European Schoolnet

University of Liege
Psychology and
Education

SURVEY OF SCHOOLS: ICT IN EDUCATION

COUNTRY PROFILE: SLOVAKIA

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1. INTRODUCTION

ICT IN THE SCHOOL EDUCATION SYSTEM OF SLOVAKIA

In Slovakia[1] the central body of state administration in education is the ministry of Education, Science, Research and Sport of the Slovak Republic. Pre-primary education is considered to be the first level of the education system and caters for children from 3 to 6 years of age. Primary and lower secondary education is organised as a single structured system, beginning at the age of six and consisting of nine years. The compulsory schooling takes ten years and pupils complete it by finishing the first year of upper secondary education at secondary school. In secondary schools the teaching is carried out according to the educational plans and curriculum that are issued by the ministry although methods in the teaching process are chosen by teachers themselves.

According to Eurydice's **Key Data on Learning and Innovation through ICT at school in Europe**[2], in Slovakia there are national strategies covering training measures and research projects in the areas[3] of ICT in schools, e-learning, and e-skills development and research projects in digital/media literacy. There are central steering documents for all ICT learning objectives[4] at both primary and secondary education level except for developing programming skills and using social media which is only at secondary level. 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, and in secondary schools ICT is also included within technology as a subject. At primary and secondary education level support is provided in all ICT hardware areas, except for virtual learning environments, and for all ICT software categories[5]. According to official steering documents, both students and teachers at primary and secondary level are expected to use ICT in class in all subjects. There are central recommendations on the use of ICT in student assessment for interactive testing. Public-private partnerships for promoting the use of ICT are encouraged for private funding for hardware and software in schools.

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 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

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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/

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.

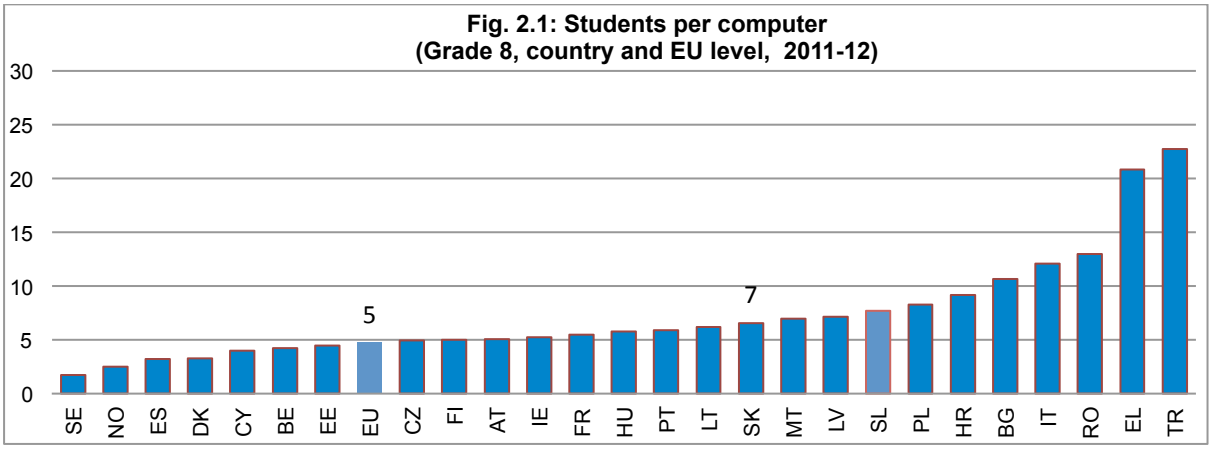
The full report, country profiles, background information, questionnaires, tables, details of the methodology and the raw data are freely available at https://ec.europa.eu/digital-agenda/en/pillar-6-enhancing-digital-literacy-skills-and-inclusion. The authors may be contacted at essie-eu@eun.org and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

2. ICT INFRASTRUCTURE

AVAILABILITY OF COMPUTERS FOR EDUCATIONAL PURPOSES

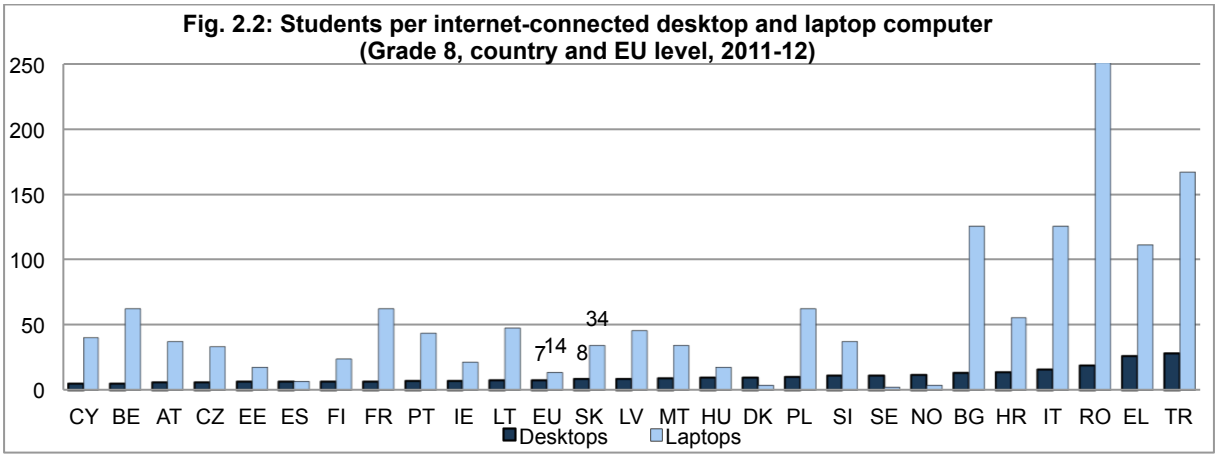
A computer is defined as a desktop or laptop, netbook or tablet computer, whether or not connected to the internet, available for educational purposes in school. In Slovakia there are fewer computers for all grade students than the EU average, and provision is consistent all levels. In most countries the older the student the more the computers, and this trend is also reflected in Slovakia at grade 11 vocational. Fig. 2.1 shows that at grade 8 Slovakia is in the middle group of countries on this indicator with 7 students per computer, and the position is similar at other grades (main report, fig. 1.1).

Fig. 2.1: Students per computer
(Grade 8, country and EU level, 2011-12)



As for computers connected to the internet in schools, in Slovakia there are above the EU average for desktop computers at grade 4, with all other grade students close to the EU average. There are however fewer laptops, particularly at grade 11 vocational. At grade 8 (fig. 2.2) Slovakia is in the middle range of countries as regards students per desktop computer, and also for laptops (main report, fig. 1.2).

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



Computers are much more frequently to be found in computer labs than classrooms in Slovakia (main report, fig. 1.3). Slovakia is close to the EU average of 76% of students in schools where over 90% of computers are operational (main report, fig. 1.4).

With around 120 students per interactive whiteboard at grades 4, 8 and 11 general, Slovakia is in the middle range of countries on this measure (main report, fig. 1.5), as it is also in terms of students per

data projector (13:1, main report, fig. 1.6). Maintenance of ICT equipment is very much a task for school personnel, over 50% of students in schools where this is the case, more so than in other countries (main report, fig. 1.12).

BROADBAND

In Slovakia all students are in schools with broadband at all grades. Generally though higher percentages of students are in schools with lower than EU average broadband speeds, the majority at all grades except grade 11 under 5mbps. However more students in schools at grade 11 general have access to over 100mbps broadband than the EU mean.

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

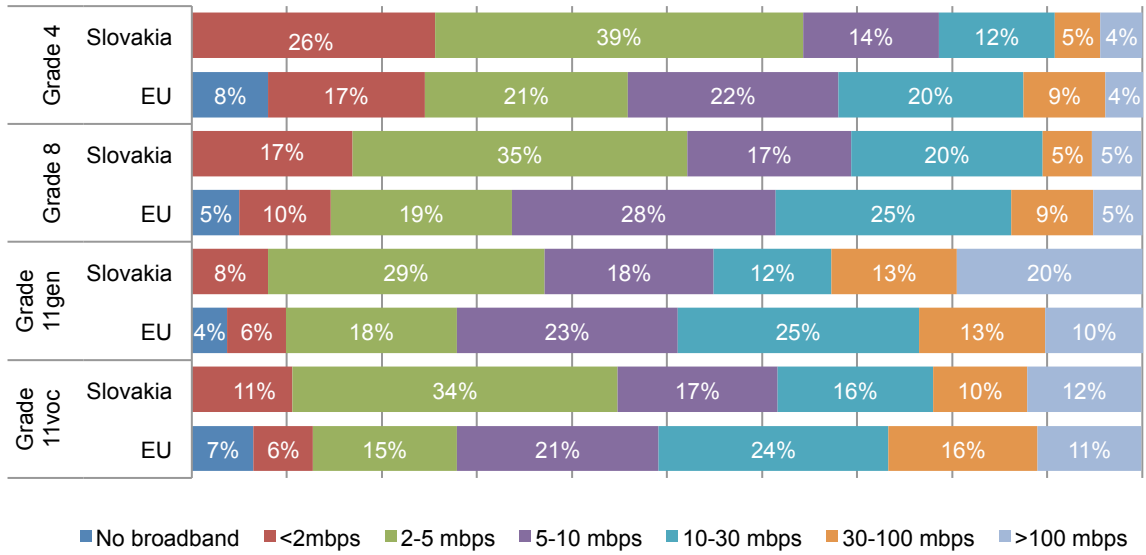
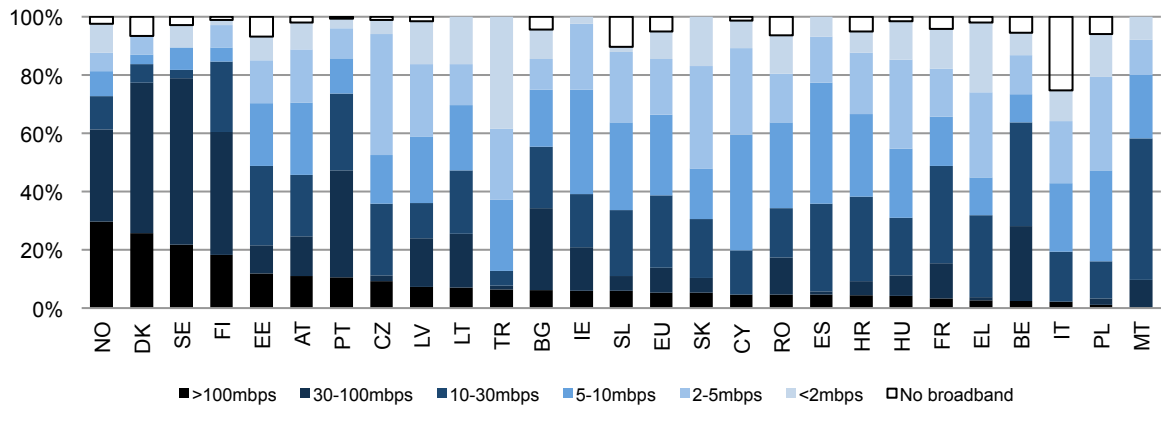


Fig. 2.4 shows how Slovakia compares with other countries at grade 8: a low percentage of students in schools with no broadband but most in schools with under 10mbps, typical of most countries. At grade 11 (main report, fig. 1.8) speed tends to be faster, Slovakia ranking sixth for percentage of students in grade 11 general schools with faster than 100mbps.

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

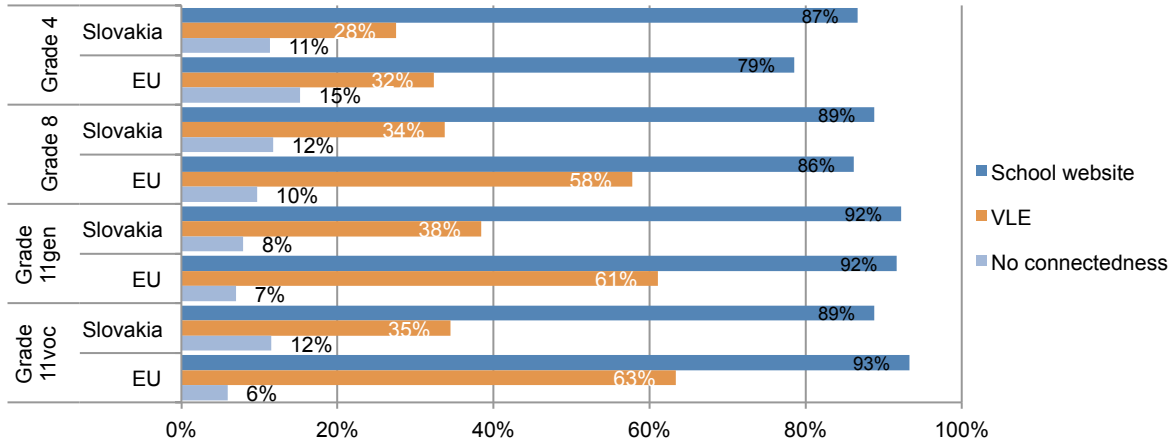


There are significant positive correlations between the population size of the school's locality and broadband speed in Slovakia at grade 11 (main report, section), faster broadband tending to be found in schools in more densely populated areas.

'CONNECTEDNESS'

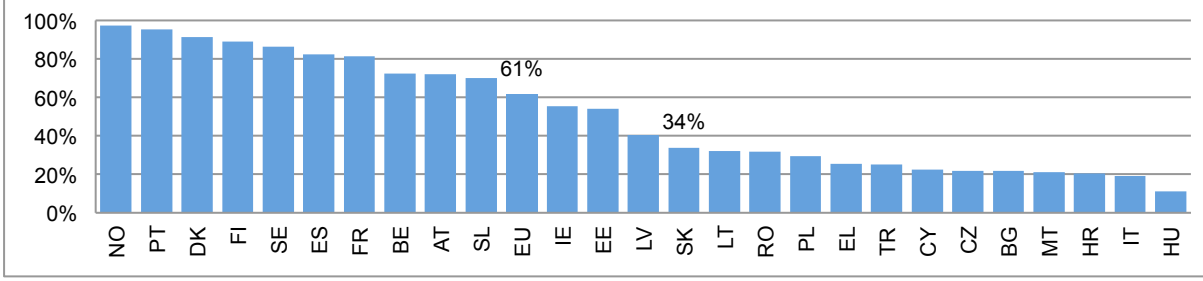
Percentages of students in schools that have 'connected' characteristics, e.g. having a website or a virtual learning environment (VLE) are shown below, as well as those with none of these items. In Slovakia, a higher percentage of students than the EU mean are in schools with a website at grades 4 and 8, but less in schools with a virtual learning environment, most notably at grade 11. 'Unconnected' schools are close to the EU average.

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



Slovakia ranks in the lower half of countries as regards virtual learning environments at grade 8, as seen in fig. 2.6, and the same is true at other grades (main report fig. 1.10), few offering external access.

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 Slovakia use of ICT by teachers is higher at all grades with considerably more teachers using ICT in more than 25% of lessons than the EU average. The most intense use is at grade 11 vocational where close to a third use ICT with their students in more than 75% of lessons.

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

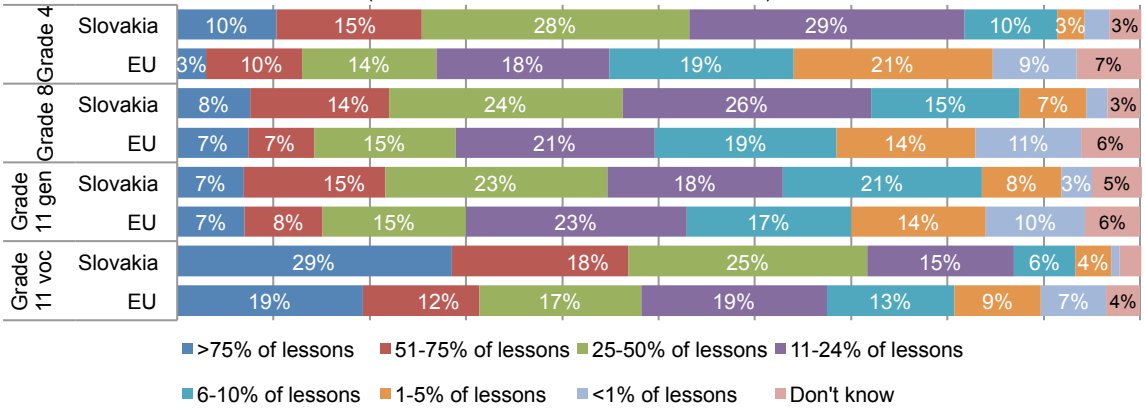


Fig. 3.2: Teachers' use of ICT in more than 25% of lessons
(% schools, Slovakia and EU, 2011-12)

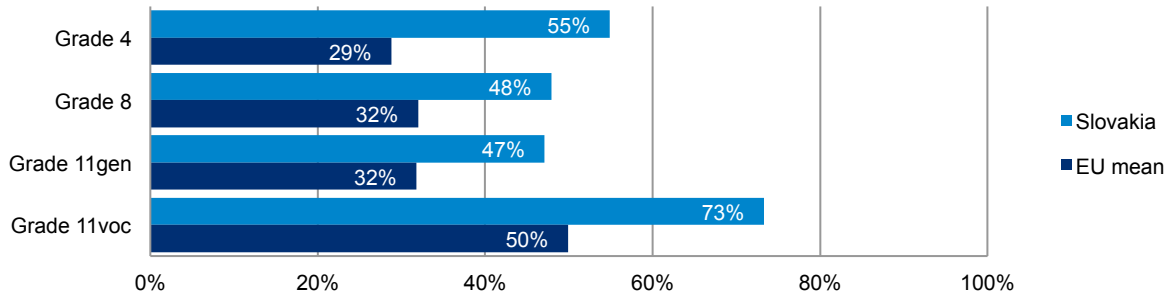
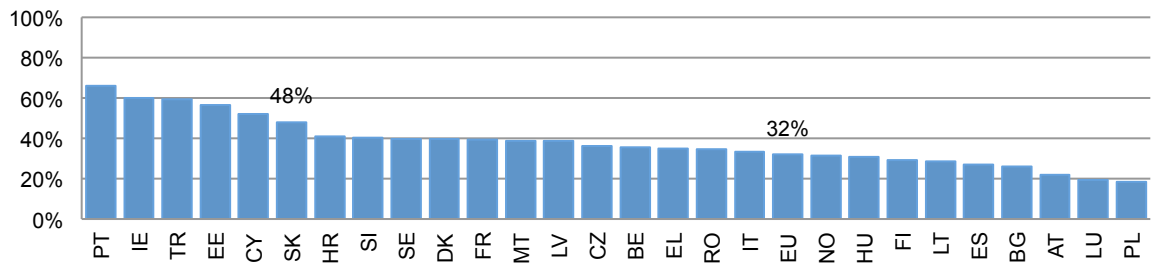


Fig 3.3 shows Slovakia ranks sixth at grade 8 and in the leading group of countries at other grades (main report, fig. 2.2) on this important indicator.

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

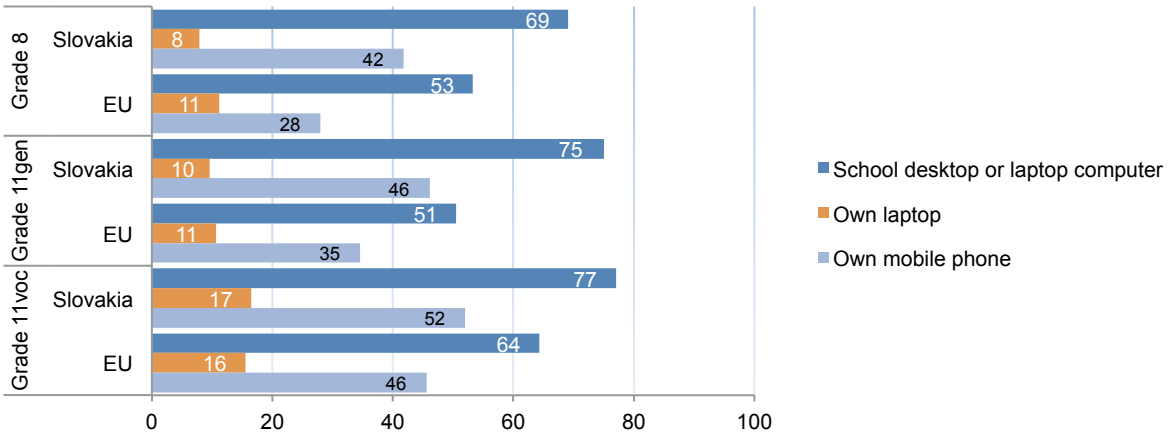


As regards teachers' use of ICT (Section 3 of the main report), Slovakia is also in the group of leading countries as regards teachers who have been using ICT in lessons for more than six years (main report, fig 3.2). Slovakia is among the middle group of countries in terms of student-centred learning (fig. 3.5).

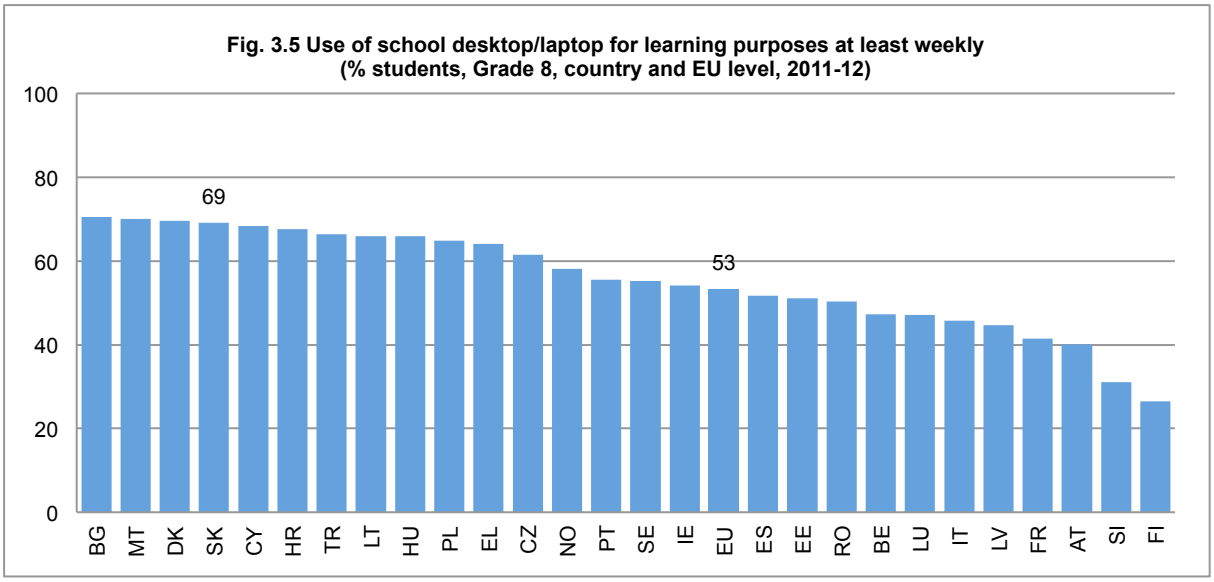
STUDENTS' ICT USE

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 Slovakia student use of computers in class is higher than the EU mean. Use of their own laptop is close to EU means at all grades. Mobile phone usage is below the EU mean at all grades.

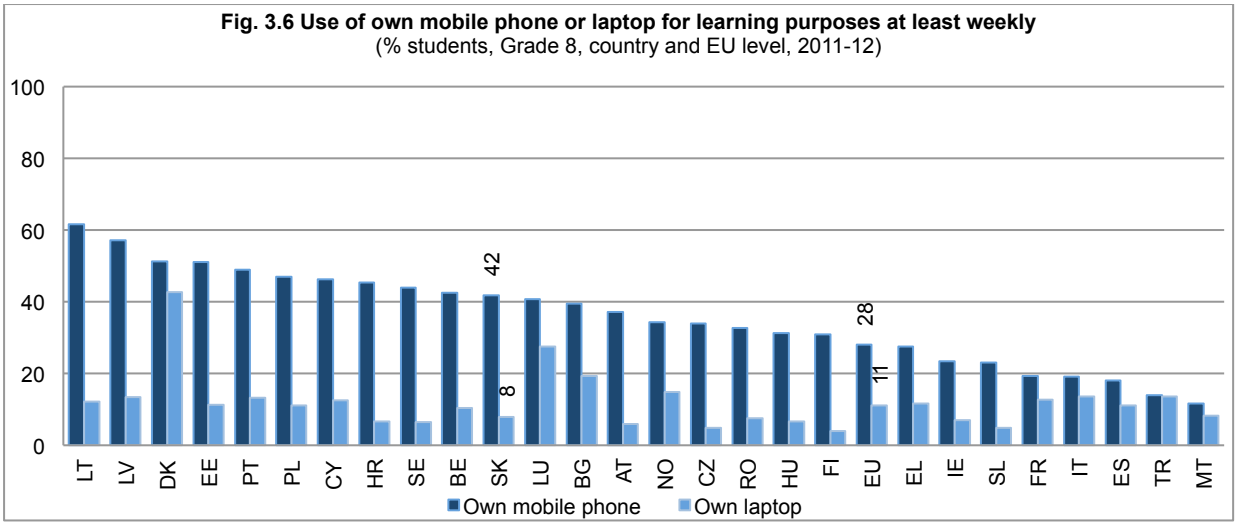
Fig. 3.3: Percentages of students using ICT equipment in class for learning, at least once a week
(Slovakia and EU, 2011-12)



At grade 8 students' reported use of computers for learning in lessons is an impressive fourth highest in Europe, 69% saying they use them at least once a week (fig. 3.5), and in the top three at grade 11 (main report, fig. 2.5).



Compared to other countries at grade 8 (fig.3.6), students in Slovakia are relatively heavy users of their own mobile phone but there is less use of their own laptop in school. At other grades these figures are similar (main report fig. 2.5).



Students report using interactive whiteboards at around the same frequency as other countries at all grades but there is more intensive use at grade 11 vocational where Slovakia is fifth in this respect.

Concerning students' ICT-based activities during lessons, an important indicator, Slovakia is among the leading countries as measured by frequency of use (main report, fig. 3.8) at all grades.

4. DIGITAL CONFIDENCE

TEACHERS

The mean score of students in Slovakia being taught by teachers declaring confidence in their operational skills is close to 3 ('somewhat') in all grades, much in line with the EU mean.

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'; Slovakia and EU; 2011-12)

Fig. 4.1a: grade 4

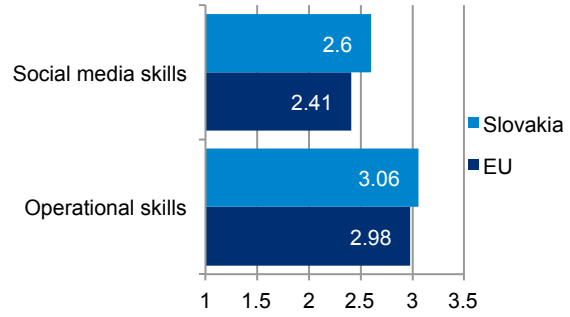


Fig. 4.1b: grade 8

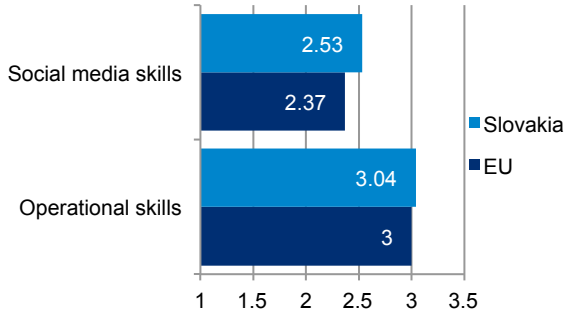


Fig. 4.1c: grade 11 gen.

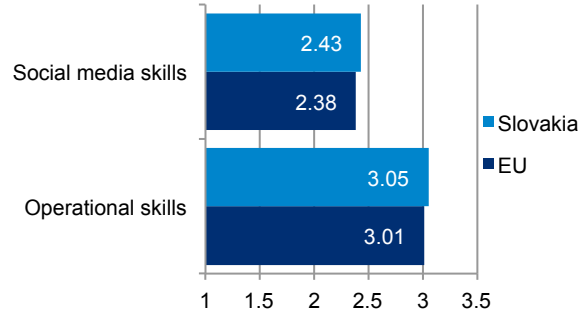
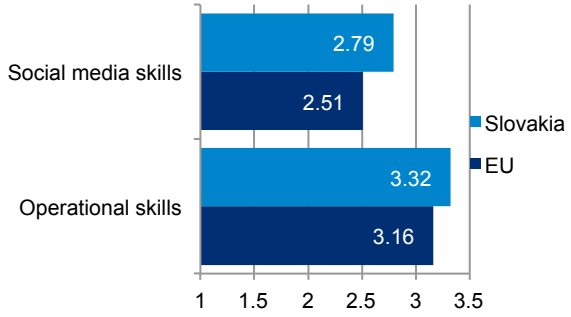


Fig. 4.1d: grade 11 voc.



Comparing confidence levels at grade 8, teachers' confidence in their operational skills places Slovakia close to the average (fig. 4.1e), similar to other grades (main report, fig. 4.13) but at the top end of the ranking at all grades as regards social media confidence (fig. 4.1f).

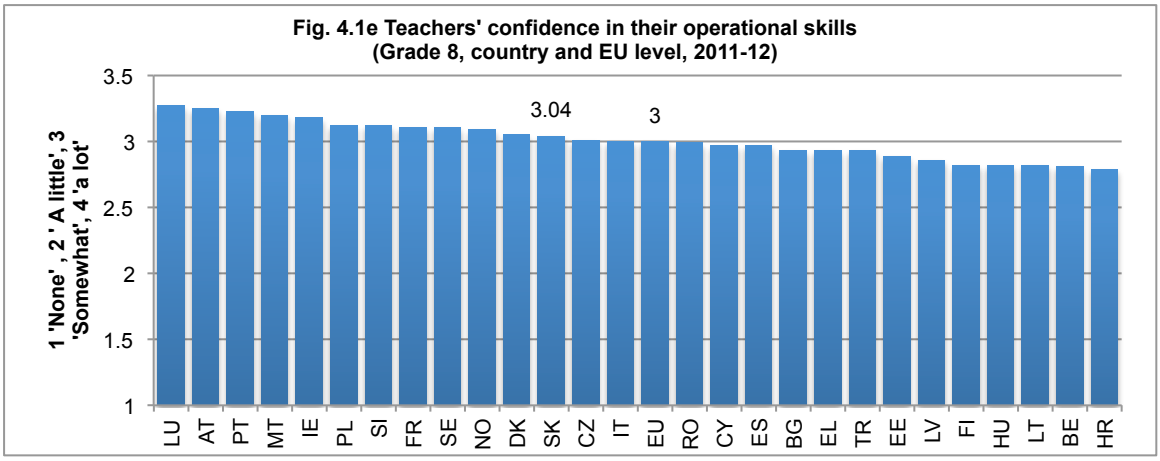


Fig. 4.1e Teachers' confidence in their operational skills
(Grade 8, country and EU level, 2011-12)
1 'None' , 2 ' A little', 3 'Somewhat', 4 'a lot'
3.5
3
2.5
2
1.5
1
3.04
3
LU AT PT MT IE PL SI FR SE NO DK SK CZ IT EU RO CY ES BG EL TR EE LV FI HU LT BE HR

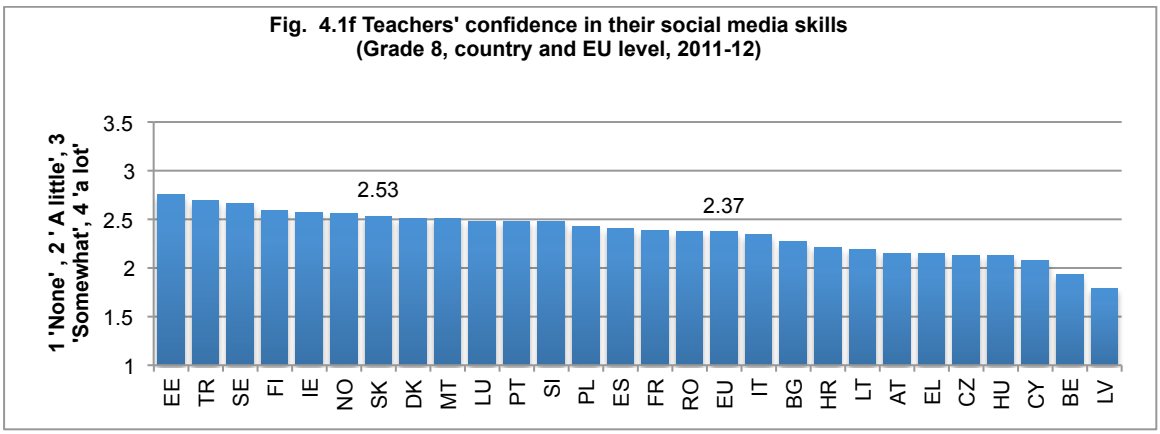


Fig. 4.1f Teachers' confidence in their social media skills
(Grade 8, country and EU level, 2011-12)
1 'None' , 2 ' A little', 3 'Somewhat', 4 'a lot'
3.5
3
2.5
2
1.5
1
2.53
2.37
EE TR SE FI IE NO SK DK MT LU PT SI PL ES FR RO EU IT BG HR LT AT EL CZ HU CY BE LV

STUDENTS

The mean score of students in Slovakia is slightly above the EU mean at all grades for operational and social media skills.

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'; Slovakia and EU; 2011-12)

Fig. 4.2a: grade 8

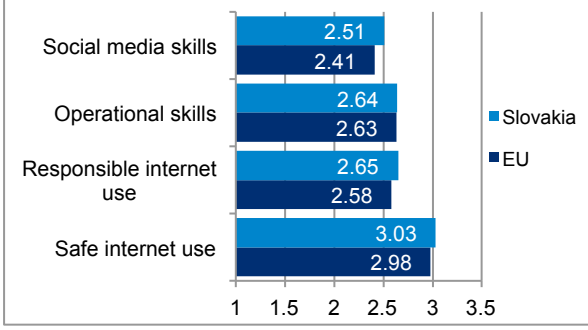


Fig. 4.2b: grade 11 gen.

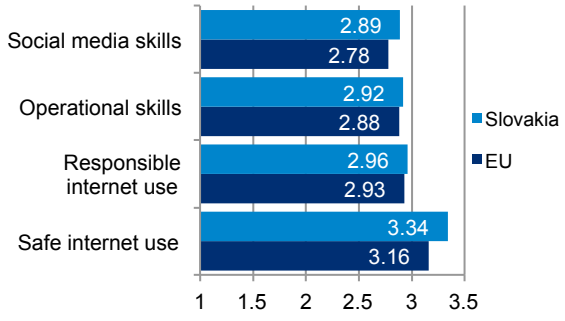
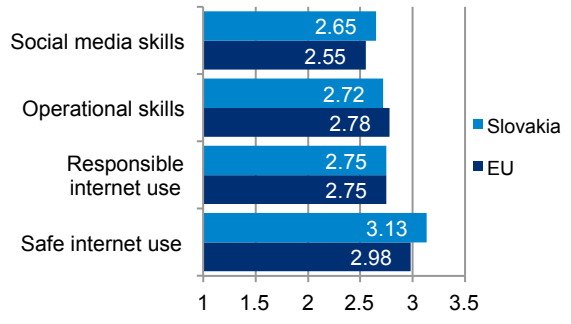
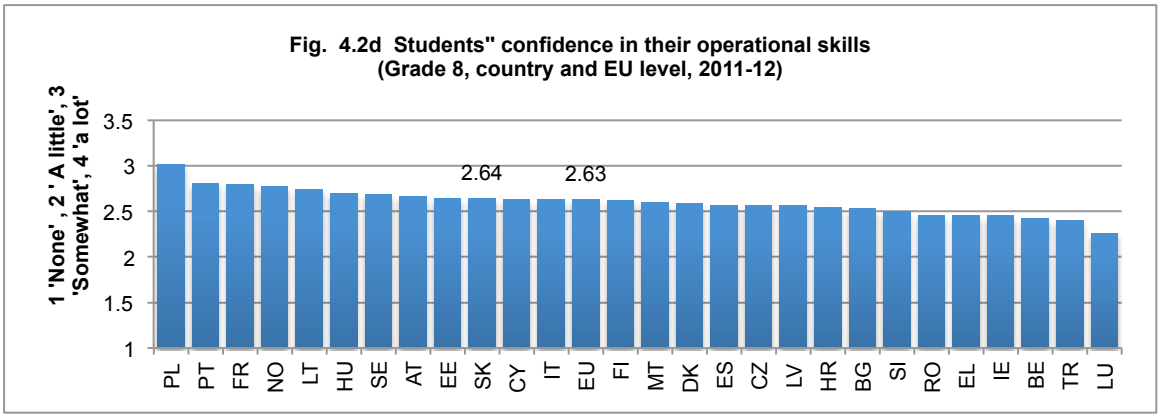
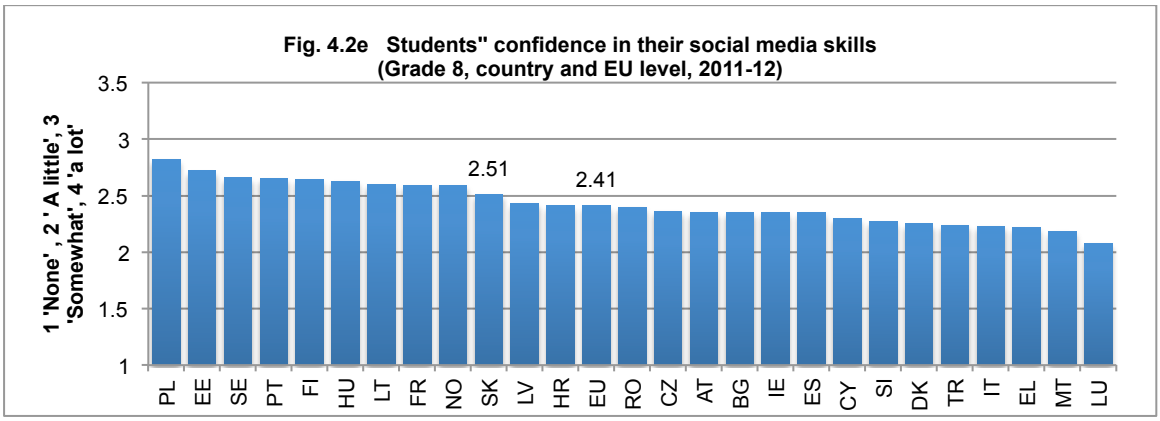


Fig. 4.2c: grade 11 voc.



Confidence in operational skills is higher than the EU mean amongst grade 8 students (fig. 4.2d), and in the top half of countries at other grades (main report fig. 4.18). In social media competence, Slovakian students rate themselves amongst the leading group of countries at all grades (fig. 4.2e for grade 8).





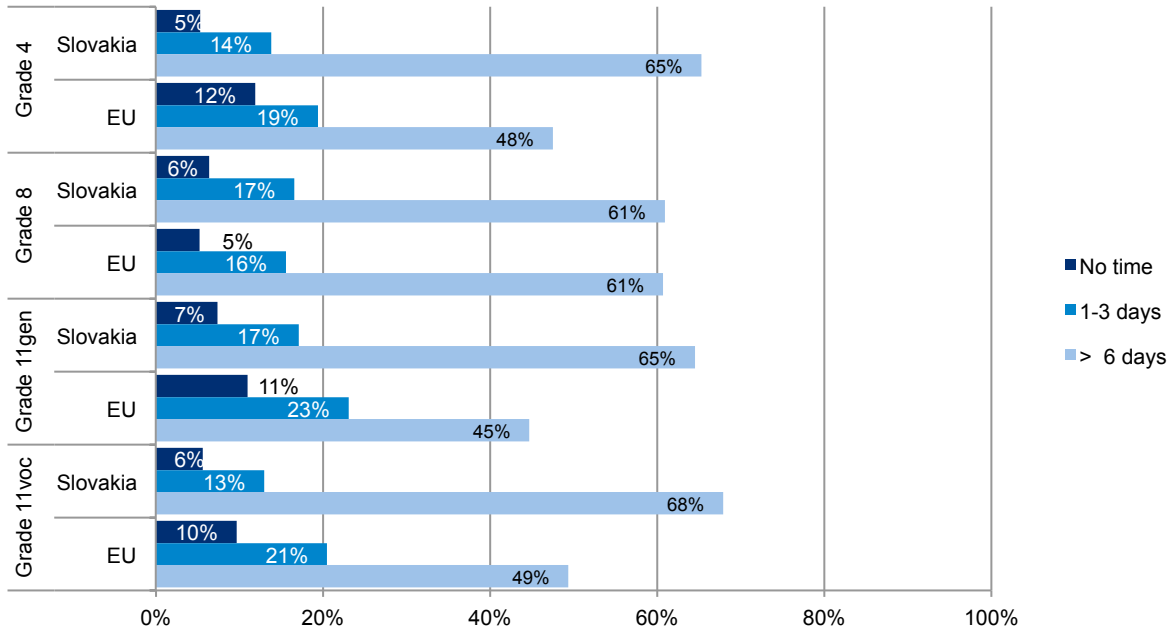
At all grades students in Slovakia are in the upper half of countries in terms of confidence to use the internet safely and to use it responsibly (main report, fig. 4.16, 4.17).

5. PROFESSIONAL DEVELOPMENT

TIME SPENT ON TRAINING

In Slovakia all students at all grades are taught by teachers who have invested more than 6 days in professional development activities during the past two years, above the EU average. The percentage of students in schools where teachers have spent between 1 and 3 days on ICT professional development activities is generally close to, but lower than, the EU level at all grades, and slightly higher at grade 8. Those who have spent no time are below the EU mean at all grades.

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'; Slovakia and EU; 2011-12)



ENGAGEMENT IN TRAINING

As Fig. 5.2 below shows, Slovakia is positioned close to the EU mean at all grades, although slightly higher at grades 4 and 11 vocational when considering the percentage of students taught by teachers who have recently undergone ICT training provided by school staff. This is pattern is reflected where they have received personalized training, but training via online communities is lower than the EU mean at all grades, except for at grade 4.

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

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

Fig. 5.2a: grade 4

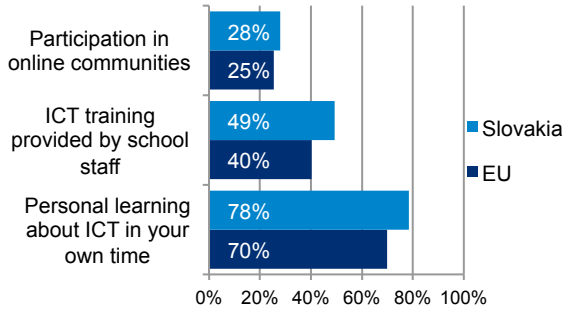


Fig. 5.2b: grade 8

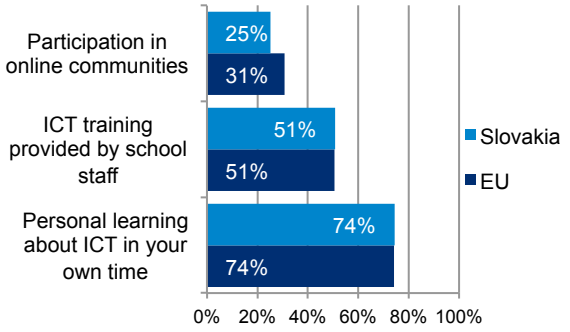


Fig. 5.2c: grade 11 gen.

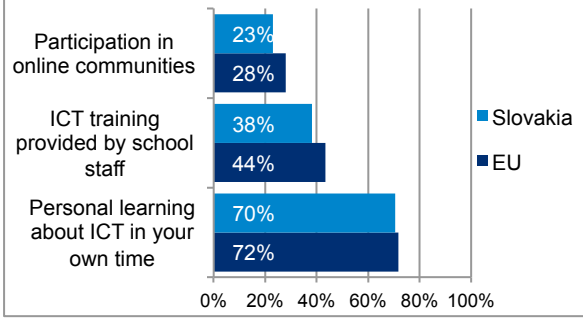


Fig. 5.2d: grade 11 voc.

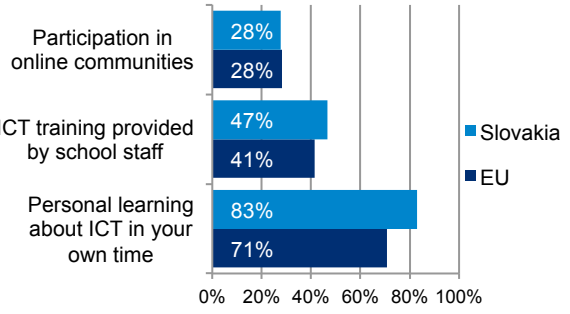
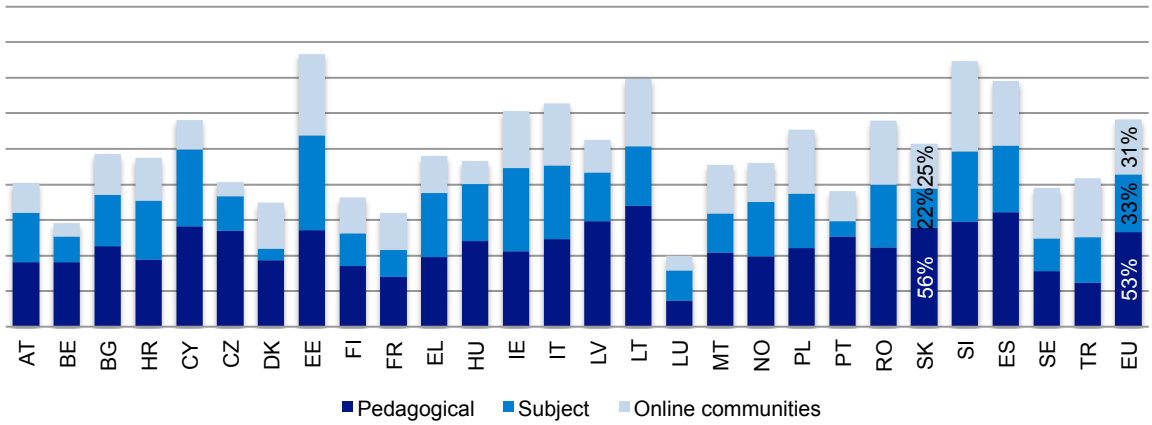


Fig. 5.2e shows that grade 8 teachers in Slovakia have taken part in professional development in the preceding two years, although a lower percentage takes part in subject-specific training and online communities.

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



In Slovakia at most grades percentages of students taught by teachers for whom ICT training is compulsory are among the lowest in the EU (main report, fig. 4.2). As regards involvement in personal learning about ICT in their own time (main report, fig. 4.4), percentages (in the range 70% to 83%) are above those in most other countries. The percentage of students taught by teachers participating in training provided by school staff is but close the mean at all grades (main report, fig.4.5). Between 5 and 7 per cent of students are 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); these figures are close to those in most other countries.

6. SCHOOL SUPPORT MEASURES

Students at all grades in Slovakia are in schools close to EU averages for having ICT strategies implemented (main report, fig. 5.3), 20-30% being in such schools. On the other hand at all grades, there are relatively low percentages of students in schools with strategies to support teacher collaboration (main report, fig. 5.7). Slovakia ranks first or second across all grades as regards strategies about responsible internet and social media use (main report fig. 5.10). Clearly schools are active in this area in Slovakia. On the other hand, Slovakia ranks last or second last at all grades as regards percentages of students in schools with change management programmes (main report, fig. 5.14).

ICT COORDINATOR

In Slovakia, compared to the situation at EU level (see Fig. 8b), more students at grade 4 and 11 general are in schools where ICT coordinators are provided at a higher level, but there are fewer at grade 8. Students at all grades are in schools that all employ more full time ICT coordinators than the EU mean (at grade 4 and 8 around 20% more).

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

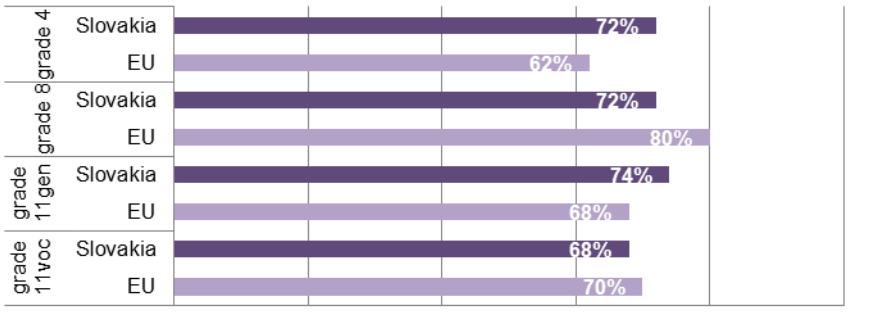
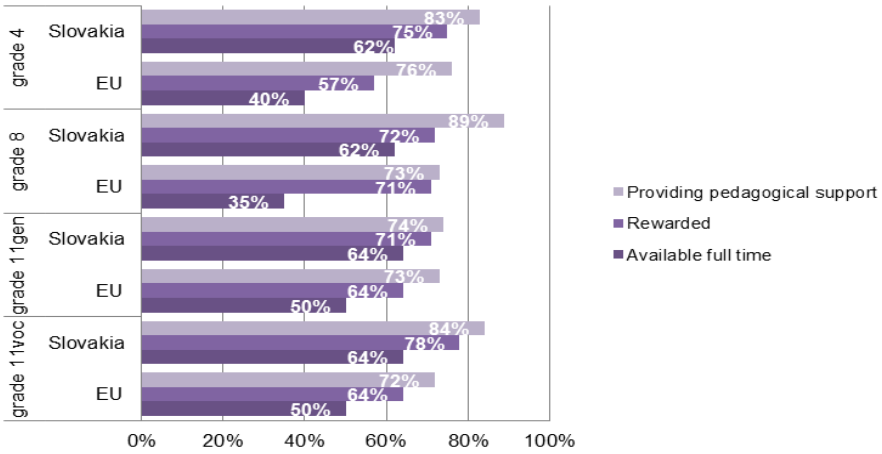


Fig. 6.2: Percentages of students in a school with ICT coordinator available full time, and/or rewarded and/or providing pedagogical support (all grades, Slovakia and EU, 2011-12)



INCENTIVES

The majority of students at all grades are schools in Slovakia where the ICT coordinator is provided with incentives considerably above the EU level, in all areas, except for reduction in hours.

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

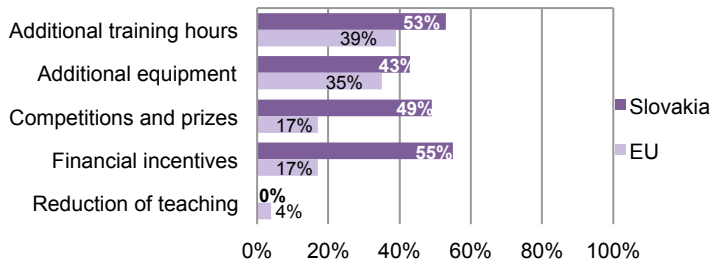


Fig. 6.3b: grade 8

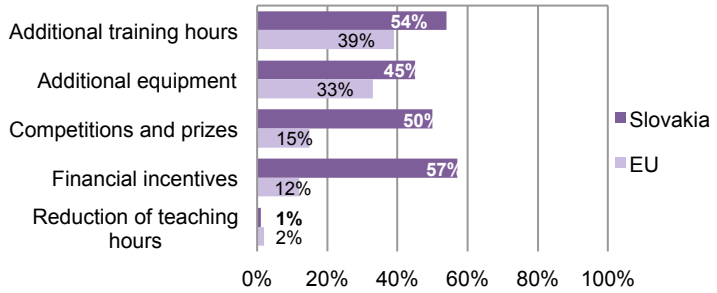


Fig. 6.3c: grade 11 gen.

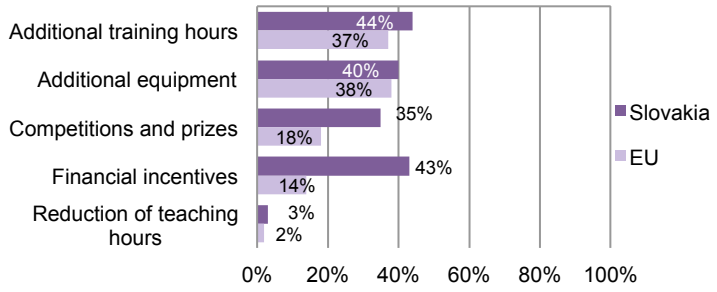
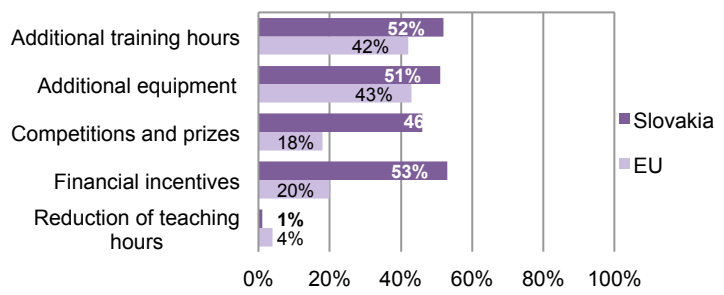


Fig. 6.3d: grade 11 voc.

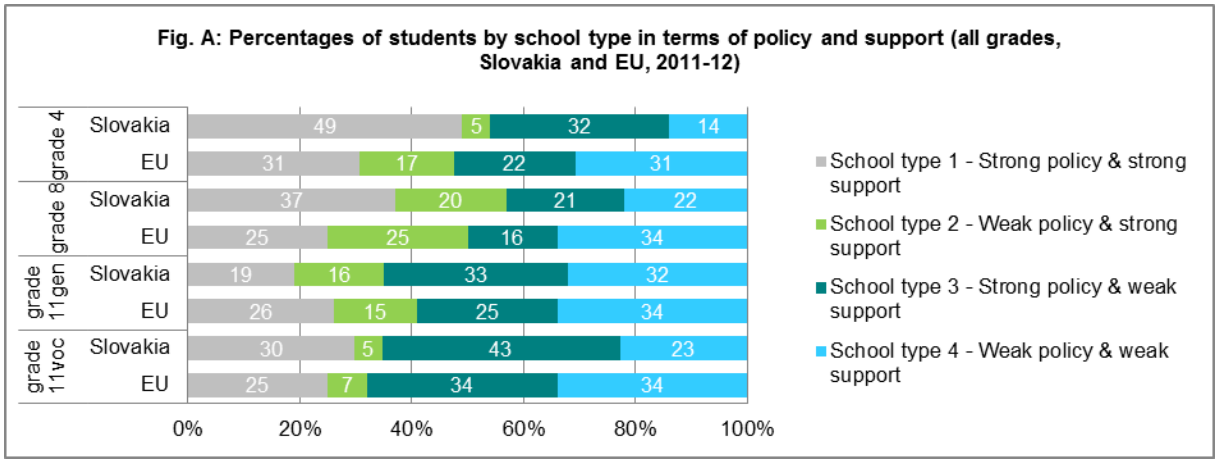


For further details please refer to Section 5 of the survey report.

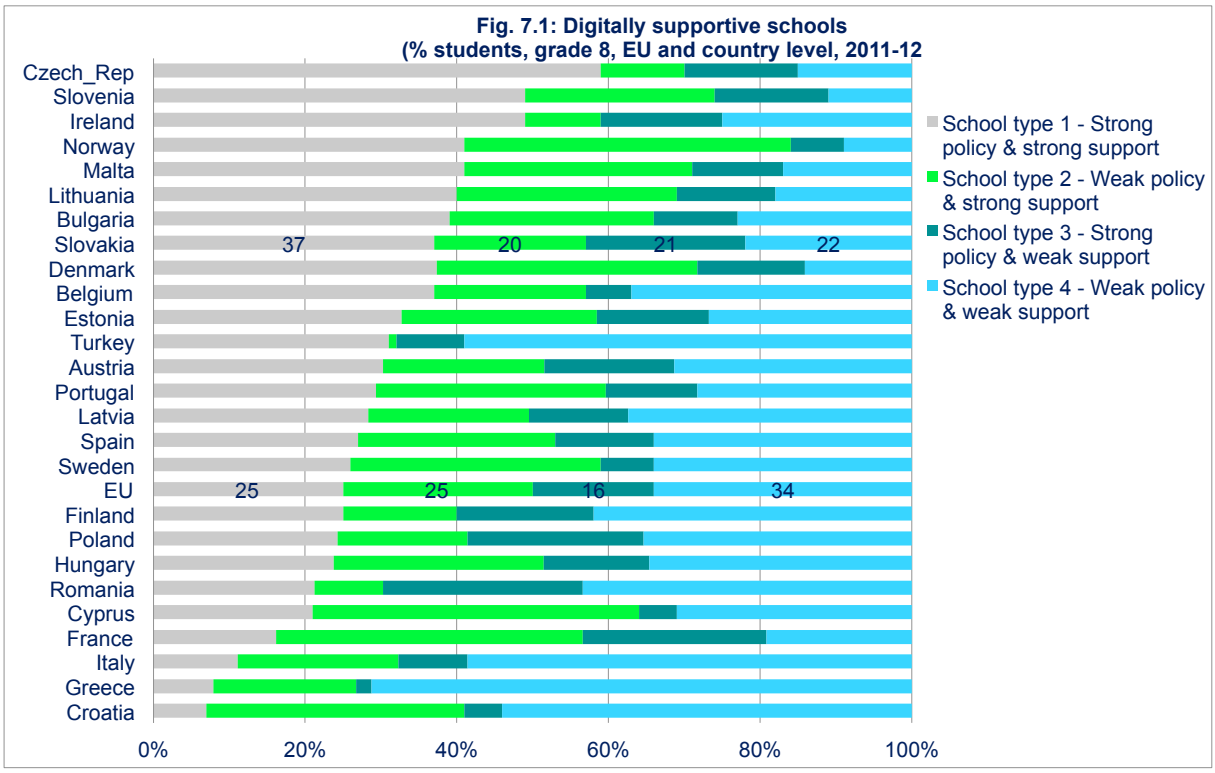
7: CLUSTERS

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 Slovakia, around 50% of grade 4 and 8 students are in schools with strong support of the use of ICT, much higher than at grade 11 and at grade 11 general the percentage is below the EU mean.

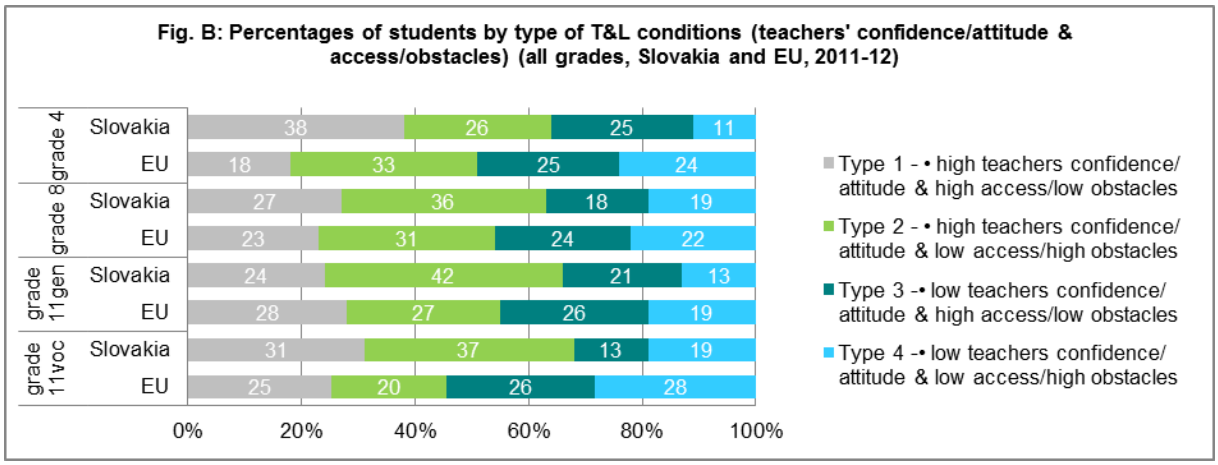


At grade 8 Slovakia ranks high compared to other countries considering schools with strong policy and strong support (type 1). The same is true for grade 4 and grade 11 vocational but at grade 11 Slovakia is among the lowest ranking countries on this measure (main report fig. 8.1).

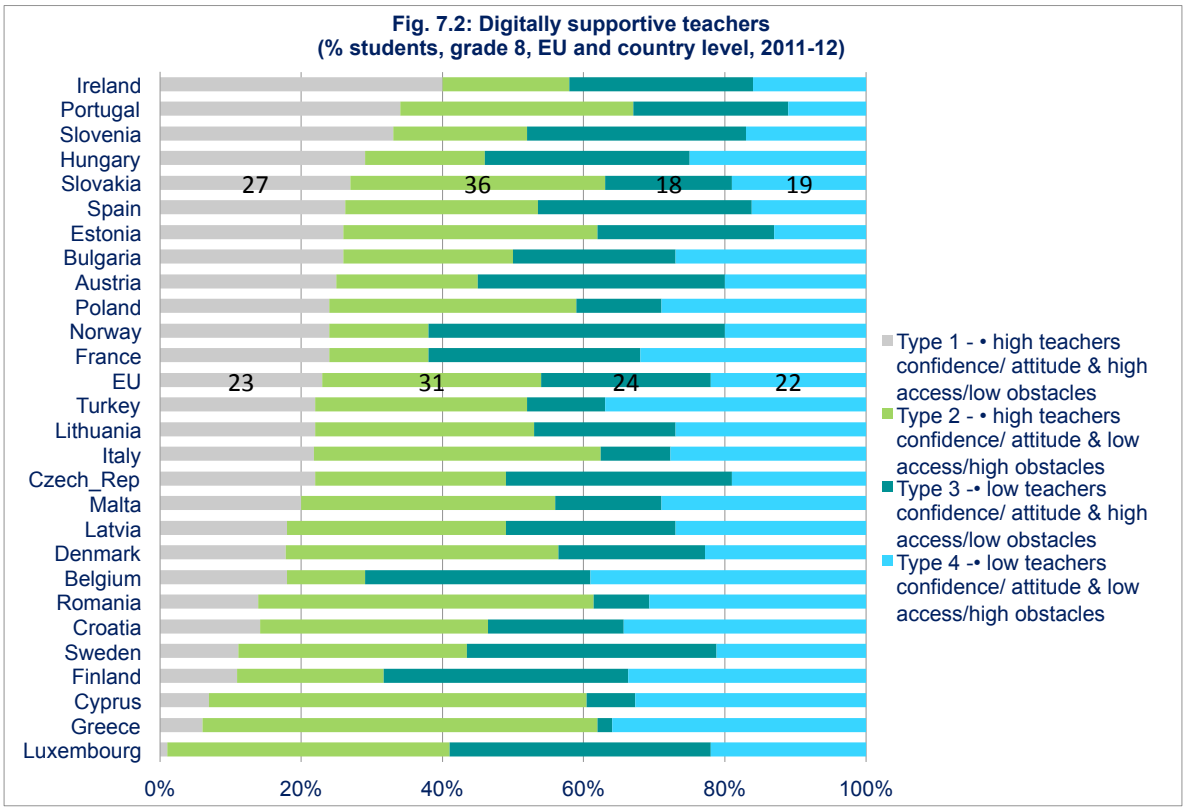


DIGITALLY CONFIDENT AND SUPPORTIVE TEACHERS

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 Slovakia follow a similar pattern, with above EU means at all grades except grade 11 general. At all grades there is a lower percentage than the EU mean in schools with low teacher confidence and attitudes, low access and high obstacles.



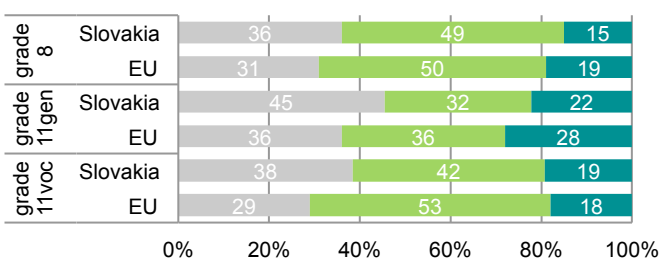
A high percentage of students at grade 8 compared to other countries is in schools with type 1 teachers (fig. 7.2). At grade 4 Slovakia ranks second on this indicator but around the middle at grade 11 (main report fig. 8.3).



THE DIGITALLY SUPPORTIVE STUDENT

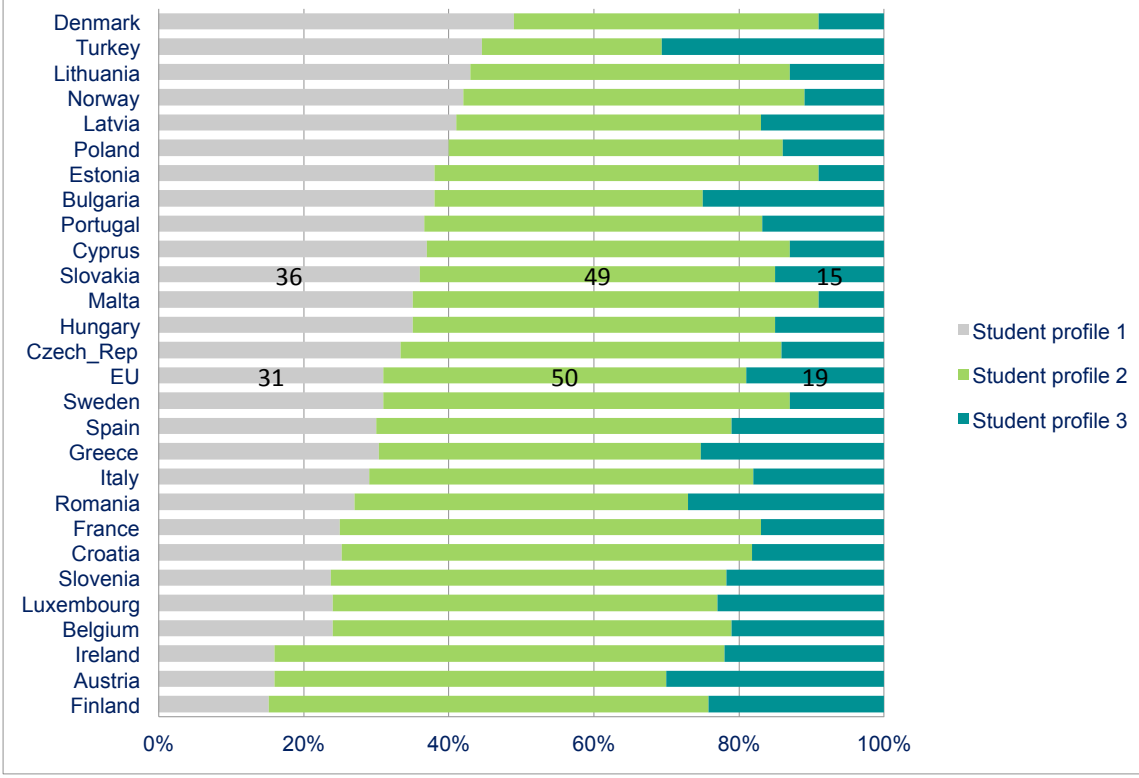
A *digitally supportive student* being defined as having high ICT access and use at school and at home, the percentages of such students in Slovakia are again above EU averages, notably at grade 11 general.

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



On this measure, percentages of type 1 grade 8 students are inside the middle-ranking group of countries (fig. 7.3), and the same is true at other grades (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 Slovakia, considering the high percentages at grade 4 for schools and teachers it is surprising to note that percentages of students in highly digitally equipped schools is much lower than EU averages at this and grade 8, whereas at grade 11 over 50% of students are in such schools, well above the EU mean.

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

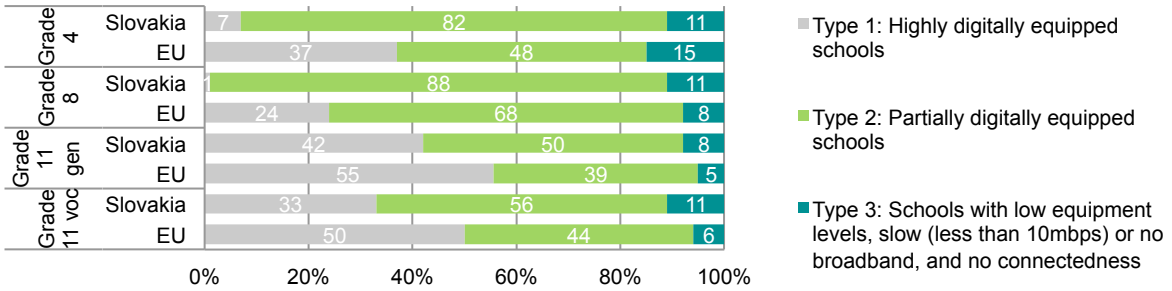
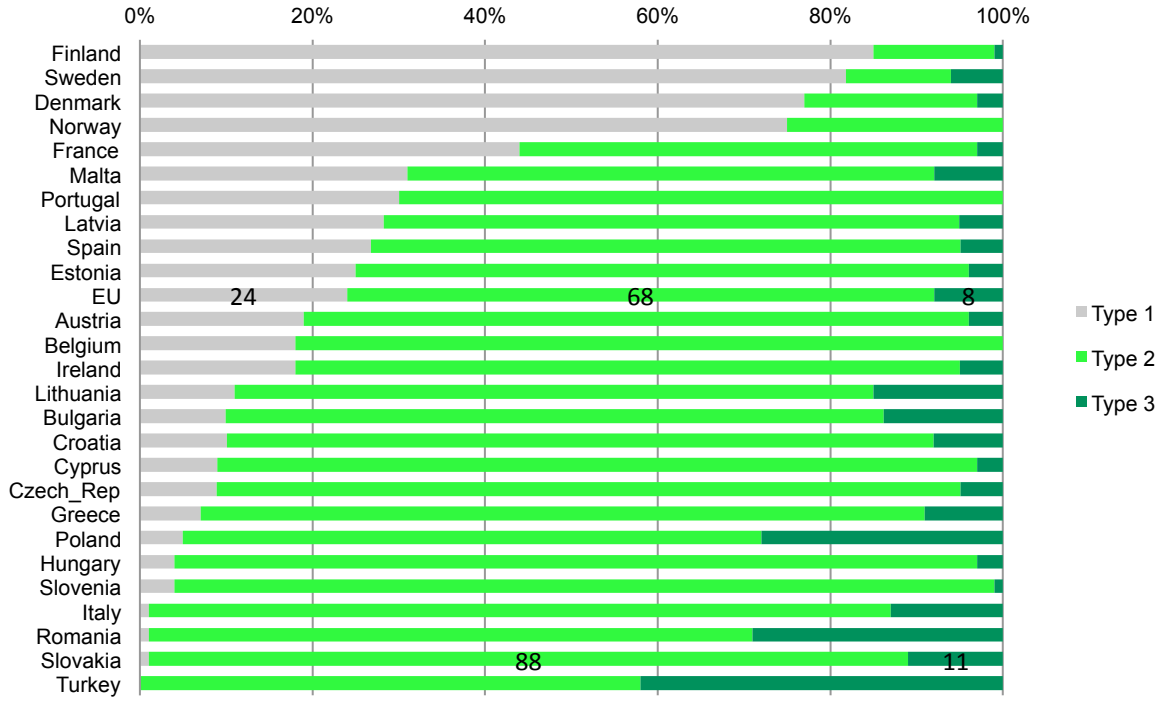


Fig. 7.4 shows how Slovakia compares with other countries at grade 8 on this measure, very low in terms of type 1 schools but with a high percentage in type 2 schools. The picture is broadly similar at other grades (main report, fig. 1.13). Such a low ranking can largely be explained by the fact that few students are in schools with broadband faster than 30mbps.

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



CONCLUSION

In terms of **equipment,** students in Slovakia have lower levels of access and broadband speeds than the EU mean but **use** by both students and teachers is higher than the EU mean, whereas in other countries the opposite can often be the case. Students' **confidence in their ICT** skills is higher than the mean while teachers' tends to be lower. **Professional development in ICT** seems to be rather uneven, but **support measures for using ICT in teaching and learning** are higher than the EU average in terms of the percentage of students in schools with ICT coordinators.

Overall, a greater percentage of Slovakian students than the EU mean are in schools with strong policies and support for ICT (except at grade 11 general) and teachers are 'digitally supportive' about using ICT but at grades 4 and 8 equipment and connectivity seem to be an obstacle to capitalising on this positive disposition. At grade 11 general the opposite seems to be the case – schools and teachers are less digitally supportive but they are better equipped.

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
Slovakia	13.5	(0.6)	15.3	(0.5)	17.8	(0.9)	26.6	(1.0)
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
1. Grade4	Slovakia	0.0%	(0.0)	25.6%	(3.3)	38.7%	(3.6)	14.3%	(2.6)	12.2%	(2.7)
	EU	8.0%	(1.3)	16.5%	(2.3)	21.4%	(2.4)	22.1%	(2.2)	19.5%	(2.2)
2. Grade8	Slovakia	0.0%	(0.0)	16.9%	(2.8)	35.2%	(3.6)	17.3%	(3.0)	20.1%	(3.0)
	EU	5.0%	(0.8)	9.6%	(1.3)	19.1%	(2.3)	27.7%	(2.4)	24.8%	(2.3)
3. Grade11gen	Slovakia	0.0%	(0.0)	8.0%	(2.7)	29.1%	(5.1)	17.8%	(4.5)	12.4%	(3.6)
	EU	3.7%	(1.3)	6.2%	(0.8)	18.0%	(2.8)	23.2%	(3.0)	25.4%	(3.9)
4. Grade11voc	Slovakia	0.0%	(0.0)	10.6%	(2.8)	34.2%	(3.8)	16.8%	(3.0)	16.4%	(2.9)
	EU	6.5%	(1.8)	6.2%	(1.3)	15.2%	(3.0)	21.2%	(2.6)	24.2%	(4.6)

From30to100	SE6	MoreThan100	SE7
4.8%	(1.6)	4.4%	(1.6)
8.6%	(1.4)	4.0%	(1.3)
5.2%	(1.6)	5.2%	(1.6)
8.6%	(1.6)	5.2%	(1.2)
13.2%	(3.7)	19.5%	(4.7)
13.3%	(2.6)	10.3%	(8.0)
9.9%	(2.3)	12.0%	(2.6)
15.7%	(7.1)	10.9%	(5.3)

Fig. 2.5
Connectedness

Level	COUNTRY	SchWebsite	SE1	VLE	SE2	NoConnect	SE3
1. Grade4	Slovakia	86.7%	(2.8)	27.5%	(3.4)	11.3%	(2.7)
	EU	69.7%	(3.6)	26.8%	(2.0)	15.9%	(2.2)

Level	COUNTRY	SchWebsite	SE1	VLE	SE2	NoConnect	SE3
2. Grade8	Slovakia	88.8%	(2.3)	33.8%	(3.5)	11.8%	(2.5)
	EU	86.0%	(1.6)	61.4%	(3.0)	8.4%	(1.2)
3. Grade11gen	Slovakia	92.2%	(3.0)	38.4%	(5.4)	7.9%	(3.0)
	EU	91.7%	(3.1)	61.0%	(7.9)	7.0%	(2.9)
4. Grade11voc	Slovakia	88.8%	(2.6)	34.5%	(3.8)	11.5%	(2.6)
	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	Slovakia	10.3%	(2.2)	15.1%	(2.5)	27.8%	(3.1)	28.6%	(3.1)	9.6%	(2.2)
	EU	3.0%	(0.4)	10.0%	(2.4)	13.9%	(1.4)	18.0%	(1.8)	19.1%	(2.1)
2. Grade8	Slovakia	7.6%	(1.2)	14.4%	(1.6)	24.3%	(2.0)	25.8%	(1.8)	15.4%	(1.5)
	EU	7.4%	(1.0)	6.8%	(0.8)	14.7%	(0.9)	20.7%	(1.2)	18.9%	(1.4)
3. Grade11gen	Slovakia	6.9%	(1.9)	14.7%	(2.3)	23.1%	(2.8)	18.2%	(2.9)	20.7%	(3.0)
	EU	7.0%	(1.0)	8.1%	(1.4)	14.9%	(1.4)	22.9%	(3.8)	17.1%	(1.8)
4. Grade11voc	Slovakia	28.5%	(2.4)	18.4%	(2.0)	24.8%	(2.4)	15.2%	(1.7)	6.4%	(1.2)
	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
2.8%	(1.3)	2.6%	(1.2)	3.3%	(1.8)
20.7%	(2.7)	8.7%	(1.4)	6.7%	(1.4)
6.9%	(1.1)	2.2%	(0.7)	3.4%	(0.8)
14.4%	(1.0)	11.0%	(1.0)	6.1%	(0.8)
8.2%	(1.8)	3.2%	(1.4)	5.2%	(1.3)
14.0%	(1.5)	10.3%	(1.4)	5.7%	(0.9)
3.7%	(1.0)	0.9%	(0.4)	2.2%	(0.8)
9.0%	(1.5)	6.8%	(1.1)	3.5%	(0.5)

Fig. 3.2

Scale Teacher ICT Activities

COUNTRY	Grade4	SE1	Grade8	SE2	Grade11gen	SE3	Grade11voc	SE4
Slovakia	2.29	(0.04)	2.11	(0.03)	2.00	(0.03)	2.20	(0.03)
EU	1.95	(0.02)	1.91	(0.03)	1.89	(0.02)	2.01	(0.02)

Fig. 3.3

Using ICT equipment

Level	Country	OwnMobPhone	SE1	OwnLaptop	SE2	SchoolComputer	SE3
1. Grade8	Slovakia	41.8	(1.4)	7.9	(0.7)	69.1	(1.3)
	EU	28.0	(0.8)	11.2	(0.7)	53.3	(1.1)
2. Grade11gen	Slovakia	46.1	(1.7)	9.6	(1.0)	75.0	(1.6)
	EU	34.6	(1.3)	10.7	(1.1)	50.5	(1.5)

Level	Country	OwnMobPhone	SE1	OwnLaptop	SE2	SchoolComputer	SE3
3. Grade11voc	Slovakia	52.0	(1.4)	16.5	(1.2)	77.0	(1.1)
	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
Slovakia	1.75	(0.02)	1.85	(0.03)	1.89	(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	Slovakia	2.60	(0.06)	3.06	(0.04)
	EU	2.41	(0.03)	2.98	(0.02)
2. Grade8	Slovakia	2.54	(0.04)	3.04	(0.03)
	EU	2.37	(0.04)	3.00	(0.03)
3. Grade11gen	Slovakia	2.43	(0.07)	3.05	(0.05)
	EU	2.38	(0.07)	3.01	(0.03)
4. Grade11voc	Slovakia	2.79	(0.05)	3.32	(0.03)
	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	Slovakia	2.51	(0.03)	2.64	(0.02)	2.65	(0.02)	3.04	(0.02)
	EU	2.41	(0.02)	2.63	(0.02)	2.58	(0.02)	2.98	(0.02)
2. Grade11gen	Slovakia	2.89	(0.03)	2.92	(0.02)	2.96	(0.02)	3.34	(0.03)
	EU	2.78	(0.02)	2.88	(0.01)	2.93	(0.03)	3.16	(0.02)
3. Grade11voc	Slovakia	2.65	(0.03)	2.72	(0.02)	2.75	(0.02)	3.13	(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	Slovakia	65.3%	(3.4)	13.8%	(2.4)	5.3%	(2.0)
	EU	47.5%	(4.2)	19.4%	(3.0)	11.9%	(2.4)
2. Grade8	Slovakia	60.9%	(2.5)	16.6%	(1.7)	6.4%	(1.1)
	EU	60.7%	(1.6)	15.6%	(1.0)	5.2%	(0.5)
3. Grade11gen	Slovakia	64.5%	(3.5)	17.1%	(2.3)	7.4%	(1.9)
	EU	44.7%	(5.2)	23.1%	(3.4)	11.0%	(1.6)
4. Grade11voc	Slovakia	67.9%	(2.6)	13.0%	(1.6)	5.6%	(1.1)

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	Slovakia	27.9%	(3.3)	49.3%	(3.6)	78.4%	(3.1)
	EU	25.4%	(2.5)	40.3%	(3.2)	70.0%	(2.8)
2. Grade8	Slovakia	25.2%	(2.1)	50.9%	(2.6)	74.4%	(2.0)
	EU	30.8%	(1.6)	50.5%	(1.7)	74.2%	(1.3)
3. Grade11gen	Slovakia	23.1%	(3.4)	38.2%	(3.7)	70.4%	(3.4)
	EU	28.0%	(2.4)	43.5%	(2.2)	71.7%	(2.2)
4. Grade11voc	Slovakia	27.6%	(2.5)	46.6%	(2.7)	83.0%	(2.5)
	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
Slovakia	72.2%	(3.4)	71.8%	(3.4)	73.5%	(4.6)	68.1%	(3.7)
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	Slovakia	62.2%	(4.3)	74.6%	(3.8)	82.6%	(3.3)
	EU	39.3%	(3.0)	56.5%	(3.0)	75.9%	(2.3)
2. Grade8	Slovakia	61.6%	(4.2)	72.4%	(3.9)	88.8%	(2.6)
	EU	34.8%	(2.9)	70.6%	(2.4)	72.5%	(2.5)
3. Grade11gen	Slovakia	64.2%	(6.6)	71.2%	(6.6)	73.5%	(6.9)
	EU	49.6%	(6.9)	63.6%	(7.7)	73.4%	(4.2)
4. Grade11voc	Slovakia	63.9%	(4.6)	77.9%	(3.9)	83.6%	(3.5)
	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	Slovakia	53.3%	(3.7)	43.1%	(3.7)	48.5%	(3.7)	54.6%	(3.7)	0.0%	(0.0)	30.4%	(3.9)
	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	Slovakia	53.5%	(3.7)	45.3%	(3.7)	49.6%	(3.7)	56.5%	(3.7)	1.1%	(0.8)	33.2%	(3.9)
	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	Slovakia	44.3%	(5.5)	40.4%	(5.5)	35.4%	(5.2)	43.4%	(5.6)	2.7%	(1.7)	30.6%	(5.4)
	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	Slovakia	52.3%	(4.0)	50.6%	(4.0)	45.6%	(4.0)	52.9%	(4.0)	1.2%	(0.8)	27.4%	(3.7)

Level	COUNTRY	TrainingHours	SE1	Equipment	SE2	Competitions	SE3	FinancialInc	SE4	ReductionHours	SE5	Other	SE6
	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	Slovakia	49	(3.72)	5	(1.66)	32	(3.41)	14	(2.77)
	EU	31	(2.70)	17	(3.17)	22	(2.53)	31	(2.98)
2. Grade8	Slovakia	37	(3.52)	20	(2.87)	21	(3.06)	22	(3.00)
	EU	25	(1.91)	25	(2.20)	16	(1.83)	34	(2.15)
3. Grade11gen	Slovakia	19	(4.13)	16	(4.36)	33	(5.28)	32	(5.12)
	EU	26	(2.28)	15	(8.69)	25	(3.74)	34	(5.30)
4. Grade11voc	Slovakia	30	(3.58)	5	(1.62)	43	(3.96)	23	(3.31)
	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	Slovakia	38	(3.45)	26	(3.04)	25	(3.04)	11	(2.45)
	EU	18	(2.02)	33	(2.95)	25	(2.33)	24	(2.64)
2. Grade8	Slovakia	27	(2.13)	36	(2.26)	18	(1.65)	19	(1.89)
	EU	23	(1.43)	31	(1.27)	24	(1.52)	22	(1.17)
3. Grade11gen	Slovakia	24	(3.05)	42	(3.53)	21	(2.47)	13	(2.21)
	EU	28	(2.41)	27	(2.68)	26	(1.65)	19	(1.67)
4. Grade11voc	Slovakia	31	(2.43)	37	(2.62)	13	(1.85)	19	(1.93)
	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	Slovakia	36	(1.39)	49	(1.30)	15	(0.92)
	EU	31	(1.00)	50	(0.85)	19	(0.67)
2. Grade11gen	Slovakia	45	(1.64)	32	(1.38)	22	(1.10)
	EU	36	(1.18)	36	(1.00)	28	(1.47)
3. Grade11voc	Slovakia	38	(1.35)	42	(1.23)	19	(0.98)
	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	Slovakia	7	(1.98)	82	(3.07)	11	(2.59)
	EU	37	(4.43)	48	(4.15)	15	(2.12)

Level	COUNTRY	Type1	SE1	Type2	SE2	Type3	SE3
2. Grade8	Slovakia	88	(2.41)	1	(0.67)	11	(2.33)
	EU	68	(2.87)	24	(3.31)	8	(1.16)
3. Grade11gen	Slovakia	42	(5.52)	50	(5.56)	8	(2.96)
	EU	55	(12.27)	39	(10.34)	5	(2.06)
4. Grade11voc	Slovakia	11	(2.57)	33	(3.77)	56	(3.96)
	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 Slovakia 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 Slovakia participation levels (782 schools) are well above the EU mean,

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