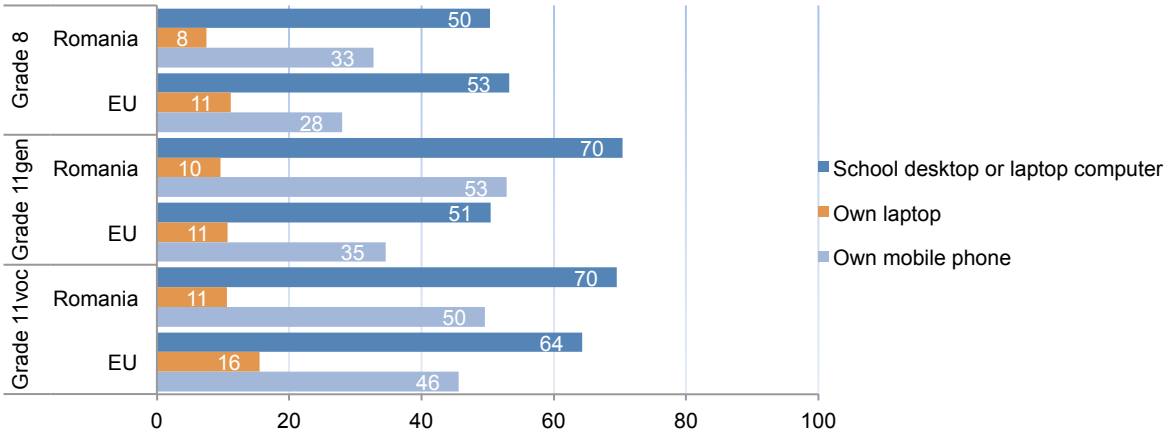


As regards teachers' use of ICT (Section 3 of the main report), few teachers in Romania have been using ICT in lessons for more than six years except at grade 11 general (main report, fig 3.2). Interestingly, Romania is first or second at all grades among European countries in terms of student-centred learning (fig. 3.5).

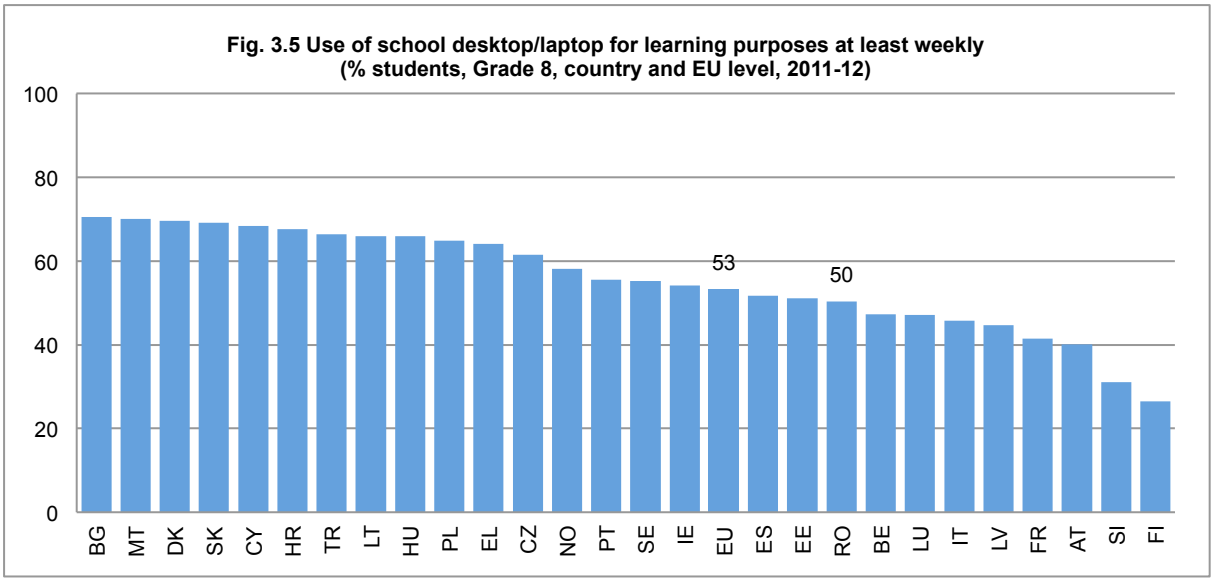
STUDENTS' ICT USE

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 Romania student use of computers in class is generally above the EU mean, noticeable so at grade 11 general, while the use of their own laptop is below EU means. Mobile phone usage is above the EU mean at all grades.

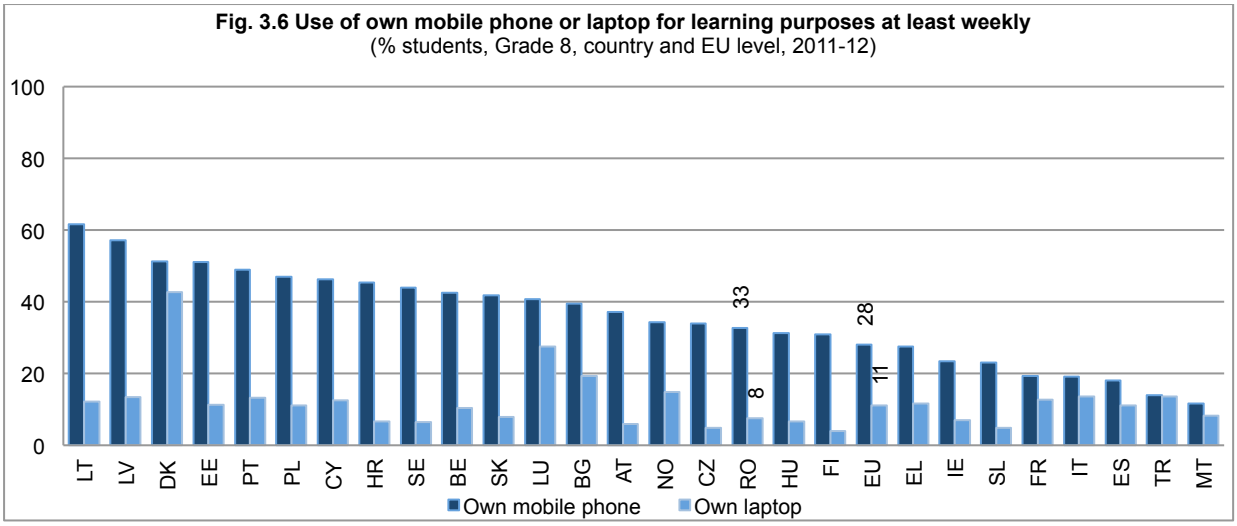
Fig. 3.3: Percentages of students using ICT equipment in class for learning, at least once a week
(Romania and EU, 2011-12)



At grade 8 students' reported use of computers is in the lower half of countries, over 50% saying they use them at least once a week (fig. 3.5) but at grade 11 Romania is among the leading group of countries in this respect. Clearly, Romanian students make heavy use of the equipment available.



Compared to other countries at grade 8 (fig.3.6), students in Romania are average users of their own mobile phone but there is little use of their own laptop in school. At other grades high use of their own mobile phone for learning in class places Romania in the upper half of countries in this respect.



Not surprisingly, students report using interactive whiteboards far less frequently than in other countries. Concerning students' ICT-based activities during lessons, Romania is among the middle-ranking countries as measured by frequency of use (main report, fig. 3.8) at grades 8 and 11 vocational but ninth at grade 11 general.

4. DIGITAL CONFIDENCE

TEACHERS

In Romania teachers' confidence in their operational skills with ICT is in line with the EU mean at all grades (close to 'somewhat'). Their confidence in social media skills is also in line with the EU mean (between 'a little' and 'somewhat'), although slightly higher at grade 4.

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'; Romania and EU; 2011-12)

Fig. 4.1a: grade 4

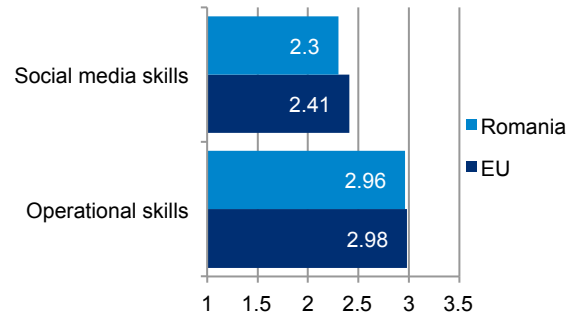


Fig. 4.1b: grade 8

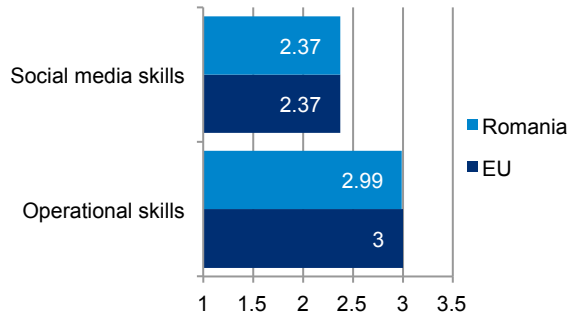


Fig. 4.1c: grade 11 gen.

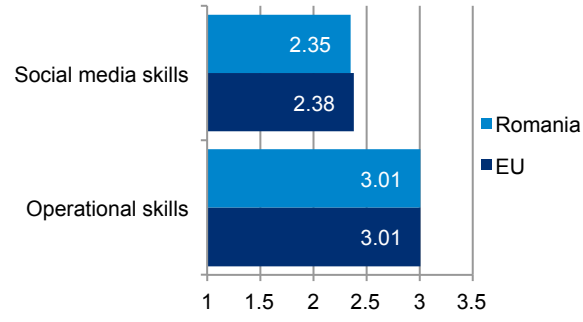
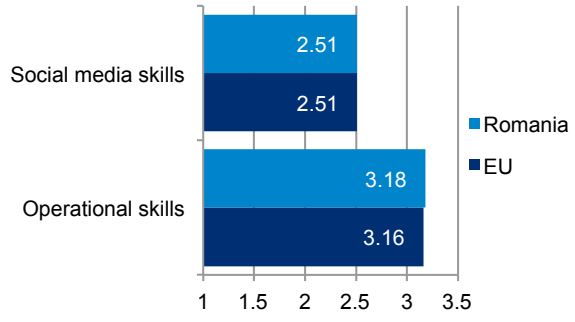


Fig. 4.1d: grade 11 voc.



Comparing confidence levels at grade 8, teachers' confidence in their operational skills places Romania close to the average (fig. 4.1e), as for social media confidence (fig. 4.1f). Other grades are similar (main report, fig. 4.13, 4.14).

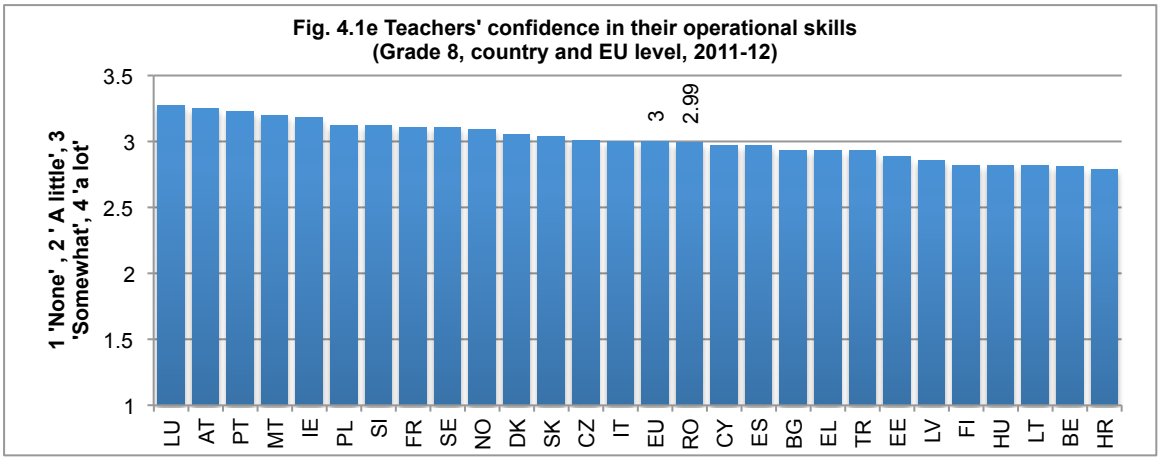


Fig. 4.1e Teachers' confidence in their operational skills
(Grade 8, country and EU level, 2011-12)
1 'None' , 2 ' A little', 3 'Somewhat', 4 'a lot'
3.5
3
2.5
2
1.5
1
3
2.99
LU AT PT MT IE PL SI FR SE NO DK SK CZ IT EU RO CY ES BG EL TR EE LV FI HU LT BE HR

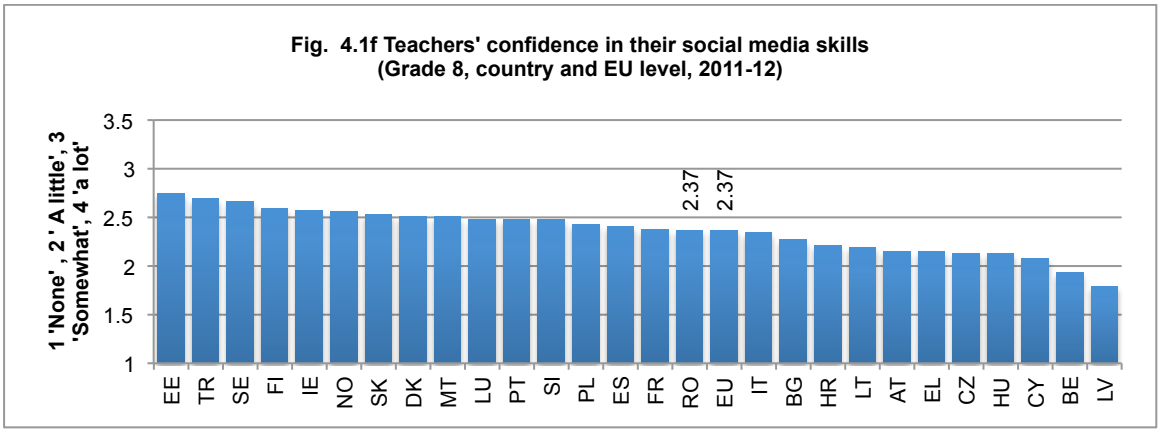


Fig. 4.1f Teachers' confidence in their social media skills
(Grade 8, country and EU level, 2011-12)
1 'None' , 2 ' A little', 3 'Somewhat', 4 'a lot'
3.5
3
2.5
2
1.5
1
2.37
2.37
EE TR SE FI IE NO SK DK MT LU PT SI PL ES FR RO EU IT BG HR LT AT EL CZ HU CY BE LV

STUDENTS

Students were asked to rate their level of confidence in their ability to perform twenty-four (twenty-eight at grade 11 vocational education) ICT related tasks according to a Likert 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 (as found in the teachers' data and comprising the same groups of items) 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.

In Romania students' confidence in their social media and operational ICT skills is slightly below the EU mean (between 'a little' and 'somewhat').

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'; Romania and EU; 2011-12)

Fig. 4.2a: grade 8

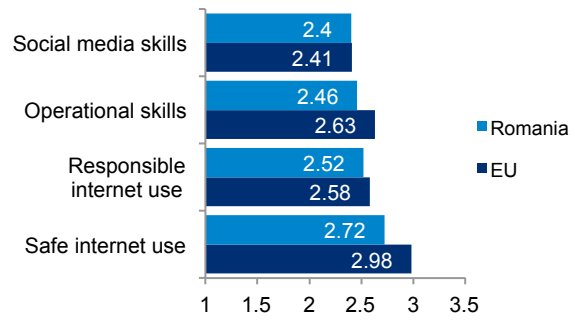


Fig. 4.2b: grade 11 gen.

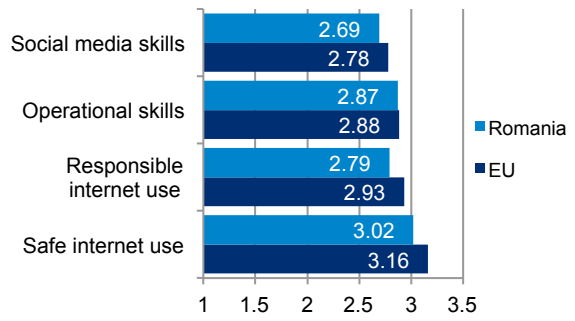
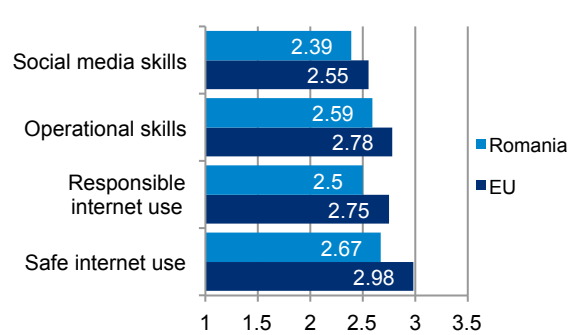
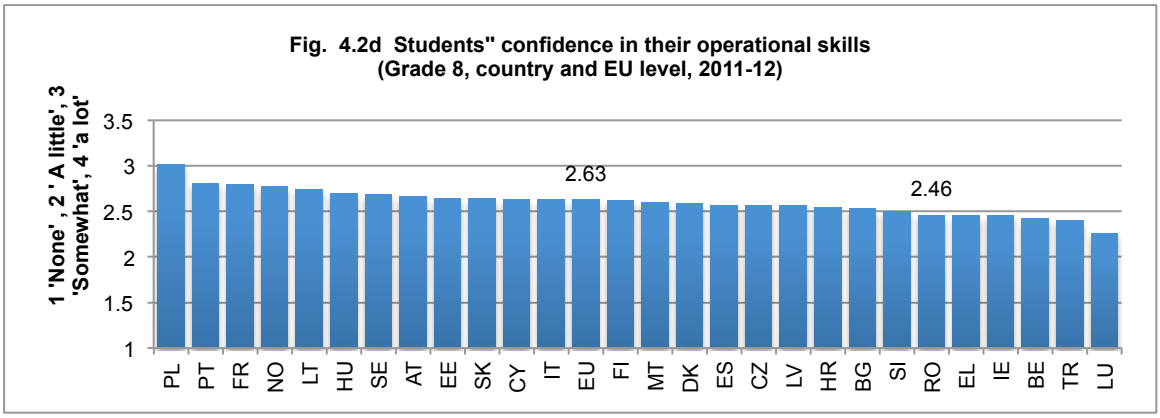
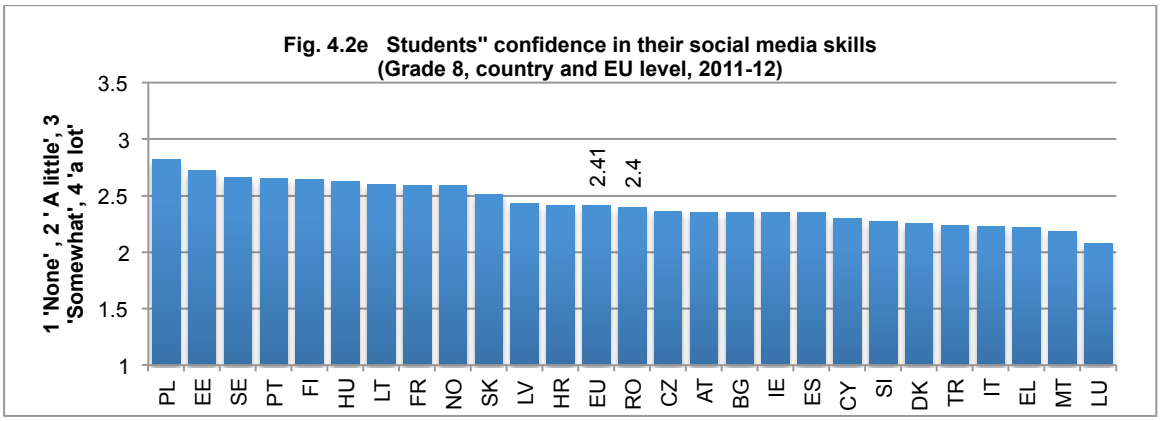


Fig. 4.2c: grade 11 voc.



Confidence in operational skills is below most other countries (fig. 4.2d and main report fig. 4.18), but the close to the mean in social media competence at grade 8 (fig. 4.2e) but lower at other grades.





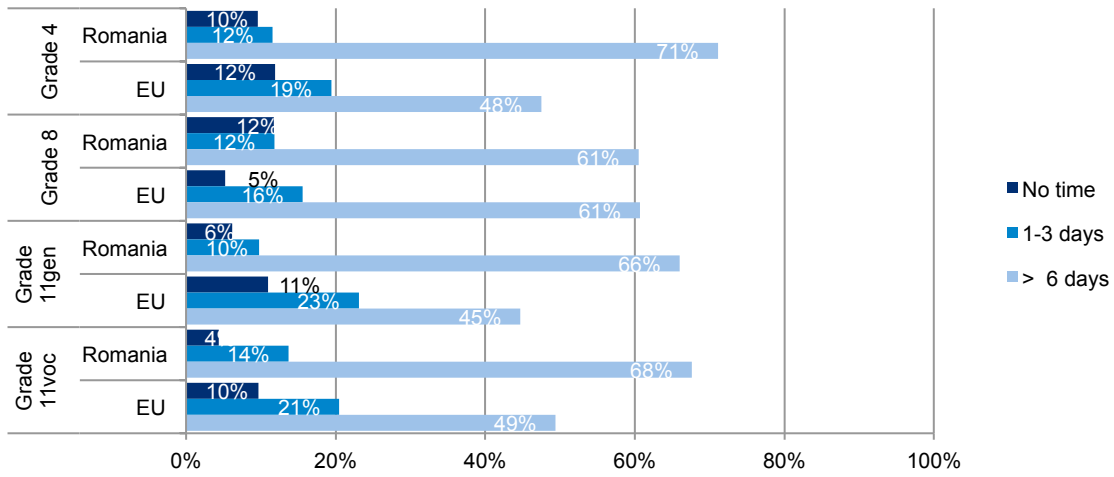
At all grades students in Romania are, on average, well below the EU average in terms of confidence to use the internet safely, and to use it responsibly (main report, fig. 4.16, 4.17).

5. PROFESSIONAL DEVELOPMENT

TIME SPENT ON TRAINING

Generally more students at all grades in Romania are taught by teachers who have invested more than 6 days in professional development activities during the past two years, (generally between 60%-70%) compared to the EU average. Conversely the percentage of students in schools where teachers have spent between 1 and 3 days, or no time on ICT professional development activities is well generally below the EU mean.

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'; Romania and EU; 2011-12)



ENGAGEMENT IN TRAINING

As Fig. 5.2 below shows, in Romania more than the EU average of students – approximately one in three – is in schools where teachers take part in online communities for professional development. High percentages are reported of students taught by teachers who have recently undergone ICT training provided by school staff at grade 11, but grades 4 and 8 grades are below the EU mean.

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

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

Fig. 5.2a: grade 4

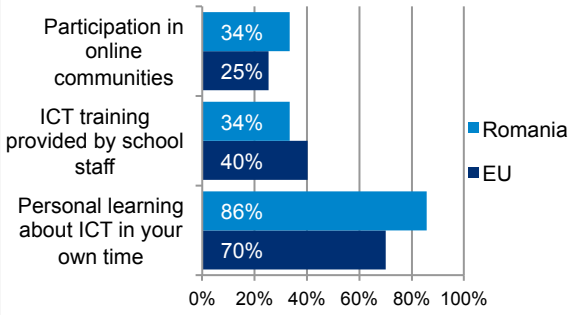


Fig. 5.2b: grade 8

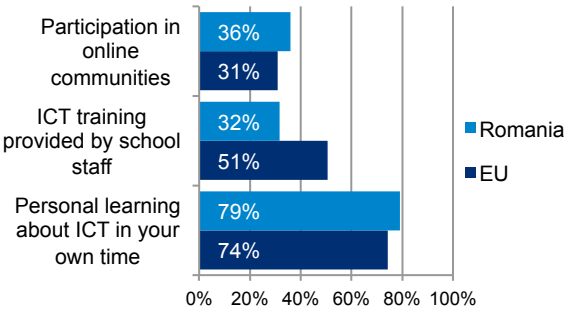


Fig. 5.2c: grade 11 gen.

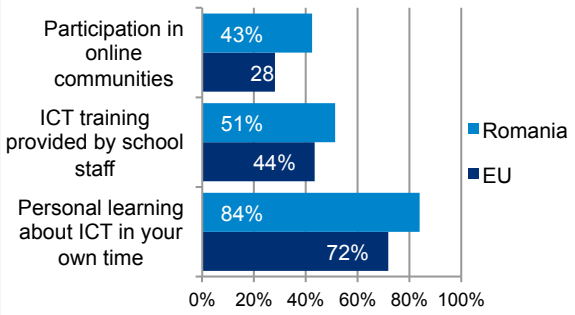


Fig. 5.2d: grade 11 voc.

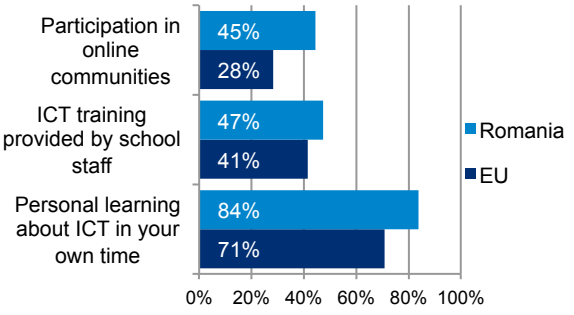
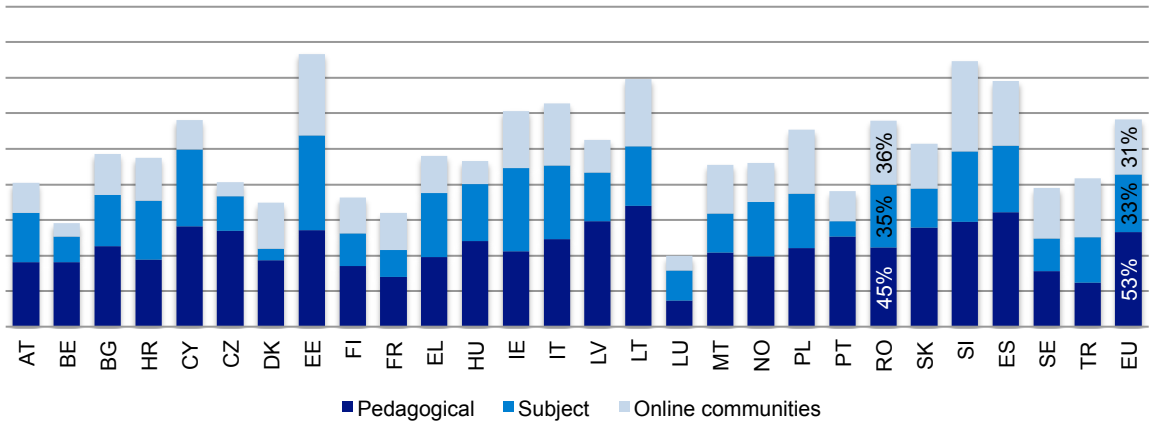


Fig. 5.2e shows that grade 8 teachers in Romania have taken part in professional development in the preceding two years, particularly in online communities.

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



In Romania at all grades percentages of students taught by teachers for whom ICT training is compulsory are second highest in the EU (main report, fig. 4.2), around 60%. As regards involvement in personal learning about ICT in their own time (main report, fig. 4.4), percentages are encouragingly above most other countries at all grades. The percentage of students taught by teachers participating in training provided by school staff is low at grades 4 and 8 but in the middle range of countries at grade 11 (main report, fig.4.5).

Romania ranks in the middle range of countries in terms of percentages of students taught by teachers who have not spent any time on ICT-related professional development activities during the preceding two years (main report, fig. 4.1).

6. SCHOOL SUPPORT MEASURES

In general students in Romania are in schools where above EU averages of ICT strategies are implemented (main report, fig. 5.3), around 30% being in such schools. There are high percentages of students in schools with strategies to support teacher collaboration; Romania ranks first at all grades on this indicator (main report, fig. 5.7). As regards strategies about responsible internet and social media use, Romania is among the middle group of countries on this measure.

Above average percentages of students in Romania are in schools with change management programmes at all grades (main report, fig. 5.14), placing Romania among the leading group of countries in this respect.

ICT COORDINATOR

In Romania, compared to the situation at EU level, fewer students at all grades except grade 11 vocational are in schools where ICT coordinators are provided at a higher level. However more students than the EU mean at all grades are in schools that employ full time ICT coordinators.

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

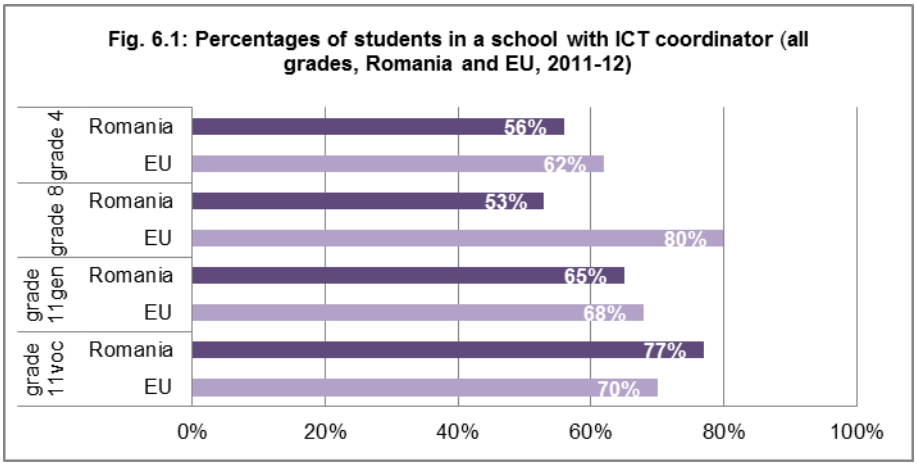
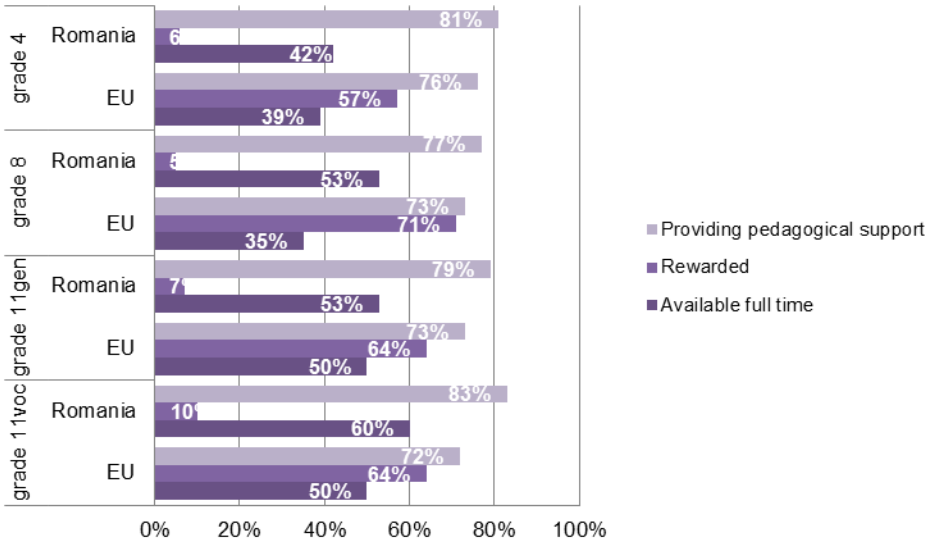


Fig. 6.2: Percentages of students in a school with ICT coordinator available full time, and/or rewarded and/or providing pedagogical support (all grades, Romania and EU, 2011-12)



INCENTIVES

In Romania relatively few students are in schools where there is any form of incentive or reward for using ICT, apart from competitions, which is above the EU average.

Fig. 6.3a: Percentages of students in schools with incentives to reward teachers using ICT in T&L (grade 4; in % of students; Romania and EU; 2011-12)

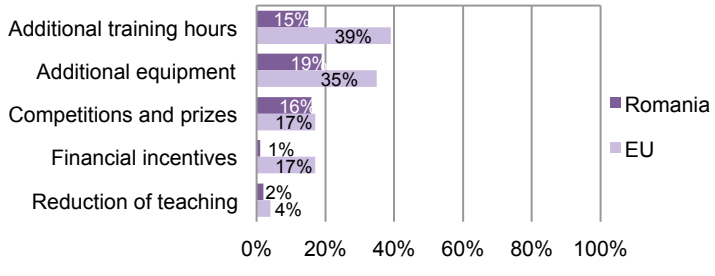


Fig. 6.3b: grade 8

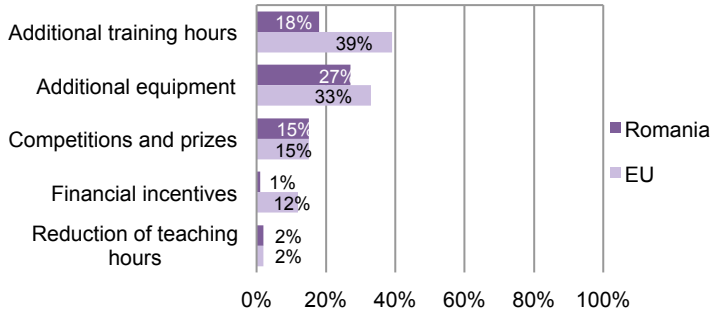


Fig. 6.3c: grade 11 gen.

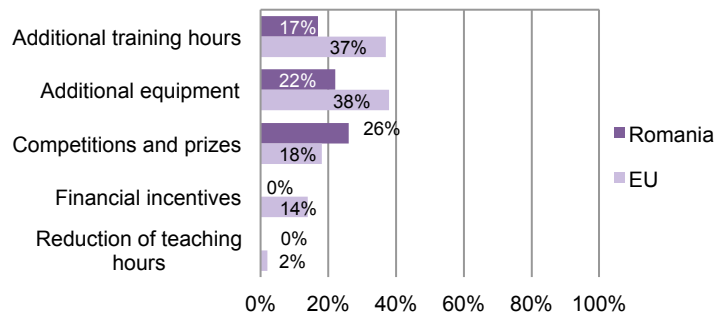
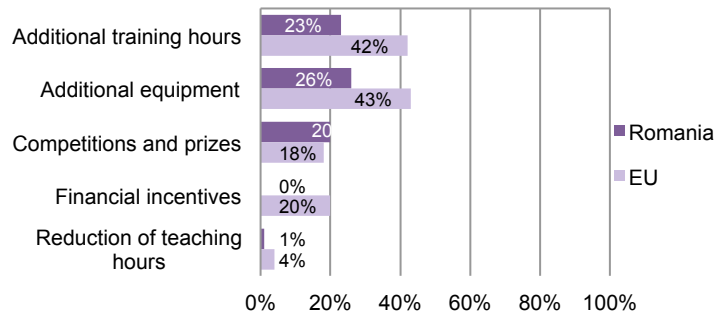


Fig. 6.3d: grade 11 voc.

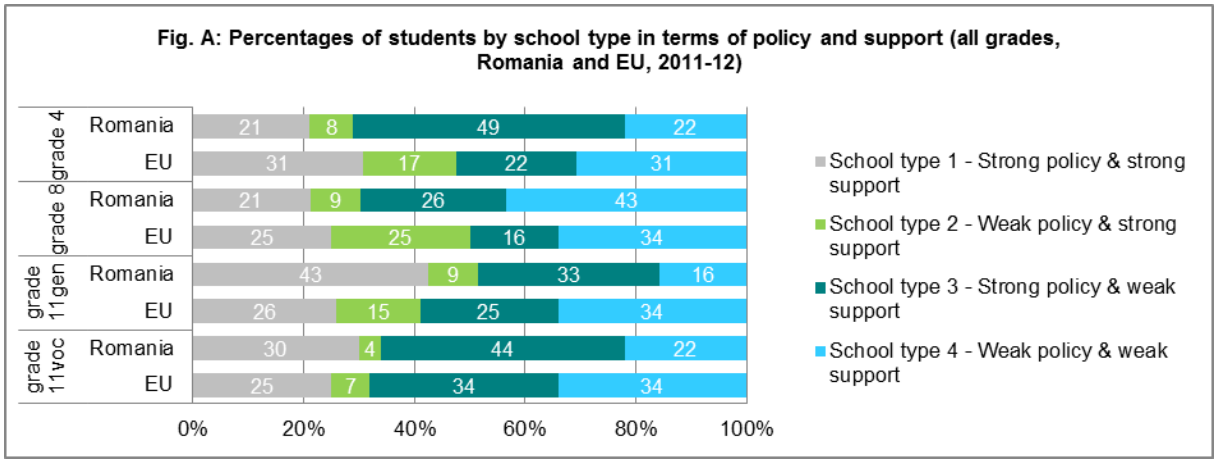


For further details please refer to Section 5 of the survey report.

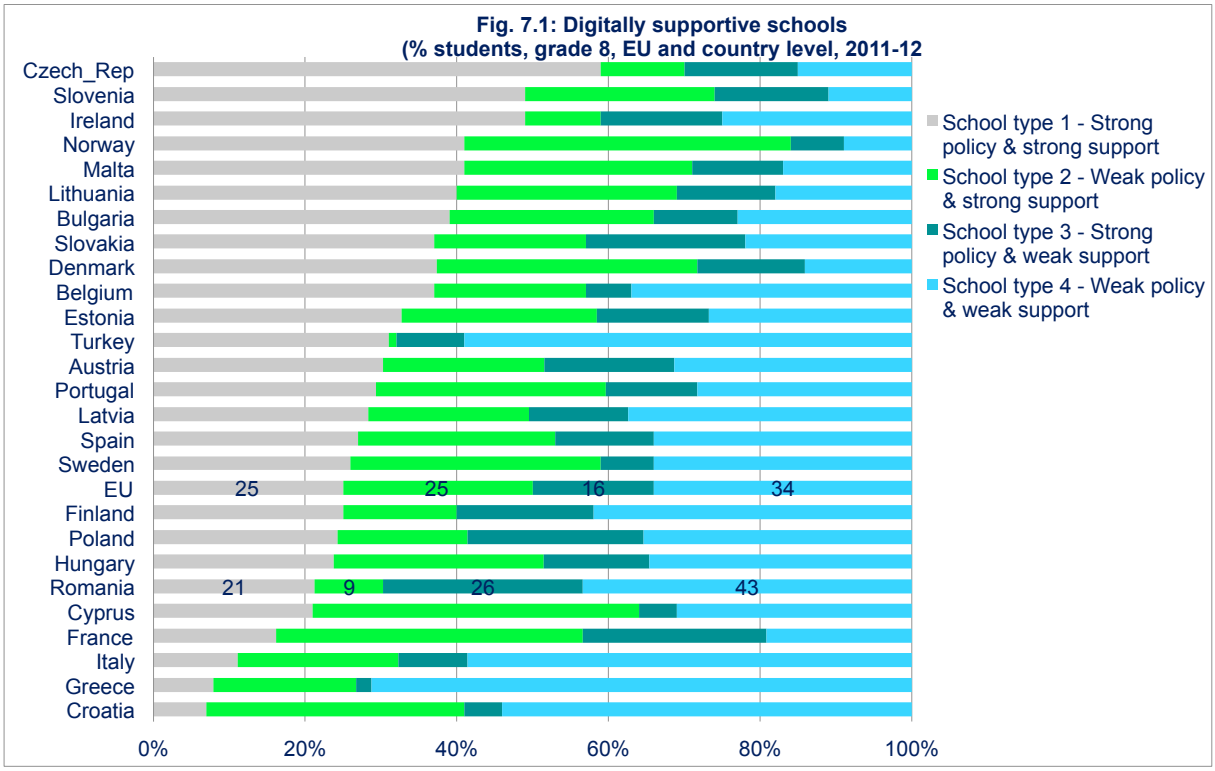
7: CLUSTERS

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 Romania, the percentage of grade 11 students in schools with strong support is above EU averages but below at other grades, at grade 8 the percentage of schools of type 3 is high.



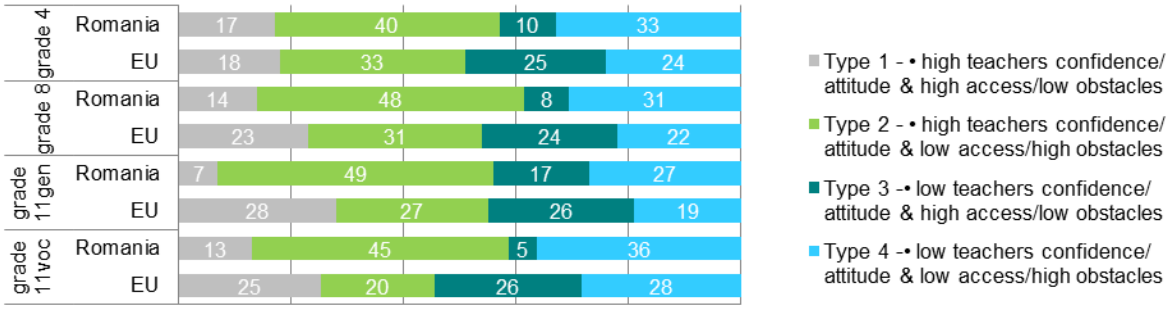
At grade 8 Romania ranks low compared to other countries considering schools with strong policy and strong support (type 1); 30% of students are in schools with strong support (type 1 and type 2). A similar pattern emerges at grade 4, but at grade 11 Romania is in the upper half of countries.



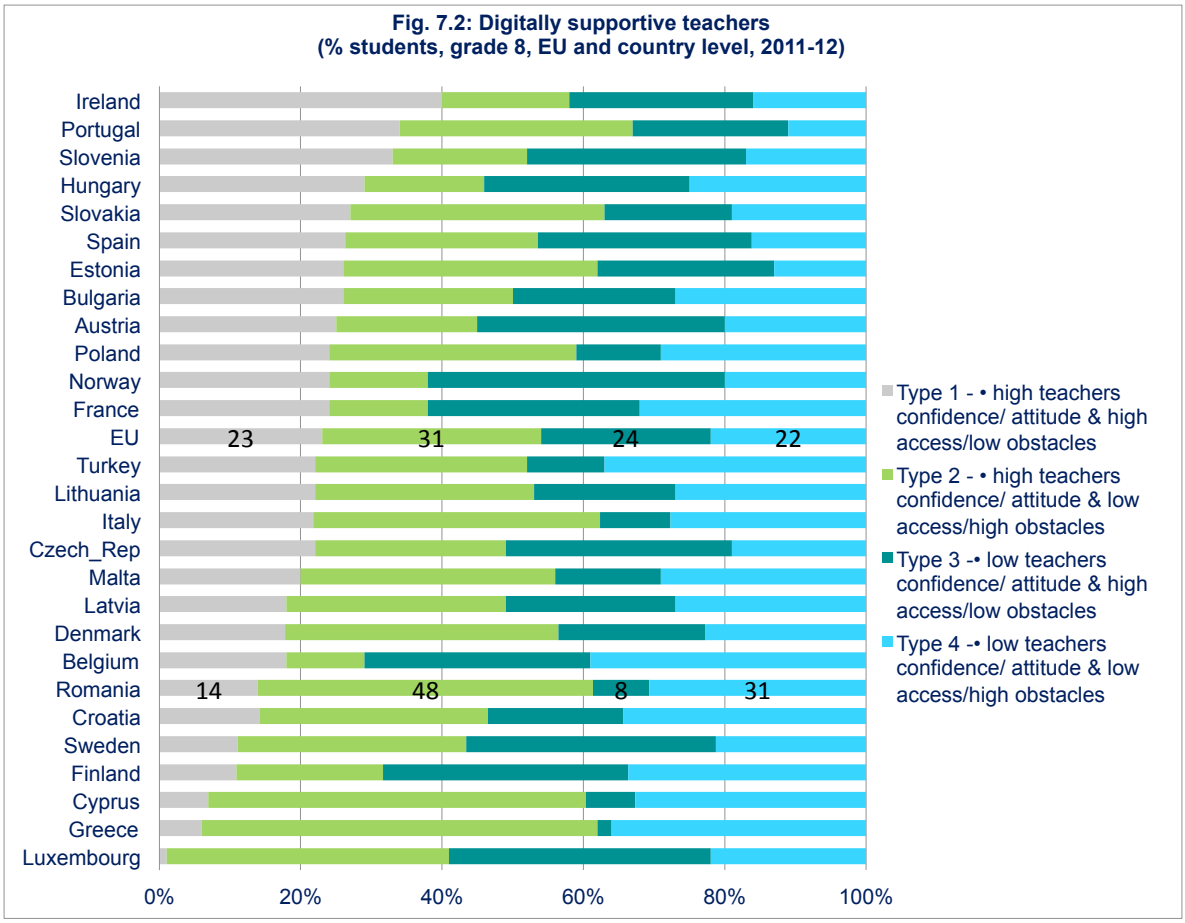
DIGITALLY CONFIDENT AND SUPPORTIVE TEACHERS

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 Romania are below EU averages at all grades, particularly 11 general.

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

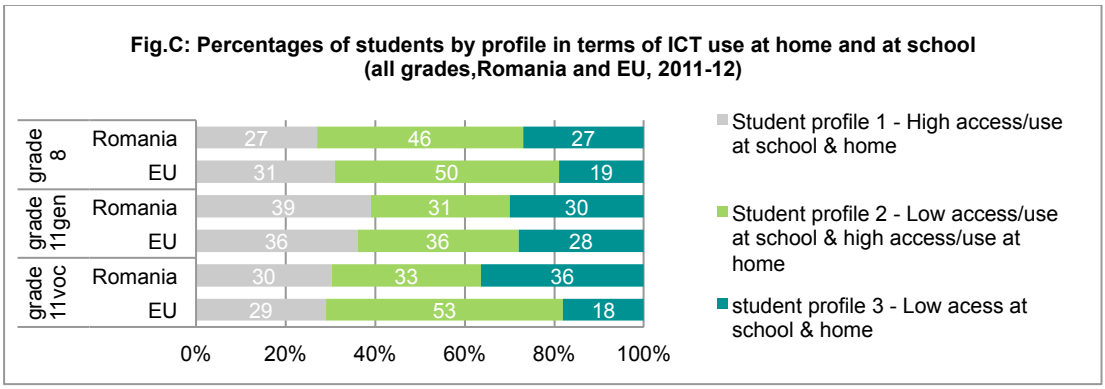


A low percentage of students at grade 8 compared to other countries is in schools with type 1 teachers (fig. 7.2), but over 60% of students are in schools where teachers have high confidence and a positive disposition towards ICT. It is the same at grade 4, but not at grade 11 where Romania ranks amongst the lowest group of countries (main report fig. 8.3).



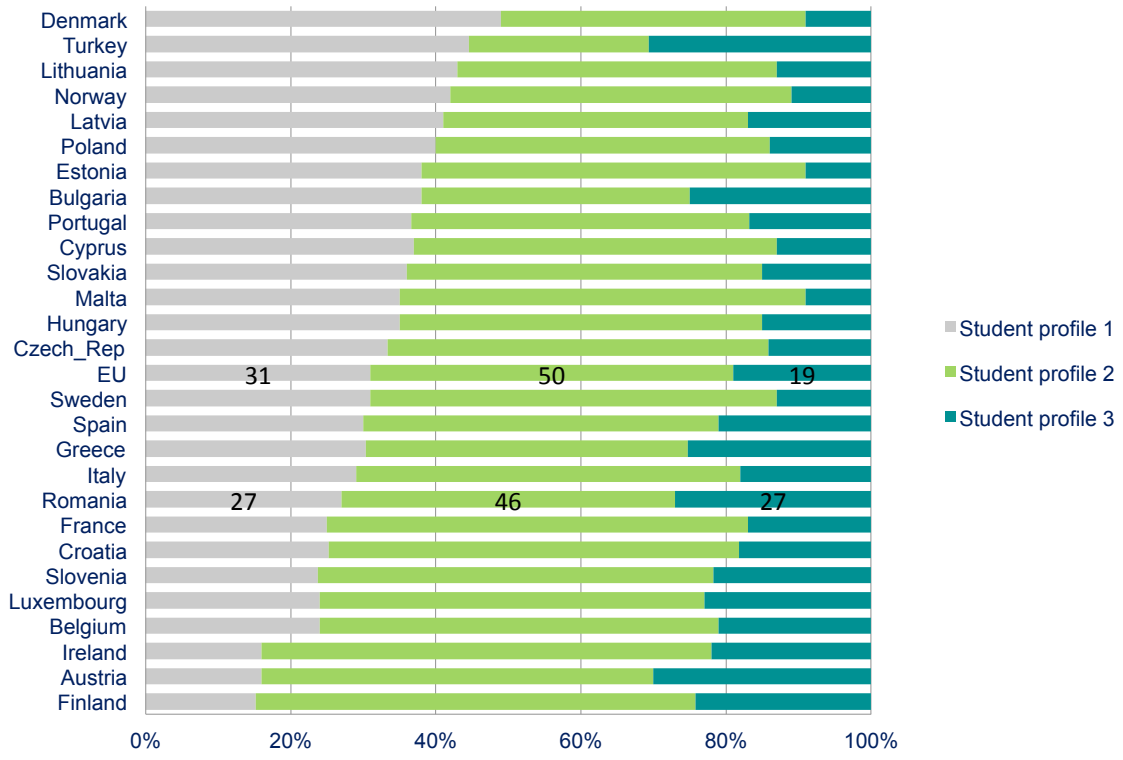
THE DIGITALLY SUPPORTIVE STUDENT

A *digitally supportive student* being defined as having high ICT access and use at school and at home, the percentages of such students in Romania are close to EU means but percentages of students with low access both at home and at school are above other countries', particularly in vocational schools.



On this measure, percentages of type 1 grade 8 students are in the lower third of countries (fig. 7.3) but at grade 11 Romania is amongst the middle group of countries (main report fig. 8.5).

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 Romania, relatively few students are in type 1 schools at, particularly at grades 4 and 8 and many in type 3 schools.

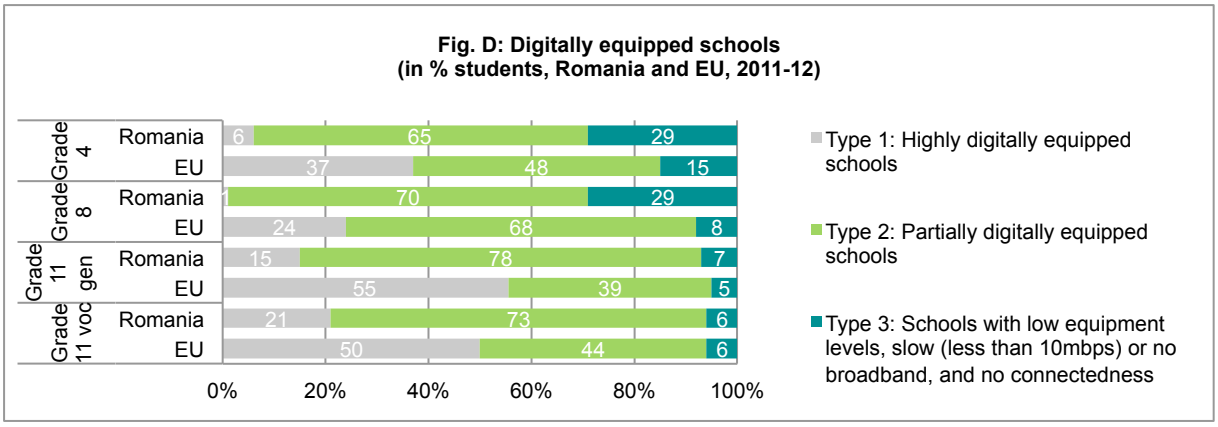
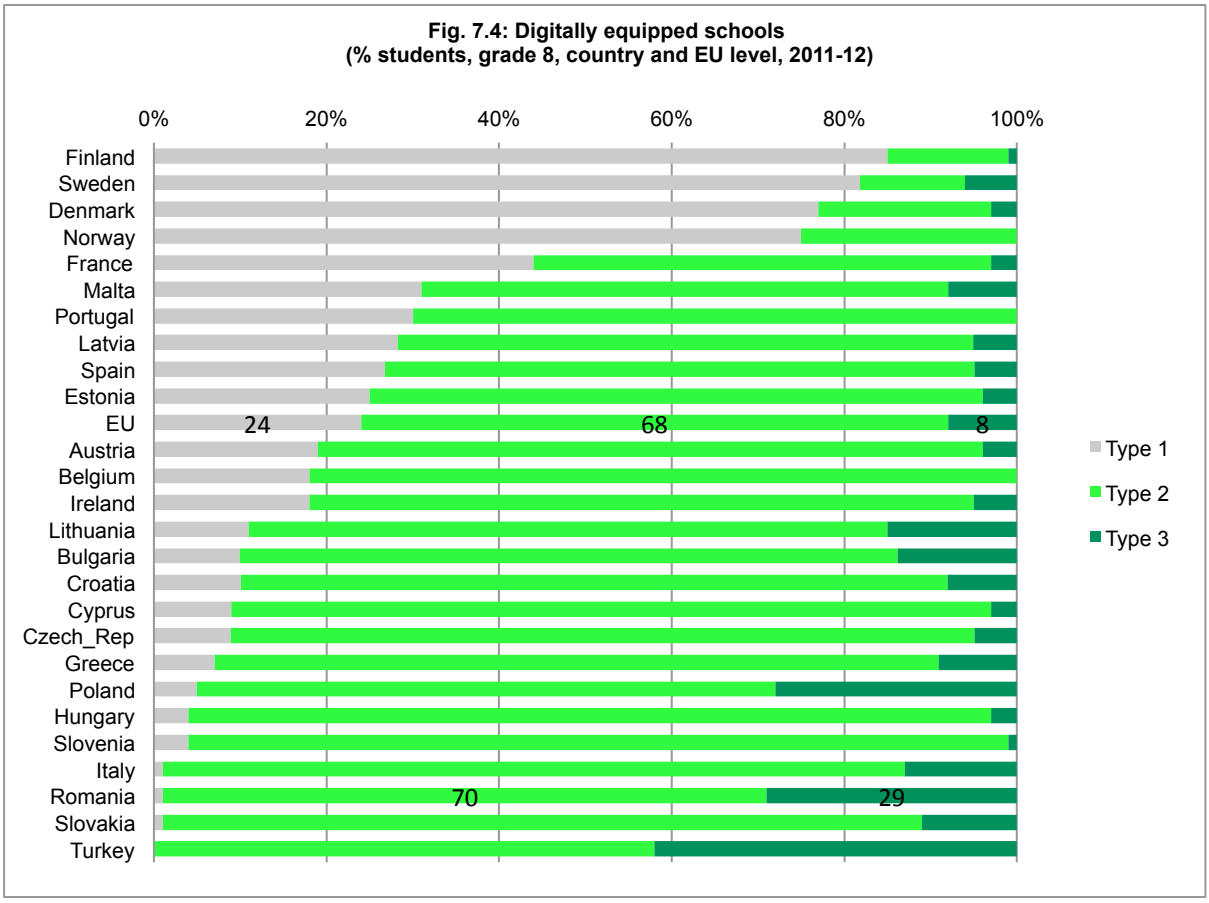


Fig. 7.4 shows how Romania compares with other countries at grade 8 on this measure. Very few students are in type 1 schools compared to other countries and large numbers are in type 2 relative to other countries. The situation is similar at other grades (main report fig. 1.13).



CONCLUSION

Students in Romania are in schools where broadband speeds above 10 mbps are close to or above the EU mean but there is less equipment than elsewhere in Europe and many younger students are in schools with no 'connectedness'. Nevertheless teachers appear to be making relatively intensive use of ICT in class, as do students, particularly at grade 11, perhaps as a result of quite high levels of ICT training and support for teachers and widespread positive attitudes towards ICT. Both teachers' and students' confidence levels in their ICT skills are below EU means.

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.

ANNEX

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
Romania	5.8	(0.3)	7.7	(0.4)	10.0	(0.5)	10.0	(0.5)
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	SE5	From30to100	SE6	MoreThan100	SE7
1. Grade4	Romania	9.0%	(2.3)	7.6%	(2.1)	21.2%	(3.3)	22.1%	(3.4)	21.7%	(3.3)	15.0%	(2.9)	3.3%	(1.5)
	EU	8.0%	(1.3)	16.5%	(2.3)	21.4%	(2.4)	22.1%	(2.2)	19.5%	(2.2)	8.6%	(1.4)	4.0%	(1.3)
2. Grade8	Romania	6.3%	(2.1)	13.3%	(2.8)	16.7%	(3.2)	29.3%	(3.8)	16.9%	(3.2)	12.7%	(2.8)	4.7%	(1.7)
	EU	5.0%	(0.8)	9.6%	(1.3)	19.1%	(2.3)	27.7%	(2.4)	24.8%	(2.3)	8.6%	(1.6)	5.2%	(1.2)
3. Grade11gen	Romania	4.1%	(1.7)	2.3%	(1.3)	16.6%	(3.2)	23.8%	(3.7)	28.6%	(3.9)	16.7%	(3.2)	8.0%	(2.3)
	EU	3.7%	(1.3)	6.2%	(0.8)	18.0%	(2.8)	23.2%	(3.0)	25.4%	(3.9)	13.3%	(2.6)	10.3%	(8.0)
4. Grade11voc	Romania	2.5%	(1.4)	7.7%	(2.4)	13.7%	(3.1)	25.0%	(4.0)	30.6%	(4.8)	15.5%	(3.4)	5.0%	(2.0)
	EU	6.5%	(1.8)	6.2%	(1.3)	15.2%	(3.0)	21.2%	(2.6)	24.2%	(4.6)	15.7%	(7.1)	10.9%	(5.3)

Fig. 2.5
Connectedness

Level	COUNTRY	SchWebsite	SE1	VLE	SE2	NoConnect	SE3
1. Grade4	Romania	56.9%	(4.0)	28.3%	(3.7)	30.2%	(3.8)
	EU	69.7%	(3.6)	26.8%	(2.0)	15.9%	(2.2)
2. Grade8	Romania	57.9%	(4.1)	31.7%	(3.9)	31.5%	(4.0)
	EU	86.0%	(1.6)	61.4%	(3.0)	8.4%	(1.2)

Level	COUNTRY	SchWebsite	SE1	VLE	SE2	NoConnect	SE3
3. Grade11gen	Romania	87.8%	(2.8)	48.3%	(4.4)	7.7%	(2.4)
	EU	91.7%	(3.1)	61.0%	(7.9)	7.0%	(2.9)
4. Grade11voc	Romania	82.2%	(4.3)	54.8%	(4.9)	5.9%	(2.2)
	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	Romania	1.7%	(1.0)	8.5%	(2.2)	18.6%	(3.1)	22.1%	(3.3)	16.5%	(2.9)
	EU	3.0%	(0.4)	10.0%	(2.4)	13.9%	(1.4)	18.0%	(1.8)	19.1%	(2.1)
2. Grade8	Romania	2.6%	(0.9)	7.7%	(1.3)	23.2%	(2.3)	20.6%	(2.2)	19.3%	(2.0)
	EU	7.4%	(1.0)	6.8%	(0.8)	14.7%	(0.9)	20.7%	(1.2)	18.9%	(1.4)
3. Grade11gen	Romania	5.0%	(1.3)	8.0%	(1.5)	17.8%	(2.0)	19.9%	(2.2)	20.3%	(2.1)
	EU	7.0%	(1.0)	8.1%	(1.4)	14.9%	(1.4)	22.9%	(3.8)	17.1%	(1.8)
4. Grade11voc	Romania	12.1%	(2.0)	10.8%	(2.4)	21.7%	(2.4)	17.3%	(2.1)	17.0%	(2.0)
	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
15.1%	(2.8)	10.0%	(2.3)	7.5%	(2.1)
20.7%	(2.7)	8.7%	(1.4)	6.7%	(1.4)
11.6%	(1.7)	11.6%	(1.8)	3.4%	(1.0)
14.4%	(1.0)	11.0%	(1.0)	6.1%	(0.8)
10.7%	(1.5)	13.8%	(1.8)	4.3%	(1.2)
14.0%	(1.5)	10.3%	(1.4)	5.7%	(0.9)
12.5%	(1.9)	5.7%	(1.5)	2.9%	(0.9)
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
Romania	31.1%	(3.8)	34.7%	(2.8)	32.3%	(2.7)	45.9%	(3.1)
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	Romania	32.7	(1.7)	7.5	(0.7)	50.4	(2.1)
	EU	28.0	(0.8)	11.2	(0.7)	53.3	(1.1)
2. Grade11gen	Romania	52.9	(1.3)	9.6	(0.8)	70.4	(1.2)
	EU	34.6	(1.3)	10.7	(1.1)	50.5	(1.5)
3. Grade11voc	Romania	49.6	(1.8)	10.6	(0.9)	69.5	(1.5)

Level	Country	OwnMobPhone	SE1	OwnLaptop	SE2	SchoolComputer	SE3
	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
Romania	1.56	(0.02)	1.75	(0.02)	1.68	(0.02)
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	Romania	2.29	(0.07)	2.96	(0.06)
	EU	2.41	(0.03)	2.98	(0.02)
2. Grade8	Romania	2.37	(0.05)	2.99	(0.04)
	EU	2.37	(0.04)	3.00	(0.03)
3. Grade11gen	Romania	2.35	(0.05)	3.01	(0.04)
	EU	2.38	(0.07)	3.01	(0.03)
4. Grade11voc	Romania	2.51	(0.06)	3.18	(0.04)
	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	Romania	2.40	(0.04)	2.46	(0.04)	2.52	(0.04)	2.72	(0.04)
	EU	2.41	(0.02)	2.63	(0.02)	2.58	(0.02)	2.98	(0.02)
2. Grade11gen	Romania	2.69	(0.03)	2.87	(0.02)	2.79	(0.03)	3.02	(0.03)
	EU	2.78	(0.02)	2.88	(0.01)	2.93	(0.03)	3.16	(0.02)
3. Grade11voc	Romania	2.39	(0.03)	2.58	(0.02)	2.49	(0.03)	2.66	(0.03)
	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	Romania	71.1%	(3.6)	11.6%	(2.5)	9.6%	(2.3)
	EU	47.5%	(4.2)	19.4%	(3.0)	11.9%	(2.4)
2. Grade8	Romania	60.5%	(2.7)	11.8%	(1.7)	11.7%	(1.6)
	EU	60.7%	(1.6)	15.6%	(1.0)	5.2%	(0.5)
3. Grade11gen	Romania	66.0%	(2.5)	9.8%	(1.6)	6.2%	(1.2)
	EU	44.7%	(5.2)	23.1%	(3.4)	11.0%	(1.6)
4. Grade11voc	Romania	67.6%	(2.8)	13.7%	(2.0)	4.4%	(1.2)
	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	Romania	33.5%	(3.8)	33.5%	(3.9)	85.6%	(2.8)
	EU	25.4%	(2.5)	40.3%	(3.2)	70.0%	(2.8)
2. Grade8	Romania	36.0%	(2.7)	31.6%	(2.8)	79.2%	(2.2)
	EU	30.8%	(1.6)	50.5%	(1.7)	74.2%	(1.3)
3. Grade11gen	Romania	42.5%	(2.7)	51.2%	(3.1)	84.0%	(1.8)
	EU	28.0%	(2.4)	43.5%	(2.2)	71.7%	(2.2)
4. Grade11voc	Romania	44.5%	(2.8)	47.4%	(3.2)	83.7%	(2.3)
	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
Romania	56.2%	(4.0)	53.5%	(4.2)	65.0%	(4.1)	76.7%	(4.5)
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	Romania	41.9%	(5.4)	5.9%	(2.6)	80.6%	(4.3)
	EU	39.3%	(3.0)	56.5%	(3.0)	75.9%	(2.3)
2. Grade8	Romania	53.3%	(5.8)	4.8%	(2.4)	77.1%	(4.9)
	EU	34.8%	(2.9)	70.6%	(2.4)	72.5%	(2.5)
3. Grade11gen	Romania	52.7%	(5.4)	6.7%	(2.7)	78.8%	(4.5)
	EU	49.6%	(6.9)	63.6%	(7.7)	73.4%	(4.2)
4. Grade11voc	Romania	60.3%	(5.2)	9.9%	(3.2)	83.0%	(3.9)
	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	Romania	15.3%	(2.9)	18.7%	(3.2)	16.5%	(3.0)	0.7%	(0.1)	1.8%	(1.1)	23.3%	(3.6)
	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	Romania	18.2%	(3.2)	26.9%	(3.7)	15.1%	(3.0)	0.7%	(0.1)	2.0%	(1.1)	21.8%	(3.7)
	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	Romania	17.4%	(3.3)	22.2%	(3.5)	25.9%	(3.8)	0.0%	(0.0)	0.0%	(0.0)	29.5%	(4.1)
	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	Romania	22.7%	(3.9)	26.1%	(4.7)	19.9%	(3.8)	0.0%	(0.0)	0.8%	(0.1)	24.4%	(4.2)
	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	Romania	21	(3.30)	8	(2.23)	49	(4.04)	22	(3.34)
	EU	31	(2.70)	17	(3.17)	22	(2.53)	31	(2.98)
2. Grade8	Romania	21	(3.38)	9	(2.51)	26	(3.64)	43	(4.17)
	EU	25	(1.91)	25	(2.20)	16	(1.83)	34	(2.15)
3. Grade11gen	Romania	43	(4.25)	9	(2.48)	33	(4.03)	16	(3.14)
	EU	26	(2.28)	15	(8.69)	25	(3.74)	34	(5.30)
4. Grade11voc	Romania	30	(4.31)	4	(1.75)	44	(4.76)	22	(4.55)
	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	Romania	17	(2.94)	40	(3.86)	10	(2.36)	33	(3.72)
	EU	18	(2.02)	33	(2.95)	25	(2.33)	24	(2.64)
2. Grade8	Romania	14	(1.96)	48	(2.81)	8	(1.51)	31	(2.54)
	EU	23	(1.43)	31	(1.27)	24	(1.52)	22	(1.17)
3. Grade11gen	Romania	7	(1.36)	49	(2.80)	17	(1.89)	27	(2.40)
	EU	28	(2.41)	27	(2.68)	26	(1.65)	19	(1.67)
4. Grade11voc	Romania	13	(2.18)	45	(3.01)	5	(1.19)	36	(2.93)
	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	Romania	27	(1.66)	46	(1.71)	27	(2.04)
	EU	31	(1.00)	50	(0.85)	19	(0.67)
2. Grade11gen	Romania	39	(1.27)	31	(1.23)	30	(1.43)
	EU	36	(1.18)	36	(1.00)	28	(1.47)
3. Grade11voc	Romania	30	(1.39)	33	(1.61)	36	(1.78)
	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	Romania	6	(1.89)	65	(3.83)	29	(3.64)
	EU	37	(4.43)	48	(4.15)	15	(2.12)
2. Grade8	Romania	70	(3.76)	1	(0.05)	29	(3.73)
	EU	68	(2.87)	24	(3.31)	8	(1.16)
3. Grade11gen	Romania	15	(2.98)	78	(3.49)	7	(2.16)
	EU	55	(12.27)	39	(10.34)	5	(2.06)
4. Grade11voc	Romania	6	(2.21)	21	(3.77)	73	(4.15)

Level	COUNTRY	Type1	SE1	Type2	SE2	Type3	SE3
	EU	6	(1.88)	50	(13.83)	44	(12.07)

NOTES

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 Romania 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 Romania participation levels are well above the EU mean, a total of 685 schools in Romania taking part.

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