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Introducing Netbook Pedagogies in Schools

Foreword

Marc Durando
Executive Director at European Schoolnet

Information and communication technology has an invaluable contribution to make to education. But as has long been recognised, it does not in and of itself generate sustained change and innovation in teaching and learning. For such a change to happen, technology has to be embedded in pedagogical approaches that have been intentionally implemented within this objective.

European Schoolnet is a network of 30 Ministries of Education in Europe concerned with the transformation of teaching and learning processes all over Europe and more specifically with the use of ICT and digital media in that context. European Schoolnet has warmly welcomed the partnership with Acer. Such an opportunity was indeed a unique way to better understand, on a large scale, the conditions for a distinctive use of netbooks to support new teaching and learning relationships between teachers and learners, between learners, and also to involve parents in feedback about possible consequences of using such new learning approach.

To fulfil its remit, three major strategic areas were developed within European Schoolnet:

- Providing concrete evidence and data for the effective use of ICT in schools on which to base policy recommendations at ministry level;
- Supporting schools and teachers in their teaching practices using technology to pursue better teaching and learning processes;
- Developing and sustaining a network of schools engaged in the validation of innovative approaches on how to use ICT in the classroom.

The Acer-European Schoolnet Educational Netbook Pilot project is at the crossroads of these major strategic areas. The aim of the project was to understand and document how learners and teachers use netbooks in various educational contexts, and this major European action-research project provides us with some trends, practices and observations that will be shared among the community of practitioners, at the level of both teachers and school heads.

Furthermore, the results of this action-research project help inform ministries about the practices identified at school level, and help them to define future strategies in that specific area.
Federico Carozzi  
Educational Business Manager at Acer EMEA (Europe, the Middle East and Africa)

Technology pervades all aspects of our lives. And schools cannot stay still. There are more than 120 million pupils and students enrolled in European educational institutions and most of them are still experiencing traditional ways of teaching and learning. But the introduction of new technologies within the school environment can be a turning point. The goal of Acer’s education project is to foster a new kind of interaction between teachers and students through the introduction and use of technology.

Today’s students must have 21st century skills, such as creativity, problem solving, communication, and analytical thinking, in order to compete in the global, increasingly digital, marketplace. As a global leader in personal computing solutions, Acer wants to play an active role in developing and cultivating the school of the future, and in providing innovative and extremely affordable solutions to the global education community.

The partnership with European Schoolnet has given rise to the Acer-European Schoolnet Educational Netbook Pilot in six European countries (France, Germany, Italy, Spain, Turkey and the United Kingdom) and the involvement of 245 secondary school classes. Each class has been provided with one netbook per learner and a notebook for each teacher, in order to enable the sharing of all class activities through technology. Devices are no longer tools to be studied, but instruments for learning.

The goal of the project is to introduce new approaches to teacher-student interaction via IT. Technology is a precious resource in education: the use of technology can complement and improve the methodologies applied. IT infrastructures will become the driving force behind the creation of new opportunities for interaction in scholastic settings and facilitate access to existing content.
1 Introduction

This evaluation reports on the Acer-European Schoolnet Educational Netbook Pilot, which ran in parallel in six countries: France, Germany, Italy, Spain, Turkey and the UK. The Netbook Pilot explores how the introduction of netbooks and 1:1 pedagogy in schools can have an impact on the processes involved in teaching and learning, both inside and outside of school. The name 1:1 pedagogy highlights the fact that the learners have access to netbooks at all times, taking advantage of a blended learning approach alternating online and offline activities, as well as individual and collaborative ones (Vuorikari, Garoia & Balanskat, 2010).

The main phase of the Acer-European Schoolnet Educational Netbook Pilot started in the beginning of the school year 2010-2011 and ran until the end of the school year. The Netbook Pilot involved 124 schools in six countries and it had a total of 245 classes of learners equipped with netbooks (see Table 1). The main phase was preceded by a pre-pilot, from January 2010 until the end of the school year, during which 59 schools received netbooks for students and teachers. The pre-pilot classes participated in the main pilot phase in all countries but the UK, where three pre-schools abstained.

| Table 1. Number of schools and classes participating in the Netbook Pilot, numbers of netbooks and notebooks distributed, replies to the evaluation and the approximate response rate. |
|--------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Country       | Netbook schools | Netbook classes | # netbooks | # notebooks | Teacher responses | Response rate | Student responses | Response rate | Parent responses | Response rate |
|France         | 16              | 39             | 1181       | 179         | 113             | 63%           | 637            | 54%           | 333            | 28%           |
|Germany        | 21              | 40             | 1107       | 187         | 126             | 67%           | 832            | 75%           | 527            | 48%           |
|Italy          | 26              | 45             | 1036       | 188         | 144             | 77%           | 654            | 63%           | 644            | 62%           |
|Spain          | 17              | 40             | 1079       | 175         | 159             | 91%           | 609            | 56%           | 351            | 33%           |
|Turkey         | 27              | 40             | 1463       | 189         | 141             | 75%           | 1463           | 36%           | 693            | 47%           |
|UK             | 17              | 41             | 1221       | 141         | 52              | 75%           | 1221           | 28%           | 70             | 6%            |

The activities in the Netbook Pilot have been funded by Acer, who, on the one hand, provided the participating schools with Acer 10" netbooks and 11" Acer notebooks for teachers. After the pilot, the equipment became the property of the schools. The participating schools were identified with the help of the national or regional
Educational Authority. On the other hand, Acer also funded the organisation of activities, pedagogical coordination and the netbook website through European Schoolnet, which was also in charge of the evaluation. An integral part of the agreement was the independent nature of the research conducted.

The participating schools were identified with the help of the national or regional Educational Authority and their levels of ICT competences varied. Each participating school was asked to create a netbook team consisting of 3 to 5 subject teachers teaching the class, an ICT coordinator and a member of the senior leadership team. Each school had a freedom to select school subjects as they wished. The netbook team was asked to plan and implement the use of netbooks for teaching and learning according to their national or local curricula. Cross-curricular projects involving two or more teachers working closely together were strongly encouraged.

This remaining part of this section describes the evaluation procedure. Section 2 gives the highlights and emerging trends across the pilot countries and offers points for further discussion. Section 3 is divided by country, allowing the reader to gain more insights into each specific pilot country and how respondents reacted to the Netbook Pilot evaluation. Finally, the Annex provides a set of tables presenting information about data points for each country as well as the pilot average. These tables are referenced throughout the report and also in the separate country reports. Additional tables and the raw data are made available on the Internet at: http://www.netbooks.eun.org/web/acer/evaluation.

Evaluation description

The evaluation of the pilot aimed at understanding and documenting how learners and teachers use netbooks in various educational contexts, as well as how parents perceived the use of netbooks in school and out of school. The evaluation framework is inspired by the conceptual work of Heo & Kang (2009) focusing on how learners and teachers use netbooks:

- In school and out of school
- Individually and collaboratively
- For educational use and leisure use

Three different evaluations were conducted; the first one targeted parents of the netbook students (April 2011), the second one the netbook students (May 2011) and the third one the netbook teachers, school heads and school ICT coordinators (June-July 2011). The surveys were conducted online in six different languages. See Table 1 for details on the sample size.
Each evaluation questionnaire gathered precise information focusing on different areas of the evaluation framework, while keeping the specific needs of the target audience in mind. Common elements were: demographics; practices with netbooks; the use of netbooks in school/out of school; the obstacles to the use of netbooks; opinions regarding the netbook hardware and its suitability for an educational environment; and finally the participants’ general opinion of the communication strategies within the pilot. The evaluation mostly opted for closed questions, e.g. binary or multiple choice and statements with a Likert scale. Where a Likert scale was used, a scale from 1 to 5 (1=strongly disagree to 5=strongly agree) was used for teachers and parents. For students, where a Likert scale was applied, it was from 1 to 3 (1=disagree, 2=don’t know, 3=agree).

The aim of this evaluation report is to use descriptive statistics to quantitatively describe the main trends arising from the data across pilot countries. Therefore, instead of focusing on central tendencies using the mean, the median and the mode, this evaluation highlight trends that emerge from high levels of agreement among respondents (e.g. reporting on statements where respondents “strongly agree” and “agree”). The evaluation does not include any formal hypothesis testing, nor does it aim to compare countries against each other. The entire methodological description is available online at: http://www.netbooks.eun.org/web/acer/evaluation.

It is important to acknowledge that this evaluation was conducted at the end of the Netbook Pilot and did not include a pre-evaluation. Therefore, it is not possible to know what the situation was before the arrival of the netbooks as opposed to the date when the evaluation was conducted. The interpretation of the evaluation results therefore only expresses the situation at that moment. Moreover, it is acknowledged that various other framework conditions exist in each pilot country. These are related, for example, to the access to new technologies that students have and to the educational policies within the country, e.g. the use of ICT in school, the in-service training policies, the autonomy of schools to make their own decisions regarding curriculum, etc. These most likely influence the integration of netbooks in education in one way or another, but precise understanding of the dynamics is difficult to achieve from this type of study. Further research into this area could yield more precise answers on the causes and effects of different variables.
In this part, first the twelve most interesting research questions and their results are presented. The focus is on highlighting the trends that emerge from the Netbook Pilot across countries. However, with some of the questions, especially those that bring out more differences between countries, they are highlighted to give a better picture of trends within each of the pilot countries.

The research questions are divided into four sections. First, more generic aspects of the netbooks are looked at, such as attitudes and the activities for which they were used. Then, results related to the use of netbooks out of school are presented, e.g. how often students took netbooks home, informal learning opportunities and collaboration within the family. This is followed by aspects related to in school use, such as which subjects and tools were used with netbooks, and how teachers “orchestrated” teaching with netbooks. Last, results on institutional aspects at the school level are presented, e.g. teacher collaboration opportunities, empowering teachers and their professional development.

The last section offers a number of observations on the presented results and recommendations based on lessons learned from the experiences within the Netbook Pilot.

2.1 About netbook use in general

Q1: What was the impact of netbook on attitudes and learning? This evaluation looked at the impact of netbooks on the learner, on the class atmosphere, and on the communication and collaboration patterns. By far, the most important trend regarding the learner appears to be motivational: 71% of all respondents (students, teachers and parents) agreed that the use of netbooks for school related activities had a positive impact on learners’ motivation in school and learning. Where teachers (80%) and parents (75%) agreed on netbooks’ positive impact, students themselves were more reserved in their statements (58%). Regarding this issue, the differences between the response rates of these three groups should be noted (i.e. parents and students less represented).
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Chart 1. Netbook teachers’ perception of the impact of netbooks, chart ordered in decreasing order.

Generic indices on different aspects on the impact of netbooks were derived from sets of questions for teachers (Chart 1, see also Table 11). Apart from motivating learners (79%), 68% of netbook teachers agreed on improvement in class atmosphere, e.g. schoolwork became more enjoyable, students more concentrated. Two-thirds also agreed that the use of netbooks in school and outside of school had a positive impact on collaboration patterns, especially among students and between students and teachers (around 80%), whereas teachers were less certain about netbooks impacting their collaboration with parents (37%).

Moreover, regarding learning aspects, 65% agreed with statements on more individualised learning, e.g. students with different strengths could learn at their own pace and time, students with special needs participated more, and 56% on more independent learners, e.g. students went over work again, found out more about things they are interested in, try harder in learning. 50% also agreed that the use of netbooks for school related activities could help students at risk of dropping-out re-engage with learning. 61% of netbook students, on the other hand, agreed with the positive impact on class atmosphere and collaboration, and 54% agreed with statements on “more independent learning” (Table 9b).

Q2: For what kinds of activities were netbooks used? The evaluation focused on how students used netbooks both in school and out of school. In all the pilot countries, students used their netbooks more often out of school (49%) than in school (36%). The most popular category of activities that netbook students reported doing when out of school were school related activities, such as homework and contacting teachers (56%) and looking things up on the Internet, e.g. the use of search engines and reference material (55%). These were also the most popular in school activities (64% and 59%). Other categories of use include communication activities (e.g. with friends and family, social networks, forums), leisure use (e.g. music, games, videos) and more participatory activities such as creating or editing multimedia and creating or maintaining websites (Chart 2, Table 2).
Q3: For what level of tasks were the netbooks used? Using OECD’s (2010) categorisation for students performing different tasks on the Internet, similar indices have been devised for students’ netbook activities. Internet tasks include activities such as looking things up on the Internet, communication and leisure use. On the other hand, high-level tasks include more participatory activities such as creating or editing multimedia and creating or maintaining websites. School activities have been split among the same categories.

On average, netbook students reported performing 40% general Internet tasks and 40% high-level tasks. On the pilot level, the differences between the proportion of high-level tasks performed in school and out of school does not appear to be different, but more Internet tasks were done out of school (Chart 3, pilot average). Moreover, netbook students were asked to self-evaluate whether they had become more skilled in a number of ICT related tasks since using the netbook. On average, 37% reported skilling-up: most with Internet related tasks (45%), but also in high-level tasks and e-safety tasks (both 35%).

Highlighting trends across pilot countries: When observing usage patterns across the pilot countries, Chart 3 also shows differences. In Spain, Turkey and the UK, students reported performing a higher than average proportion of high-level activities in school.
Chart 3. Internet tasks and high-level tasks performed by netbook students in and out of school, chart sorted in descending alphabetical order.

2.2 Using netbooks out of school

Q4: How often did students take netbooks home? During the Netbook Pilot, 73% of netbook students reported taking the netbooks home almost every day (Chart 4, pilot average). 17% never took their netbook home and 10% reported occasionally taking it home. 29% of netbook students said they used the netbook outside of official school hours for after-school activities. Of these, 14% are students who never took their netbook home.

Highlighting trends across pilot countries: More than 80% of netbook students in France, Italy and Turkey took their netbooks home almost every day, whereas in the UK, Spain and Germany a third of students reported never taking them home. Although the Netbook Pilot encouraged allowing students to take their netbooks home, different school policies prevailed. More than a third of the students in Italy, Spain and Germany used the netbook in school for after-school activities (Chart 4).

Chart 4. Use of netbooks out of the school hours, chart sorted in decreasing order by “almost every day”.
Q5: What kinds of learning opportunities did netbooks offer out of school and within the family? When it comes to the informal learning opportunities that netbooks can offer outside of school hours, 47% of netbook students said they used them to look for extra information on topics taught at school. 44% followed current events such as news and weather. Moreover, 37% said they looked for information on topics that are not taught at school but are of interest to them, and 30% said they developed skills related to their hobbies. Interestingly, 23% reported looking for information in their interest areas also in other languages than their mother tongue (see more in Table 3).

Since the start of the Educational Netbook Pilot, 43% of netbook parents said that they had discussed with their child the use of netbooks at least once a week. One in five talked about it almost every day, but more national variety was reported (see more in Table 4a, b). 76% of parents felt that they knew enough about what their child did when she/he used the netbook or other ICT devices. One in six said they knew most of what was done, but that there were many things they are not aware of. More than half of the netbook parents had established clear agreements with their child about the use of the netbook and ICT devices both in school and out of school. A quarter of parents said that such terms were not needed, as they trusted their child.

Common activities are found around the netbook within the family: 91% of parents said that they had done school related activities with their child on the netbook and around half said that they had made Internet searches and used online reference material. 80% of netbook students, on the other hand, said that they had helped the adults in their family with ICT devices, for example, to use email (48%) and to find information and websites that they needed (43%). A third even said that they had helped set up an account on a social networking site (Table 4c). 53% of parents agreed that the use of netbooks in and out of school had had an impact on their opportunities to be involved in their child’s education.

Chart 5. Where were netbooks used when out of school (parents’ and students’ views), chart sorted in decreasing order by students.
When netbooks were taken home, two-thirds of the students carried them in their school bag with a cover and a quarter in a separate computer bag (most used by Turkish and Italian students). Students said that they used their netbook at home (83%), but other places were reported too. A quarter also used it at a friend’s home (similar in all countries) and 13% in public places such as libraries. For differences in parents’ and students’ views on where the netbooks were used, see Chart 5. On this issue, the differences in response rates between parents and students should be noted. 63% of students said that they used the netbooks mostly alone, whereas the rest reported using them with friends and/or parents or other adults present. Two-thirds of the students said they used the netbook on their own desk, in their bedroom, 40% in the living room and even 15% in the kitchen (see more in Table 5).

2.3 About netbooks in school

Q6: How often were netbooks used in school? Netbook teachers were asked to estimate the percentage of time they had used netbooks in school during their teaching between March and May 2011. Half of the teachers said that they had used netbooks between 11-49% of their teaching time and a third said they had used them in more than half of their teaching time.

Highlighting trends across pilot countries: Teachers in Turkey and Spain reported using netbooks more often; half reported using them in more than 50% of their teaching time. Details of national differences are shown in Chart 6.

Chart 6. “From March to May 2011, what percentage of time have you used netbooks in your teaching?”, chart sorted in descending alphabetical order.

Q7: With what school subjects and tools were netbooks used? Both in school and out of school, netbook students mostly studied the same school subjects using their netbooks. These included Mathematics/Geometry, History, Geography, Modern foreign languages and National language and literature. The same topics prevailed in all countries with slight differences. These were also the subjects most taught by netbook teachers; however, differences are seen across pilot countries (see separate country reports for details). The most used educational tools that students reported using with these subjects include educational school portals or learning platforms (37%) and collaboration tools, e.g. blogs, social networking sites, wikis (36%), followed by office tools (33%), subject specific educational software (29%), communication tools (25%) and digital resources (24%).
Highlighting trends across pilot countries: In Germany, Spain and Turkey students most often used collaboration tools and educational school portals or learning platforms with their netbooks. In France and the UK, students used most often educational school portals or learning platforms and office tools with their netbooks. In Italy, it was office tools and subject specific software. These percentages include both in and out of school usage (Table 6).

Chart 7. Tools that teachers used during their netbook classes, chart sorted in descending alphabetical order.

Netbook teachers used tools and ICT devices to support their instruction during netbook classes. Projectors were used, on average, by two-thirds of the netbook teachers daily or 1-3 times a week in all countries but in Italy and the UK interactive whiteboards were used more frequently. A quarter of netbook teachers reported using virtual learning environments or learning management systems frequently; here Spanish and UK teachers reported more frequent usage than other countries (Chart 7).

Q8: How did teachers “orchestrate” learning with netbooks? At the heart of 1:1 pedagogy is how teachers alternate different aspects of teaching during netbook lessons. To help and support initiating and running netbook classes, netbook pilot teachers were offered examples of 1:1 pedagogical netbook scenarios created by European Schoolnet and other pilot teachers. The scenarios highlight the fact that the learners have access to netbooks at all times, taking advantage of a blended learning approach alternating online and offline activities, but also alternating different teaching paradigms. These fall under one of the following: frontal teaching, e.g. teacher demonstrates and explains to the whole class or a student gives a
presentation for the whole class; **individual processes** which include teacher supporting and explaining things to individual students, or students working individually at their own pace or at the same pace; and **collaborative processes** such as students working in groups.

In general, netbook teachers reported alternating frontal style teaching (83%) with collaborative (81%) and individual (80%) processes in every lesson or sometimes (Table 7). If one looks at this aspect in every lesson, a different picture emerges: on average, 25% reported frontal style teaching, 26% individual and only 12% social processes. Moreover, in subject studies, teachers alternated between students’ individual work whilst using the Internet (80%) and off-line (51%), as well as students’ collaborative work whilst using the Internet (71%) and without (45%).

**Q9: What kinds of problems did teachers encounter?** Netbook teachers encountered various problems in school. They can be categorised in five different types: problems related to the **netbook itself** (e.g. hardware issues, software incompatibility); problems caused by the **school environment** (e.g. firewall issues, incompatibility between netbooks and the school technical infrastructure, no suitable places to use netbooks), **user related issues** (e.g. uncharged batteries, problems with trackpad), **problems with connecting to the Internet** (this could be related to other categories) and **other behavioural issues** (e.g. distracted by games).

Within these categories, netbook teachers reported the following: 62% had problems connecting netbooks to the Internet, 46% had user related issues, 44% reported problems related to the school environment, 40% encountered behavioural issues and 39% had problems related to the netbook and its hardware (Table 8).

3% of all netbook teachers said that they had encountered technical problems of some kind which obliged them to suspend the use of netbooks totally; 47% said they had them “often” or “sometimes”. Half of the netbook teachers said that this did “not at all” affect negatively their teaching and instruction; however, 33% estimated it did so to “a small extent” and 18% to “a moderate to a very great extent”.

### 2.4 School environment supporting and empowering netbook teachers

**Q10: How did school vision and curriculum enable organising netbook teaching?** 76% of netbook teachers felt that their school’s ICT vision supported the use of netbooks. On average, 64% of netbook teachers agreed that their school’s time organisation (e.g., fixed lesson times) and space organisation (e.g. classroom size and furniture) was suitable for netbook usage in education. About half agreed that their school head actively encouraged them to pursue professional development (PD) activities regarding netbook integration; that the school provided enough technical, institutional, pedagogical and financial support (56%); that their curriculum facilitated the use of netbooks in teaching and that they had the time and flexibility to work on netbook projects that are part of the curriculum (48%).
Highlighting differences in trends across pilot countries: Regarding teachers’ opinions on school giving enough technical, institutional, pedagogical and financial support, it can be observed that in Spain and Turkey, teachers agreed most on these statements (73% and 64% respectively), whereas in the UK, Italy, Germany and France, there was slightly less agreement (44%, 47%, 49% and 51% respectively). In the area of statements regarding professional development opportunities, only 30% and 36% of UK and French netbook teachers agreed, as opposed to the pilot average of 57%.

Q11: How did netbook teachers collaborate with each other? 1:1 pedagogical scenarios are just one of the support mechanisms for teachers in the Netbook Pilot; additionally, each participating school had been asked to form a netbook team of teachers who taught various subjects to netbook students. It was recommended that the netbook team would include a person able to give IT support and advice with netbooks, and someone from the senior management team. Moreover, the idea behind the netbook team was to get teachers with different levels of ICT skills to work together in order to share their knowledge and therefore support peer-learning opportunities within the organisation. Among the participating schools, 64% had teams with mixed ICT skills and at least one person with expert level experience of ICT use, 31% had netbook teams without any expert level person and 5% had only expert level user(s).

Netbook teachers reported various forms of co-operation within the school, both among the netbook team and other colleagues. Following OECD’s indices for teachers’ co-operation (OECD, 2009), similar ones were devised for exchange and co-ordination activities and for professional collaboration (Table 10). Across the pilot countries, teachers reported more exchange and co-ordination activities (64%) than professional collaboration (35%). 77% of teachers reported taking part in co-operation activities through face-to-face communication (e.g. meetings, informal dialogue) and 34% reported on-line communication (e.g. e-mail, on-line meeting tools & platform).

Professional collaboration still remains something of a rarity in the school world; for example, 57% of netbook teachers said they had never engaged in joint activities across different classes and age groups, whereas only 17% said they had never exchanged teaching material with their colleagues (i.e. exchange and co-ordination activities). In regards to co-operation with teachers in another school, the pilot average was rather low: 12% across schools within the same country and 7% across countries. However, a third of the teachers said that in the future they would be interested in European cooperation projects such as eTwinning whilst using netbooks.
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Chart 8. Netbook teachers’ co-operation during the Netbook Pilot, chart sorted in descending alphabetical order.

Highlighting differences in trends across pilot countries: 52% to 78% of teachers participated in exchange and co-ordination activities, more so in Spain, Italy and Turkey (Chart 8). As for professional collaboration, 30% of teachers reported such practices, except in Turkey, where it was more common (56%) than in other pilot countries.

Q12: What kinds of support are needed to build teachers’ confidence in netbook integration? 72% of netbook teachers said that they had read 1:1 pedagogical netbook scenarios and the same proportion had created their own scenarios (close to 300 scenarios are documented by teachers on the netbook community; additional ones exist in national work areas, e.g. in Spain, Italy). Additionally, 36% said that 1:1 pedagogical netbook scenarios had increased their understanding of different ways to work with netbooks. National variations can be observed: about half of the netbook teachers in Italy and Turkey found them helpful.

The second form of support during the Netbook Pilot was through formal and informal professional development (PD) activities. All the participating teachers were invited to the on-line community on the netbooks website, in addition to which pilot countries had various national and local...
support available (e.g. the Spanish coordinator, Instituto de Tecnologías Educativas of the Ministry of Education, organised an on-line Moodle training course for all Spanish netbook teachers – see more in Pilot Setup for each country). The index of professional development activities attended with positive impact shows that, on average, 47% of teachers had received some form of PD since January 2010 and considered that it had had a positive impact on their development as a teacher (Chart 9). Notably, the most popular category of PD was informal dialogue with teacher colleagues to improve teaching; 86% of netbook teachers said they had participated in it and 81% said it had had some positive impact.

At the end of the Netbook Pilot, two-thirds of the netbook teachers reported a high level of confidence in integrating netbooks into their teaching, even if about half of the netbook teachers reported having started with a beginner or moderate level of ICT skills (49%). Spanish netbook teachers reported the highest level of confidence in netbook teaching (75%), a finding which coincides with other findings related to how Spanish in-service training uses on-line platforms (Wastlau, 2010). The line-up of the other countries has many similarities; 60-70% of teachers report being confident in integrating netbooks in their teaching (Chart 9).

Chart 9. Supportive and empowering school environment, chart sorted in descending alphabetical order.

Netbook teachers estimated various positive gains in their professional development regarding the integration of ICTs in teaching (index of self-evaluated impact of the pilot on PD): 70% said they now better understood how to integrate ICT into subject teaching and were more prepared to work
collaboratively with other teachers. This all came with a cost: 69% of netbook teachers reported more work in planning netbook classes, more classroom management because of the netbooks, etc. (see index of negative aspects in Chart 9). Increased workload is frequently reported by teachers who start to use ICT devices, but this mostly applies to the testing and appropriation phase, which the Netbook Pilot can also be considered to be.

Finally, for 80% of netbook teachers more motivated students were the most rewarding feedback for participating in the Netbook Pilot. 40% also agreed that more training opportunities were a good reward, whereas 17% mentioned changes in their work responsibilities that made the job more attractive and, for 16%, it was students’ better test scores. Moreover, 82% of teachers said they were interested in continuing using netbooks in the next academic year and 79% said they would recommend the use of netbooks in schools to their fellow teachers!
... learners' motivation, good classroom atmosphere, and more independent and individualised learning

- 71% of all respondents agreed on the netbooks’ motivational factors on the learner. Teachers and parents agreed on learners being more motivated in learning and school; however, 58% of students also thought so.
- Two-thirds of teachers and parents agreed on the positive impact on more individualised learning, i.e. learners learning at their own pace and time.
- More consensus existed between students’, teachers’ and parents’ opinions on the positive impact through improvements in class atmosphere and schoolwork becoming more enjoyable.
- 54% of netbook students agreed that using netbooks for school related activities has a positive impact on more independent learning.

Observations based on the Netbook Pilot experience:

- A number of psychosocial factors are related to the use of ICT devices, e.g. netbooks, in education. They affect learners’ general motivation in school and learning, but also social factors such as collaboration and general atmosphere in class, as well as more ownership of learning processes. The Netbook Pilot evaluation findings point in the same direction as current research in the field, where motivation is recognised as a driver in engagement in learning and in helping to combat disengagement from schooling in general (e.g. Condie, 2007, OECD, 2010a).
- Netbooks students’ lower percentage in motivational issues might be related to the fact that students were already familiar with a wide range of ICT devices, or even to the fact that teachers assigned only trivial netbook tasks to students. More investigations into what types of netbook tasks motivate learners are recommended.

... students’ formal and informal learning opportunities out of school

- The majority of students took their netbook home (73%) and about a third used the netbook for after school activities.
- Half of the students reported using their netbook most for school related activities, such as homework and contacting teachers, and looking up things on the Internet.
- 40% of students also reported general Internet tasks (looking things up, communication, leisure); the same proportion also carried out high-level tasks, which included more participatory activities such as the creation or editing of multimedia or websites.
- Less than half of the students used the netbook also for informal learning opportunities outside of school hours: 47% of students looked for information on topics taught at school, 30% developed skills related to their hobbies and 23% looked for information in a language other than their mother tongue.
- In general, 37% of students reported skilling-up with ICT related tasks: most with Internet tasks (45%), but also in high-level tasks and with e-safety tasks (both 35%).
Introducing Netbook Pedagogies in Schools

Observations based on the Netbook Pilot experiences:

- The above findings do not show that students did more educational activities because of the netbook at home, but illustrate that students did not only use netbooks for leisure activities.
- Allowing students to take netbooks home seems to have stimulated learning opportunities around both formal school tasks, e.g. homework, but also informal learning opportunities. Also, many high-level tasks on the netbook took place outside of the school hours, which could potentially extend learning opportunities. However, discussion of the second digital divide regarding students’ economic and social background shows that students from a disadvantaged background are more likely to engage in high-level tasks within the formal school context (OECD, 2010b), an issue that the Netbook Pilot is not in a position to answer.

... involvement of parents in their child’s education

- 91% parents’ stated that they had done school related activities with their child on the netbook.
- Three-quarters of the netbook parents considered they knew enough about what their child did when she/he used the netbook or ICT devices.
- Two-thirds said that they had discussed with their child the use of netbooks daily or at least once a week.
- 80% of netbook students said that they had helped adults in their family to use the Internet. Most help was given in using email and finding information and websites needed.
- More than half of the parents acknowledged the positive impact of netbooks in and out of school on their opportunity to be involved in their child’s education.

Observations based on the Netbook Pilot experience:

- Netbooks, when taken home, stimulated interaction and communication among students and parents. The Netbook Pilot evaluation indicates that a vast majority of parents are concerned by their child’s use of technology, and communication patterns between parents and their children underline the importance of paying attention to a responsible use of Internet-related technologies at home and in school.
- Setting clear boundaries for educational use as well as for leisure activities guarantees that online safety aspects are discussed and taken into account. It is recommended that a three-party (i.e. learner, teacher and parent) agreement, or a charter, on the use of the netbook and other ICT devices be created.
- More pointers on online safety can be found on the Insafe website run by the European Network of Awareness Centres, promoting safe, responsible use of the Internet and mobile devices among young people.
Three-quarters of netbook teachers felt that their school’s ICT vision supported the use of netbooks.

About half of them agreed that the curriculum that they implemented facilitated the use of netbooks in education.

About half of them agreed that the school provided enough technical, institutional, pedagogical and financial support for the use of netbooks in education.

Teachers and students used a variety of tools with netbooks such as projectors, interactive whiteboards, school portals and platforms, collaboration tools, etc., to create a media-rich learning environment.

The majority of netbook teachers read 1:1 pedagogical scenarios and reported alternating different teaching paradigms (e.g. frontal teaching, individual and collaborative processes) with netbooks at least sometimes, and alternating work with and without use of the Internet.

82% said they were interested in continuing using netbooks in their next academic year, showing a high level of buy-in by teachers into new ways of working.

However, two-thirds reported that their instruction with netbooks was hindered by problems with connectivity to the Internet and 44% reported problems related to the school environment.

Observations based on the Netbook Pilot experiences:

This evaluation shows that netbooks were not only used to support a more traditional way of teaching in schools, e.g. a teacher using ICTs in frontal teaching to present or only when ICTs fitted best with traditional practices, but also in a more pedagogically oriented way, alternating different teaching paradigms and tools.

To encourage such use, more innovative and media-rich scenarios should be created and applied in schools, preferably by teachers themselves to encourage up-take and ownership.

1:1 pedagogical scenarios that focus on alternating different teaching paradigms, but also tools and tasks, should be an integral part of schools’ ICT vision. This should be endorsed through actions and services, e.g. support co-designing such scenarios around the local curriculum, through good connectivity to the Internet, and availability of and access to other ICT devices.

The above suggestions point in the same direction as previous case studies on 1:1 teaching programmes which have shown that teachers’ beliefs about students, the potential role of technology in learning and the availability of high-quality digital content influence the degree to which they use ICT devices with students (Trimmel and Bachmann, 2004; Windschitl and Sahl, 2002, Valiente, 2010).

The Netbook Pilot encouraged teachers to work in netbook teams including several actors in the school, e.g. different subject teachers, ICT support staff and senior management.

The evaluation showed that two-thirds of schools created netbook teams with mixed levels of ICT competences, potentially allowing for more peer-learning possibilities though sharing practices.

Pilot teachers engaged in various forms of co-operation both within the netbook team and with other colleagues: 64% engaged in exchange and cooperation, and 34% in professional collaboration activities.

Three-quarters of the teachers reported having taken part in face-to face cooperation activities and 34% reported doing so via online communication, such as via email, online meetings or a platform.
• 81% of the netbook teachers estimated that informal dialogue with their colleagues to improve teaching had a positive impact on their development as teachers.
• Whereas netbook teams potentially boosted exchange and co-operation among teachers within a school, such activities across schools and countries still remain low.
• Professional collaboration appears something of a rarity in the school world, an example of which is that more than half the netbook teachers had never engaged in joint activities across different classes and age groups.
• Positively, though, a third of the netbook teachers said that in the future they would be interested in European cooperation projects such as eTwinning whilst using netbooks.

Observations based on the Netbook Pilot experiences:

• There should be more opportunities for teachers to share and learn from one another within a school. Creation of school-based netbook teams can support both formal and informal exchange, building a solid, locally-shared knowledge-base on pedagogical practices around the use of ICT devices, and around collaborative practices such as cross-curriculum activities.
• Combining local with global sharing seems an interesting way for netbook schools to evolve from sharing among colleagues within the school to sharing across schools and countries. Participating in actions such as eTwinning would also open up new ways for netbook students to learn.
• The Netbook Pilot’s on-line community with its 1:1 scenario wiki and blog has proved successful and has been taken up by netbook teachers. A continuation of the platform is planned to foster sharing and collaboration among teachers across borders.

... teachers’ confidence in integrating ICTs into teaching

• As a result of working with netbooks over the period of the Netbook Pilot, two thirds of netbook teachers reported high confidence in integrating netbooks into their teaching. This was despite the fact that half of the netbook teachers reported having a beginner or moderate level of ICT skills.
• The Netbook Pilot also showed that 1:1 scenarios could, to a certain extent, increase teachers’ understanding of different ways to work with netbooks.
• Other forms of support for teachers’ professional development, such as the on-line in-service training for Spanish teachers, were accompanied by high levels of pedagogical confidence in teachers.
• Positive gains in professional development, as reported on average by 70% of netbook teachers, included a better understanding of how to integrate ICT into subject teaching and how to collaborate with other teachers.
• For 80% of netbook teachers, more motivated students were the most rewarding feedback of working with netbooks. Other rewards included more training opportunities in new ways to teach (40%).
• 79% would recommend the use of netbooks to their fellow teachers. This “customer satisfaction” question also indicated that a majority of netbook teachers had gained professional confidence about netbooks.
• However, teaching with netbooks as a new tool for teachers requires more work in planning netbook classes: on average 69% report negative aspects such as more work with classroom management and more time needed to prepare classes.
Observation based on the Netbook Pilot experience:

- The Netbook Pilot with a duration of a school year can be regarded as a “testing/appropriation phase”. The literature shows that as soon as ICT devices become part of regular teaching, teachers usually report the contrary, i.e. the way they manage the lessons and their preparation becomes less time-consuming and they recognise this.
- Sharing of practices can potentially help teachers build confidence in ICT integration in education. It can be speculated that when teachers read 1:1 scenarios created by other teachers, these examples lower the entry level to try it in the classroom. Successful pedagogical models are the key for implementing changes.
- Integrating new ICT devices in teaching and learning should not only be regarded as an exercise of hardware distribution in schools, but as a way to transform educational practices. Positive gains are possible even for teachers whose ICT skills vary; however, no easy gains should be expected and teachers’ time investment should be taken into account.
- Even if most teachers consider more motivated students an incentive to invest in ICT devices in education, their desire for training in more innovative practices should be taken seriously.

Other observations from the Netbook Pilot through local consultation: The netbook initiative triggered a number of investments in participating schools to define a more digitally oriented school vision and strategy. In some cases, anecdotal evidence shows that this would not have taken place without participation in the Netbook Pilot. Typical examples include: the investments schools made to equip themselves with WiFi; a number of schools deciding to continue to invest in netbooks and/or other hand-held devices in addition to the equipment that they keep after the Netbook Pilot; the decisions some ministries of education took to train teachers, as in Spain. Therefore, the Netbook Pilot was a trigger for defining a more strategic development orientation regarding digital learning processes at school level, which affected individuals as well as institutions, but in some cases, the ripple effects were seen also on the system level, such as the in-service training programme in Spain.
Introducing Netbook Pedagogies in Schools

Conclusion

Since January 2010 until the end of the school year 2011, the Acer-European Schoolnet Educational Netbook Pilot worked with 245 classes in secondary education in six European countries to help implement 1:1 pedagogies and to study the best ways to support schools and teachers in their endeavours. All in all, more than 7000 students and 1000 teachers used netbooks over the Netbook Pilot period. The take-home messages from the Netbook Pilot include six issues that are all of importance when working towards more systematic 1:1 pedagogy implementation in education.

- First, the capacity of ICT devices such as netbooks to boost learners’ motivation, a good classroom atmosphere, and more independent and individualised learning brings added value to everyday work in school.
- The fact that students have the ownership of netbooks and can use them after the school day offers possibilities to extend learning opportunities and educational activities outside official school hours.
- Netbooks also seem to work as a bridge facilitating parents’ involvement in their child’s education.
- The fourth issue concerns the systematic vision for pedagogical change: 1:1 pedagogy, when implemented as part of the whole school approach with a systematic vision for pedagogical change empowers and supports teachers in their classroom practices.
- Empowering teachers can be helped by facilitating teachers’ exchange and professional cooperation both within the school and across schools. An important element in empowering teachers is the offering of formal and informal opportunities for professional development, e.g. in-service training, netbook teams, on-line communities, informal dialogue with teacher colleagues, as well as good examples of practices such as 1:1 pedagogical scenarios.
- Finally, helping to build teachers’ confidence in integrating ICTs into teaching and learning is one of the cornerstones of the success of 1:1 pedagogy and its drive for pedagogical change.

Both Acer and European Schoolnet are glad to announce that the Netbook website and teachers’ online community (www.netbooks.eun.org) will continue to flourish even after the Netbook Pilot and will be open to any teacher interested in 1:1 pedagogy. With more than 900 members, close to 300 teacher-generated 1:1 pedagogical scenarios and a vibrant forum, the online community has proved to be indispensable for sharing good practices in netbook pedagogies.

The Netbook Pilot organisers thank everyone involved in the Netbook Pilot over the whole period of time. Special thanks to national coordinators, pedagogical coordinators and all the teachers for their hard work and time investment. We look forward to interesting school co-operation involving both teachers and students in ever more innovative ways of using 1:1 pedagogies!
Introducing Netbook Pedagogies in Schools – France

1 The Pilot Setup: France

Pilot schools

- 16 schools, including 39 classes, were selected for the pilot, in collaboration with the regional inspectorate of the Académie de Nancy-Metz.
- The number of netbook classes in these schools varied from one to four: 3 schools had 4 netbook classes; one school had 3 classes; 11 had 2 classes and one school had 1 netbook class.
- Nine of the schools participated in the pre-pilot in the previous semester (January 2010 – July 2010).
- ICT level of the pilot schools according to teachers’ estimation: 12% were at the beginning phase, 42% had an average level and 45% had an advanced level.

Questionnaire

- At least one teacher replied to the questionnaire in each school (n=113)
  - 101 were teachers; 6 ICT coordinators; 6 other
  - 58 teachers had been part of the pre-pilot
  - 60% had been teaching for more than 10 years
  - ICT skills: 44% self-evaluated as having beginner or moderate ICT skills, 35% good ICT skills and 19% said that they were experienced or confident users

- At least one student replied to the questionnaire in each school (n=637)
  - 50% boys, 50% girls
  - 11 years old=4%, 12 years old=20%, 13 years old=28%, 14 years old=7%; 15 years old=19%, 16 years old=19%, older=4%
  - ICT skills: 30% self-evaluate as having beginner or moderate ICT skills, 55% good ICT skills and 14% said that they were experienced users (1% blank)
  - 63% had access to a laptop or mini-computer at home (aside from the netbook received in the pilot)

- The parents’ questionnaire was completed by 333 individuals
  - Roles: 73% mother, 25% father, 3% other
  - ICT skills: 45% self-evaluate as having beginner or moderate ICT skills, 40% good ICT skills, 11% said that they were experienced or confident users and 4% were non-users

Events

- Launch meeting in Nancy-Metz: 25 January 2010
- Evaluation meeting in Nancy-Metz: 25 June 2010
- Final evaluation meeting in Nancy-Metz: 21 October 2011
This section highlights the emerging trends on netbook use in an educational context. It focuses on the aspects of the evaluation framework: how learners and teachers use netbooks in various educational contexts, e.g. in and out of school; individually and collaboratively; in educational use and leisure use. Firstly, the subjects in which netbooks were used are reported, followed by how teachers planned and used netbooks in class. Finally, reports are given on support from 1:1 pedagogical netbook scenarios and teachers’ confidence in integrating netbooks. 1:1 pedagogical scenarios help teachers to “orchestrate” the learning situation with netbooks, focusing on the interplay between different types of activities, and between individual and social processes.

2.1 In which subjects were netbooks used and how much?

French netbook teachers indicated 23 school subjects that they taught with netbooks. The most common subjects were: ICT/Informatics (22%), followed by Mathematics/Geometry (19%), Foreign Languages and History of Art (both 15%), History (14%), Geography and Biology (both 13%); Physics (12%) and French Language and Literature (10%).

Netbook students estimated that they used their netbooks in school mostly in Mathematics/Geometry (54%), which was by far the most reported subject area, followed by History (38%), Chemistry (27%) and Geography (24%). French students also used netbooks in Modern Foreign Languages (18%), Physics (18%), French Language and Literature (15%), Music (13%), Informatics/ICT (13%) and Biology (11%).

Between March and May 2011, half of the French netbook teachers used netbooks between 11% and 50% of their teaching time, while 22% said they used them more than 50% of the time and 19% between 1-10%. 8% answered less or that they could not estimate how often they used it.

2.2 How were netbook classes planned and run?

Most French netbook teachers, when preparing their school activities, used the notebook given to them by the pilot organisers (96%). Teachers mostly prepared their lessons alone at home (96%), whereas 20% also said that while at home, they used online tools to collaborate and prepare activities with other teachers. 72% of teachers also prepared lessons and homework alone in school, however, 39% said that they collaborated with other netbook teachers in their own school and 23% said they worked with colleagues who were not part of the netbook team. Moreover, 5% said they worked with other netbook teachers in other schools in France. On average, 22% of French netbook teachers said that they collaborated with other teachers when preparing their teaching activities (pilot average 29%, Table 10).

For in-class activities, French netbook teachers mostly planned for individual work (85%), focusing on activities both on- and off-line. They also planned for individual student work to be carried out at home (59%). About half said that they planned for collaborative student work in class (56%) and 18% said they planned plan for collaborative student work to be carried out at home.

Teachers were asked how they alternated different aspects of teaching during their actual netbook lessons according to the following paradigms: frontal teaching, e.g. the teacher demonstrates and explains to the
whole class or a student gives a presentation for the whole class; individual processes, which include teacher support and explanations to individual students, or students working individually at their own pace or at the same pace; and collaborative processes such as students working in groups. French netbook teachers said that they alternated individual (74%) and collaborative processes (72%) and frontal style teaching (67%) every lesson or sometimes. On average, 72% of French netbook teachers reported alternating between different teaching aspects either every lesson or sometimes (pilot average 81%, table 7).

Regarding the school subjects reported in section 2.1, French teachers reported that students worked alone using the Internet (74%) and without the Internet (63%). Around half of the French teachers also said that their students worked together with other students either off- or online. Moreover, 59% said that they used a projector with netbooks at least 1-3 times a week (26% said never/not available). Similarly, 36% said that they used an interactive whiteboard with netbooks (56% said never/not available), but only 5% of French teachers said that they used a virtual learning environment or a learning management system with a netbook in that same frequency of time. The questionnaire did not explicitly refer to French term "environnement numérique de travail" which might explain the low percentage.

As for French netbook students working on the subjects reported in section 2.1 while in school, 76% reported working individually online, 38% collaboratively online and around one in 5 reported off-line work. The most popular tools used with these school subjects were educational school portal or learning platform and office tools (e.g. word editing), both 37%). They were followed by office tools subject specific educational software (33%), digital books, digital resources, and communication and collaboration tools (all the latter around 20%).

**Chart 10. For what activities did French netbook students use the netbook in and out of school?**
On average, 27% of different activities were reported by French students while using the netbook in school (pilot average 36%). These activities are divided into five categories: looking up things on the Internet (e.g. use search engines and online reference sources), school related activities (e.g. homework, contacting teachers, checking the school website), communicating (e.g. with relatives and family friends, online forums and chats, and social networking), creating (e.g. creating websites/writing blogs, editing/creating photos and videos) and leisure (e.g. music, games, videos). In school, the most popular were school related activities (45%) and looking things up on the Internet (45%). 26% of students reported creating, e.g. using multimedia to edit/create photos and videos, 22% communicating and 16% leisure related activities (see Chart 10, Table 2). Aside from in-school activities with the netbook, Chart 10 also shows out of school activities as well as general activities that students have reported doing both in and out of school.

Most French students said that in school, they kept their netbook with them at all times because it was practical (39%), while another 22% said that they did so because their school did not have any other place to store the netbook. 10% of French students had a locker available in their school.

2.3 How did 1:1 pedagogical netbook scenarios support teachers?

To help and support the initiating and running of netbook classes, netbook pilot teachers were offered examples of 1:1 pedagogical netbook scenarios created by European Schoolnet and other pilot teachers. 70% of French teachers said that they had read pedagogical netbook scenarios and 54% had created their own 1:1 scenarios (includes answers: rarely, sometimes, often, all the time). 29% of French teachers had never read any 1:1 scenarios.

31% of French netbook teachers agreed that using scenarios increased their understanding of different ways of working with netbooks. A large proportion of the French netbook teachers had not formed an opinion on the issue (44% neither agreed nor disagreed).

All in all, French netbook teachers seem rather confident about their use of netbooks in teaching activities, two-thirds agreed with all statements related to their ability to deal with netbooks in class (pilot average 67%). More specifically, 63% said that they now understood the potential benefit of netbooks in teaching and that they knew how to integrate netbooks into their teaching effectively. Moreover, three-quarters of the French netbook teachers knew which software to use on netbook and 74% knew which content and other material to use with netbooks. Two-thirds said that they could find enough content and learning resources in their national language, whereas 61% said that they could find enough good online material to be used with students in general.

Many French netbook teachers estimated that learning how to integrate netbooks into their teaching came with some cost: 78% said that more classroom management was needed with netbooks and 68% said that using netbooks has increased their workload. Two-thirds estimated that they needed to prepare classes more carefully when using netbooks (67%). Many also estimated that they did not have enough time to prepare for specific netbook activities (66%), so thankfully, about half reported that they received support and examples from other netbook colleagues (49%).
Introducing Netbook Pedagogies in Schools – France

3 Students’ use of netbooks

This section first looks at students’ use of the netbook that they received from the Acer-European Schoolnet Educational Netbook Pilot outside official school hours. It then elaborates on the aspects of the evaluation framework such as educational use vs. leisure use and individual vs. social processes. Aspects regarding how netbooks facilitate interactions within the family are also discussed.

3.1 How were netbooks used outside school hours?

94% of French netbook students said that they took their netbook home almost every day. This was the highest percentage of all the pilot countries. Only 1% said that they had never taken their netbook home. Most students brought their netbook home in their school bag with a cover (73%), again, the highest percentage in the pilot. 14% said they had a separate computer bag, whereas 11% carried their netbook in their school bag without a cover. (Table 5 a, c)

French netbook students were asked where they used their netbooks outside school hours. Aside from only using them at home (90%), students reported using their netbooks in multiple places (see Chart 11). One third of students said that they also used them in school for “after-school activities”; one quarter said that they used them at their friends’ houses (only 6% of French parents reported that their children used them in their friends’ house); 20% said that they also took their netbooks with them on holidays. Moreover, 12% said that they used them in public places such as libraries and 5% on their way home from school, e.g. in a school bus.

Chart 11. Where did French students use netbooks? Students’ and parents’ opinions
French students said that when they took their netbook home from school, they mostly used it in their own bedroom (78%), on their own desk (62%), in the living room (43%), in a dedicated computer room (22%), in the dining room (20%) and in the kitchen (16%) (Table 5 b). Moreover, students report that they mostly used it on their own (94%), with parents or an adult around (17%) and with friends, brothers or sisters and other children around (14%). These percentages match rather closely with what parents reported about their children’s use of netbooks at home. Only 1% of parents said that they had used the netbook alone without their child being present.

3.2 What formal and informal learning occurred out of school?

When comparing the activities for which netbook students used their netbook in and out of school, it can be observed that French students used their netbooks almost twice as much out of school (49%) than in school (27%), see Chart 10, “average of all activities”. 57% said that they used the netbook most often for studying, e.g. doing their homework and connecting to their school’s website; 26% reported that they used it most often on social networking tools and 17% for playing and entertainment. The netbooks were reported to be least used for playing and entertainment (42%), social networking sites (36%) and studying (22%). As for the most popular activities among French students, they were in the categories of looking up things on the Internet (52%), school-related activities (50%) and communicating (47%). Moreover, 46% reported creating (e.g. multimedia) and leisure activities (see Chart 10, “out of school”).

Out of school, French students reported using their netbook for the same subjects as in school (see section 2.1). The same tools were reported to be used with these school subjects out of school as in school, i.e. office tools (37%), educational school portals (35%) and subject-specific educational software (28%). Communication and collaboration tools were used more often out of school than in school (11% and 8% respectively), as were digital resources, media tools, mobile devices and games (Table 6, see “out of school”). Students reported working individually about as often outside of school hours as in school, but out of school they did less collaborative work.

To gauge the informal learning opportunities brought by netbook use outside of school hours, the netbook students were asked about activities not related to school work or homework. French netbook students reported many different usages: following current events (49%), looking for information on topics of interest to them that are not taught at school (41%), to develop skills related to their hobbies, e.g. learning to play guitar from YouTube videos or getting practical advice from a forum about a question related to their hobby (39%), looking for extra information on topics taught at school (38%) and looking for information in their interest area in other languages than their mother tongue (28%).
3.3 How did netbooks stimulate students’ interaction within their families?

28% of French netbook students said that since receiving their netbook, they had spoken with their parents about their netbook use at least once a week. The perception of the parents of these French netbook students differs somewhat: 40% reported having discussed with their children at least once a week. 16% of students said that they discussed netbook use with their parents almost daily, whereas 12% say that they never talked about netbooks with their parents and 8% said “I don’t know”. For the remaining 36%, the netbooks were discussed at least once since the start of the pilot.

French netbook parents were asked for what kind of activities they had used the netbook with their children: 95% said they had used it for educational school-related activities, 30% to check the school website for announcements and 27% to contact the school or a teacher about issues related to school activities. Moreover, 48% of parents said that they used search engines and online reference sites with their child. The French parents’ average on this set of questions was 20% (pilot average 23%).

French netbook students, on the other hand, said that they had helped the adults in their family to use the Internet; 51% said that they helped them to use e-mail, 49% to fix a broken Internet connection, 43% helped them to start using browsers or to upload photos and 40% to find information and websites that their family members needed. One-third of the French netbook students helped an adult in their family to set up an account and profile on a social networking site (35%) and to chat (25%). 23% said that they had never helped any of the adults in their family with Internet-related activities. On average, students reported 35% of activities in helping adults in their family (pilot average 32%). (Table 4)

3.4 How did parents perceive their child’s netbook usage?

French netbook parents were asked to estimate how much time their child used the netbook for education (e.g. homework, connecting to the school website). 28% estimated that they used it for education less than 1 hour per week, 39% estimated 1-3 hours per week and 28% thought more than 3 hours per week. Only 2% of parents estimated that they did not have an idea. As for playing and entertainment (e.g. online games, downloading music, videos), 20% of French parents estimated that their child used the netbook for less than one hour per week, 29% estimated more than one hour and 50% estimated not at all. 17% of netbook parents estimated that social networking sites were used for less than 1 hour per week, 29% estimated more than one hour and 50% estimated not at all.

When asked whether parents knew what their child was doing when using the netbook or other ICT devices, 77% of French parents said they felt that they knew enough about their child’s computer use. 14%, however, said that they knew a few things but that there were lots of things that they were not aware of. 6% said they would like to know more about their child’s computer use and 2% said they did not know anything about it (Table 4a).

As for establishing rules about the child’s use of the netbook and other ICT devices outside of school, 56% of French parents said that they had clear agreements with their children regarding usage for both school and leisure. A further 13% said that they had agreed on some terms, but that these were not very clear. One-third said that they had not agreed any terms, whereas 26% said that this was not necessary as they trusted their child, 6% said that they had not thought of making such an agreement and 2% did not know about the issue (Table 4b).
In this section, the views of teachers, students and parents on the impact of netbooks are discussed. The section focuses firstly on the atmosphere in class and how netbooks affect communication patterns among students, parents and teachers, and then looks at the possible impact on a variety of learning aspects.

4.1 How did teachers estimate the impact of netbooks?

The majority of French netbook teachers thought that netbooks in class made students more motivated about learning and about school in general (71%). The same amount thought that netbooks made school-work more enjoyable. Moreover, 44% said that the netbooks improved the atmosphere in class, e.g. pupils were more concentrated, and there was less disruption in class. About three-quarters of the teachers estimated that netbooks had a positive impact on teacher-pupil collaboration and pupil-pupil collaboration. They felt less certain about the teacher-parent communication: in France only 25% said it had a positive effect, whereas 41% of all the netbook teachers had not formed an opinion on this topic. The French average on this set of questions was 58% (pilot average 66%, Table 11).

French netbook teachers were rather careful in their observations on the impact of netbooks on the learning aspects; 53% observed that their students were more independent in their learning, e.g. students went over their work again and found out more about topics of interest. Less than half agreed that students were more likely to revise and edit their work thanks to netbooks. French netbook teachers were more pessimistic than others about certain netbook effects: a quarter agreed that students understood more easily what they are learning and 14% agreed that students tried harder in what they are learning. In general, teachers reported an average of 34% on learning aspects (pilot average 56%).

Netbook teachers were also asked about the possibility that netbooks could offer a more individualised learning track for students. About two-thirds of the French teachers estimated that netbooks allowed students to learn at their own pace and in their own time (62%); however, when asked if netbooks could help students to excel further in their learning, only 32% thought that they helped students with average grades and 25% thought the same about students with good grades. Half agreed that netbooks allowed students with special needs to participate more in lessons. Teachers saw the least opportunities for netbooks to re-engage learners with at risk of dropping-out. The French average on this set of questions was 39% (pilot average 62%, Table 11). In many of these questions, about half of the French teachers remain undecided (choosing neither agree nor disagree) indicating that possibly more time is needed to establish such opinions. About half of the French netbook teachers said that they saw some change in students’ sense of responsibility towards their work, but estimated that students still needed to be reminded of deadlines. 9% estimated that their students took more responsibility for their work and completion of tasks and 22% said that their students took more responsibility for their equipment, including netbooks. The other half thought that the netbooks had brought no change in this aspect, similar to the pilot average on this question (52%).

4.2 How did students estimate the impact of netbooks?

60% of French netbook students said that netbooks made school-work more enjoyable and half agreed that netbooks made them more motivated in learning and in school in general. More than half of the
students estimated that netbooks enabled them to work better with other students on tasks and 45% said that they improved the atmosphere in class. French netbook students’ average on this set of questions was 53% (pilot average 60%). French netbook students, like their German counterparts, were rather careful in their observations on the impact of netbooks on learning aspects. Half said that they felt more independent in their learning, e.g. they went over work again and found out more about things they are interested in. 48% thought they could learn better at their own pace and in their own time and 39% said that netbooks helped them to understand more easily what they were learning and to concentrate more on it. One-third agreed that they were more likely to revise or edit their work and that netbooks helped them remember more easily what they had learnt. 30% said they now try harder in what they are learning and 26% felt more confident about taking tests and evaluation. French netbook students’ average on learning aspects was 38% (pilot average 52%).

In France, 56% of netbook students estimated that their computer and ICT skills had improved and 53% said that the netbook helped them to be better organised. In the specific question, “Since you have been using the netbook, do you think you have become better in the following tasks?” French students estimated a lot of progress (average 38%, vs. pilot average 37%). Up-skilling took place in the areas of “general Internet tasks” (44%), “high level ICT-tasks” (36%) and “e-safety” (35%) (see Chart 12).

In the category of “general Internet tasks”, an improvement in the following areas was reported: filing electronic documents in computer folders and subfolders (59%), emailing a file to someone/another student or teacher (57%), and installing software on a computer (51%). In “high-level tasks”, the following was reported: producing text using a word processing programme (62%), using spreadsheet programmes (61%), using a spreadsheet to plot a graph (57%), creating a multimedia presentation (45%), editing digital photographs or other graphic images (43%) and using information found on the Internet without plagiarising (39%). As for tasks related to “e-safety”, the following was reported: using the Internet safely to protect their own privacy (44%), to respect the privacy of others (36%), to protect their own online reputation (33%) and to respect the online reputation of others (33%).

Chart 12. Since using the netbook, have you become better in the following tasks?
Around a quarter of the French students reported gaining skills in the following areas: identifying reliable sources of information (29%), using the Internet safely to protect oneself against bullying (28%), participating in social networks and using most of their features, creating blogs or web sites and maintaining them, participating in a discussion forum on the Internet (all 27%), judging the reliability of information found on the Internet (26%), editing online text containing Internet links and images and protecting themselves against spam (both 23%), editing a questionnaire online (22%) and creating a database (16%).

In general, 48% of French students’ attitudes towards the use of ICT devices in learning were in the category of making learning fun and having an interest in the use for ICT per se, whereas 38% agreed with the statements regarding their instrumental approach for the future work and studies.

4.3 How did parents estimate the impact of netbooks?

63% of French parents agreed that netbooks had a positive impact on their child’s engagement and motivation in school and learning in general. 63% of parents said that netbooks had a positive impact on teacher-student collaboration, 53% on student-student collaboration and 51% on teacher-student-parent communications.

Half of the French netbook parents estimated that the use of netbooks in school and outside of school had brought better opportunities for parents to be involved in their child’s education. 47% said it had a positive impact on their child’s ability to learn at his/her own pace and 42% agreed that it had an impact on their child’s informal remediation, e.g. catching up with topics, reinforcing learning after school. The French netbook parents’ average score on the issue is 46% (pilot average of 56%).

Three-quarters of the French parents agreed that using netbook had improved their child’s ICT skills. More than half agreed that it also had an impact on personal skills, such as taking initiative, and on information handling skills, such as critically evaluating the validity and value of information and its source. About half of the parents agreed that netbooks also had a positive impact on social skills, e.g. teamwork, communication skills, collaborative, and on organisational skills (49%), intellectual skills, e.g. problem solving (46%), and spatial and motor skills, e.g. speed of reflexes (44%). On the statements regarding skills, an average of 53% of French parents agreed that there was a positive impact (pilot average 62%). 36% estimated that there was “no impact” and only 3% of French parents on average estimated that there was a “negative impact”.

In general, 84% of French parents’ attitudes towards the use of ICT devices in learning fall under the category of an instrumental approach towards future work and studies, e.g. to secure a place in the job market (89%) and because ICT devices offer more learning opportunities outside of school (80%). On the other hand, 77% of the parents’ statements regarding the use of ICT devices in learning were in the category of making learning more fun (85%) and easier (77%).
Attitudes, expectations and concerns regarding netbooks

This section discusses the general attitudes of students, teachers and parents towards the use of ICT in learning, and especially towards the Acer-European Schoolnet Educational Netbook Pilot. Their opinions on the suitability of netbooks in an educational context are discussed, and a number of concerns are outlined. The problems that hindered teachers’ use of netbooks during the pilot are also discussed.

5.1 What were the attitudes of students, parents and teachers towards the use of ICT devices in learning and the Acer-European Schoolnet Educational Netbook Pilot?

As part of the final evaluation students, parents and teachers were asked about their attitude towards the Acer-European Schoolnet Educational Netbook Pilot. 65% of French netbook students said that they were enthusiastic when they first heard that they would receive a netbook to use and 38% felt special and proud to be part of the pilot. Two-thirds of the French netbook teachers also said that they were enthusiastic about the project, and half said that they felt special and proud to be part of it. On the other hand, a third of the netbook teachers thought that it might cause them extra work, 13% of students thought so too. 18% of French students said they were hesitant about the pilot, similar to teachers (14%) and parents (13%).

54% of French parents said that they trusted the decision of the teachers and school heads to run the pilot and 44% said that they were interested in it. A quarter of the parents said they were fully convinced by the project. Regarding statements such as “schools should consider more issues before starting such a project” and “schools should be more careful in dealing with commercial providers”, 45% of parents had no clear opinion yet (neither agree nor disagree), whereas 26% and 30% disagree with the respective statement. Ultimately, though, French netbook parents seemed happy with the netbook pilot: 69% said that they would recommend it to their friends’ children (pilot average 80%).

In terms of French netbook teachers’ and parents’ attitudes towards technology, 52% of teachers and 62% of parents said that they agreed with the statement “When it comes to technology, the simpler the better”. On average, French parents were most satisfied with the netbook’s features and suitability for their child (82%), whereas the average was 61% for teachers and 57% for students. As a general trend, parents seemed to agree more with specific features than teachers and students. The size of the netbook was considered the most suitable for children’s usage; more than 90% of parents and teachers and 72% of students agreed upon this. A similar trend was seen with the keyboard and the screen size as well as with the weight; parents and teachers were more favourable regarding the suitability, whereas students’ opinions are somewhat less favourable (see Chart 13).

In terms of the quality of the screen, this above trend was reversed: 71% of students agreed that it was suitable for their use, whereas 56% of teachers thought so. Around half of the students and teachers agreed that the track pad and the battery life were suitable. Netbook students in France had the least favourable opinion about the speed of the netbook, only one-third thought that it was fast enough.
whereas 56% of teachers agreed (this question was not posed to parents). Lastly, French netbook teachers’ opinion on the robustness of the netbook was low: only 13% thought it was robust enough for students to use, whereas 44% of students agreed. The opinion in France was by far lower than in other countries (teacher average: 48%), which is probably due to some specific technical issues that occurred in France.

**Chart 13. Different perceptions on the netbooks in France**

5.2 What concerns and problems did students and parents encounter?

The netbook evaluation also sought to identify more detailed problems and worries as stated by students and parents. Most of French students were afraid that they might damage their netbook (65%); this figure was higher than in other pilot countries (average 56%). In France, 20% of the respondents said that they were affected by a broken netbook, higher than the pilot average (14%). French students other concerns were the following: half were afraid that their netbook would be stolen or lost, a third were worried about technical problems and a quarter said that they were concerned with Internet safety issues and of being distracted by games, downloading music or social networking sites. French students reported an average of 34% of concerns and worries (pilot average 34%).

19% of French students reported problems (pilot average 18%). About a quarter of students said that their eyes ached when looking at the screen for too long, whereas 43% of teachers said that students had often or sometimes complained about this. Moreover, 24% of students said they could not follow
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the lesson if they had forgotten to bring their netbook home or if it was broken. This is much less than what teachers reported students saying: 76% of teachers said students had complained about the issue at least occasionally. Finally, 30% said that they had back pain because the netbook was too heavy. This is more than in other countries (pilot average 13%) and could also be due to the fact that French students took the netbooks home more often than others.

Teachers also were asked whether their students had complained about a number of issues. 54% of French netbook teachers said that their students had complained that using multiple resources, for example conventional worksheets and Internet based resources, was more difficult than using one textbook. Similarly, 54% said that students complained that writing with the keyboard was more complicated than writing by hand. According to 42% of teachers, students complained that they had more homework than previously because of technical problems slowing down the class (includes answers: rarely, sometimes, often, all the time).

78% of French netbook parents said they had not experienced any of the problems listed, such as dropping the netbook, rough use, damage through liquids or bullying by other pupils. 10% reported jealousy from other pupils who had not received netbooks.

5.3 What obstacles did teachers encounter?

During the Netbook Pilot, 80% of French teachers reported having encountered some technical problems with netbooks, of any kind, that meant it was necessary to suspend the use of netbooks totally (in line with the other countries). 48% reported having such problems often and sometimes, whereas only 1% said that this occurred all the time. About half said that technical support was available when they needed it.

In France, 92% of teachers said that they had some netbooks that became unusable due to any sort of damage or technical failure; 62% of teachers had 1-15% of netbooks unusable in class at some point in time. One French teacher in five did not think that such unavailability affected their teaching at all, whereas 40% of teachers said it bothered them to a small extent. Another 40% deemed that it negatively affected their teaching (includes answers: to a moderate, great and very great extent).

Netbook problems can be roughly categorised into five different types: problems related to the netbook itself (e.g. hardware issues, software incompatibility); problems caused by the school environment (e.g. firewall issues, incompatibility between netbooks and the school technical infrastructure, no suitable places to use netbooks), problems connecting to the Internet (this could be related to other categories); user-related issues (e.g. uncharged batteries, problems with track pad) and other behavioural issues (e.g. distracted by games). Within these categories, French netbook teachers reported the following: 58% of problems were due to connecting netbooks to the Internet, 57% were user-related issues, 55% were problems related to the netbook, 38% were behavioural issues and 38% were school environment related problems. (Table 8)

In the category of problems with connectivity: 64% reported problems with connecting students’ netbooks and 52% problems with connecting teachers’ notebooks to the Internet. In the second category (user-related problems) the most common issues were uncharged netbook batteries (70%) and difficulties using the track pad mouse (54%). In the third largest problem area (netbook-related problems), most reported having some hardware problems, e.g. screen problems (64%). The constraints
of the school environment includes answers: insufficient Internet access, e.g. Internet not available in a specific classroom (59%), and behavioural issues included pupils spending too much time on computers in general (66%).

French netbook teachers used a variety of support mechanisms if they needed help with netbooks. An IT support person or technology coordinator was most often contacted and they were able to help (59%), whereas another teacher was said to be helpful by 54% of respondents. 20% reported that a member of the family was found helpful. Additionally, French netbook teachers asked for and received help from friends or colleagues outside school (17%), or from students in their class (17%). Netbook students, on the other hand, most often asked for and received help from their fellow students (31%) and from teachers (30%), or from members of their family (27%).
6. Supportive and empowering netbook school environments

This section first looks into the schools as a unit, observing how the netbook schools’ priorities and strategies supported the use of ICT, and especially the use of netbooks. The evaluation focused on understanding how the teaching staff was involved in decision-making regarding the integration of netbooks into teaching, support structures set up by the school to help teachers’ collaboration and support provided in terms of professional development opportunities.

6.1 How did the school’s vision empower netbook teachers?

When schools applied for the Netbook Pilot, the schools’ ICT vision was emphasised to ensure that the netbooks were not a separate experiment outside the school’s ICT vision. Three-quarters of the French netbook teachers agreed that their school’s ICT vision supported the use of netbooks. Regarding the school’s time organisation (e.g. fixed lessons times), 66% of French teachers felt that it was suitable for the use of netbooks and 57% felt the same about the spatial organisation (e.g. classroom size and furniture).

61% of French netbook teachers said that their school provided enough technical support for netbooks, 52% agreed in terms of institutional support and 48% in terms of pedagogical support for the use of netbooks. 42% of French netbook teachers agreed that their curriculum was clear and easy to follow making the use of netbooks easy in teaching, however, only a quarter said that they had the time and flexibility to work on netbook projects related to the curriculum (lower than the average of 48%). The average score for the French school environment in terms of supporting and empowering teachers was 48% (pilot average 57%).

44% of teachers said that the head of their school actively encouraged them to pursue professional development activities that helped to integrate netbooks into the curriculum. The teachers were asked whether such professional development regarding netbooks had had an impact on their development as a teacher during the previous 18 months: Participating in informal dialogue with teacher colleagues to improve their teaching (72%), carrying out research on a professional topic of interest (54%), and taking part in workshops or courses (28%) were the activities which were said to have had a large, moderate or small impact in this respect.

6.2 How did schools support the exchange of practices between teachers?

Two-thirds of the French netbook teachers said that, since the beginning of the Netbook Pilot they had attended staff meetings to discuss their school’s vision and mission regarding netbooks, 58% said they had discussed and made decisions on the selection of teaching resources (e.g., textbooks, exercise books) that are suitable for netbooks and 57% said that took part in developing the school curriculum to make it more suitable for netbooks (includes answers: all the time, often and sometimes). 39% of French teachers said that they had exchanged teaching materials suitable for netbooks with colleagues. The average score for support by French schools for exchanges between netbook teachers was 38% (pilot average 50%).
The most common form of communication with other netbook teachers in France was through informal discussions in school about netbooks (88%) and through email (64%). 64% also said that they had participated in organised meetings in school to talk and plan netbook usage. On average, French netbook teachers reported very similar levels of communication as netbook teachers from other countries.
One of the main rewards that French teachers reported in regards to participating in the Netbook Pilot were higher student motivation (67%) and more training opportunities in new teaching methods (34%). For teachers in France, the opportunity to work as a teacher specialised in 1:1 pedagogy was gratifying (23%), as well as recognition from the school head (13%) and from the community outside of school (13%).

Even though 72% of French netbook teachers estimated that they still needed to learn more about how to integrate ICT into teaching and learning, the same amount said that they would like to continue using netbooks in the following academic year. Experiences gained from the pilot with regards to professional development were numerous and positively confirmed by French teachers. Two-thirds said that they now alternated a wider range of activities with and without ICT in their lesson and used a greater variety of resources (online and offline) during their classes. More than half said that they were now better able to evaluate when ICT is needed and when it is not. The average score for professional development gain in France was 56% (pilot average 71%). However, two-thirds said that they would still recommend the use of netbooks in school to their fellow teachers!
The Pilot Setup: Germany

Pilot schools

- 21 schools, including 40 classes, were selected for the pilot in collaboration with n-21: Schulen in Niedersachsen online e.V. in Lower-Saxony and with local school authorities in Thuringia (Staatliches Schulamt Bad Langensalza).
- The number of netbook classes in the schools varied from one to four: 2 schools had 4 netbook classes, 2 schools had 3 netbook classes; 9 schools had 2 classes and 8 schools had 1 netbook class.
- 10 of the schools in the Thuringia area participated in the pre-pilot in the previous semester (January 2010 – July 2010).
- ICT level of the pilot schools according to teachers’ estimation: 18% were at the beginning phase of integrating ICT, 42% had an average level of ICT equipment and knowledge and 40% had an advanced level of ICT implementation.

Questionnaire

- At least one teacher replied to the questionnaire in each school (n=126).
  - 103 were teachers; 7 ICT coordinators; 16 other
  - 21 teachers had been part of the pre-pilot.
  - 75% had been teaching for more than 10 years
  - ICT skills: 33% self-evaluate as having beginner or moderate ICT skills, 41% good ICT skills and 25% said that they were experienced or confident users
- At least one student replied to the questionnaire in each school (n=832)
  - 56% boys, 44% girls. 6%=11 years old, 22%=12 years old, 34%=13 years old, 19%=14 years old; 7%=15 years old, 5%=16 years old, 7%=older
  - ICT skills: 27% self-evaluated as having beginner or moderate ICT skills, 55% good ICT skills and 15% said that they were experienced users (3% blank)
  - 61% had access to laptop or mini-computer at home (aside from the netbook received in the pilot)
- The parents’ questionnaire was completed by 527 individuals
  - ICT skills: 46% self-evaluated as having beginner or moderate ICT skills, 43% good ICT skills and 6% said that they were experienced or confident users and 5% non-users

Events

- Launch meeting in Gotha: May 2010
- Launch meeting in Hannover: 26 October 2010
- Teachers’ workshop in Soltau: 30-31 March 2011
This section highlights the emerging trends on netbook use in an educational context. It focuses on the aspects of the evaluation framework: how learners and teachers use netbooks in various educational contexts, e.g. in and out of school; individually and collaboratively; in educational use and leisure use. Firstly, the subjects in which netbooks were used are reported, followed by how teachers planned and used netbooks in class. Finally, reports are given on support from 1:1 pedagogical netbook scenarios and teachers’ confidence in integrating netbooks. 1:1 pedagogical scenarios help teachers to “orchestrate” the learning situation with netbooks, focusing on the interplay between different types of activities, and between individual and social processes.

2.1 In which subjects were netbooks used and how much?

Netbook teachers were asked to indicate up to three school subjects that they taught using netbooks; German netbook teachers used netbooks for teaching in 26 different school subjects. Most teachers said that they used them to teach Mathematics/Geometry (30%), followed by Foreign Languages and ICT/Informatics (both at 24%), National Language and Literature (19%). 14% of teachers said that they taught teach History, Informatics/ICT and Physics with the netbooks, followed by 13% who taught Geography with them.

Netbook students were asked to name three subject areas in which they most often used the netbook in school. 44% of students said that they used the netbooks in Mathematics/Geometry in school. Around 30% of students referred to the use of netbooks in History and Geography. Other subjects in which the netbooks were used were Biology (24%), Modern Foreign Languages (20%) and National Language (17%). In Germany the netbooks were also used in the Ethics classes (10%) and in Economics (8%). This final figure is outstanding compared to other countries, where netbooks were hardly used in this subject.

Between March and May 2011, more than half the German teachers (61%) said that they had used netbooks for 11% - 50% of their teaching time, while 18% said that they had used them more than 50%. On the other hand, 21% reported using them less than 10% of their teaching time or said that they did not know.

2.2 How were netbook classes planned and run?

96% of German teachers used the notebook that they were given by the pilot organisers to prepare school activities. Most of the netbook teachers prepared their lessons alone at home (90%), and almost the same number also prepared lessons and homework alone in school (88%). As regards collaboration, 38% said that they collaborated online with other netbook teachers in their own school. A third also said that they worked with colleagues who were not part of the netbook team. At home, 20% of the teachers used online tools to collaborate and prepare activities with other teachers. 5% of the German teachers said that they worked with netbook teachers in other schools in their country. German netbook teachers reported an average of 24% collaborative activities vs. the pilot average of 29% (Table 10).
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For in-class activities, German netbook teachers mostly planned to alternate individual student work (95%) and collaborative work (66%). Much fewer teachers, though still more than a third, planned for individual work at home (38%) and 6% planned for collaborative work to be carried out at home.

German netbook teachers were asked how they alternated different aspects of teaching during their actual netbook lessons according to the following paradigms: frontal teaching, e.g. the teacher demonstrates and explains to the whole class or a student gives a presentation for the whole class; individual processes, which include teacher support and explanations to individual students, or students working individually at their own pace or at the same pace; and collaborative processes such as students working in groups. German netbook teachers reported that they alternated all these different aspects fairly equally in their teaching: 88% said that they alternated frontal style teaching, collaborative (85%) and individual processes (79%) every lesson or sometimes. On average, 83% of German teachers reported alternating between different teaching aspects either every lesson or sometimes (pilot average 81%, see Table 7).

Regarding the school subjects reported in section 2.1, the majority of German teachers said that students worked alone whilst using the Internet (85%) and half without the Internet. Around half of the German teachers said that they used a projector and interactive whiteboard with netbooks at least 1-3 times a week, almost 30% of teachers said they used them once or twice a month and around 20% said these tools were unavailable /or that they never used them. The use of virtual learning environments with netbooks was rarer: 15% used them daily or 1 to 3 times per week, 11% used them 1-2 times a month or less, whereas 74% said that they never used them or that they were not available (Chart 7).
As for German netbook students working on the school subjects reported in section 2.1 while in school, 76% reported working individually online and 16% offline. 39% say they worked together with other students online and 9% collaboratively offline. The most popular tools used with these school subjects were educational school portals or learning platforms (34%), collaboration tools (32%) followed by subject specific software (25%). Other tools that were mentioned around 20% or less were office tools, digital resources and digital textbooks, communication tools and digital games. The least used tools were virtual experimentations, virtual learning environments and data loggers and sensor tools, only used by about 8% of students. (Table 6, see “in school”).

On average, 33% of different activities were reported by German students while using the netbook in school (pilot average 36%). These activities are divided into five categories: looking up things on the Internet (e.g. use search engines and online reference sources), school related activities (e.g. homework, contacting teachers, checking the school website), communicating (e.g. with relatives and family friends, online forums and chats, and social networking), creating (e.g. creating websites/writing blogs, editing/creating photos and videos) and leisure (e.g. music, games, videos). In school the most popular activities were looking things up on the Internet (58%) and school-related activities (54%). 30% reported creating, e.g. using multimedia to edit/create photos and videos, 25% communicating and 21% leisure-related activities (Chart 14 and Table 2). Aside from in-school activities with the netbook, Chart 14 also shows out of school activities as well as general activities that students have reported doing both in and out of school.

27% of German students kept their netbooks with them at all times when in school. 21% said that this was because it is practical and 6% said that it was because the school does not have any other place to store the netbook. 22% said that netbooks were stored in a cupboard in school and 18% left them in a locked classroom. 10% reported that netbooks were stored in a cupboard in the teachers’ room and 4% kept them in their personal locker.

2.3 How did 1:1 pedagogical netbook scenarios support teachers?

To help and support the initiating and running of netbook classes, Netbook Pilot teachers were offered examples of 1:1 pedagogical netbook scenarios created by European Schoolnet and other pilot teachers. 76% of all the German teachers said that they had read pedagogical netbook scenarios (includes answers: rarely, sometimes, often, all the time) whereas 34 % of German teachers had never read any of them. 31% said that they had also created their own 1:1 scenarios. 14% agreed that the scenarios increased their understanding of different ways of working with netbooks; however, a large majority in Germany had not formed an opinion on the issue (61% neither agreed nor disagreed).
61% of German netbook teachers seem fairly confident about their use of netbooks in their teaching activities (pilot average 67%). Teachers reported that they know which content and materials to use with netbooks (66%), how to effectively integrate netbooks in their teaching (65%), which software to use on netbooks (64%) and that they can find enough content and learning resources in their national language (58%). 60% said that they understood the potential benefits of netbooks in teaching. However, only slightly over 50% of teachers could find enough good online material to be used with pupils.

Many netbook teachers estimated that learning how to integrate netbooks into their teaching came with some cost; 72% said that they needed to prepare the class more carefully when using netbooks. Two-thirds also said that more classroom management was needed with netbooks; however, only 34% thought that netbooks increased their workload. Many also estimated that they did not have enough time to prepare for specific netbook activities (50%), but, more positively, about half reported that they received support and examples from other netbook colleagues (45%).
This section first looks at students' general use of the netbook that they received for the Acer-European Schoolnet Educational Netbook Pilot. It elaborates on the aspects of the evaluation framework such as educational use vs. leisure use and individual vs. social processes. Aspects regarding how netbooks facilitate interactions within the family are also discussed.

3.1 How were netbooks used outside of school hours?

55% of German netbook students said that they brought their netbook home almost every day (pilot average 73%). 29% said that they never brought their netbook home (pilot average 17%, Chart 4). Most students brought their netbook home in their school bag with a cover (66%), 26% had a separate computer bag, whereas 8% carried their netbook in their school bag without a cover or by hand (Table 5 a, c).

German netbook students were asked where they used their netbooks outside school hours. Aside from using them at home (72%), netbook students reported other places. 36% said that they also used them in school for “after school activities”, 28% said that they used them at a friend’s home (only 10% of German parents reported that their children used them at a friend’s home), 17% said that they also took their netbooks with them on holiday. Moreover, 11% said that they used them in public places such as libraries and 4% on the way home, e.g. on the school bus. (Chart 15)

**Chart 15. Where did German students use netbooks? Students' and parents' opinions**

German students said that when they took their netbook home from school, they mostly used it at their own desk (75%), in their bedroom (49%), in the living room (24%), in a dedicated computer room (18%),
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in the kitchen (13%) and in the dining room (11%) (Table 5 b). Moreover, netbook students reported that they mostly used it on their own (85%), with friends and other children around (17%), with parents or an adult around (15%). These percentages match rather closely with what parents reported about their children’s use of netbooks at home. None of the German parents said that they had used the child’s netbook alone without their child being present.

3.2 What formal and informal learning occurred out of school?

When comparing the activities for which netbook students use their netbook in and out of school, it can be observed that German students used their netbooks more out of school (42%) than in school (33%) (see Chart 14, “average of all activities”). Three groups emerged among German netbook students: more than half said that they used the netbook most often for studying (58%), e.g. doing their homework and connecting to the school’s website; 29% reported that they used it most often for social networking tools, such as Facebook and 14% said that they most often used it for playing and entertainment, e.g. online games, downloading music, videos. When asked about the activities that they used their netbooks for the least; 50% reported playing and entertainment, 28% social networking sites and 23% studying. The most popular activities among German students were in categories of communicating (50%), looking up things on the Internet (47%) and school related activities (46%). Moreover, 37% reported leisure activities and 29% activities to create e.g. multimedia (see Chart 14, “out of school”).

Out of school, German students reported using their netbook with the same subjects as reported in school (see section 2.1). They used about the same number of tools in studying these school subjects with their netbooks as in school. The same tools top the chart, but in a slightly different order (i.e. collaboration tools, educational school portals or learning platforms, subject specific educational software and communications tools were reported by 22% to 33% of students). (Table 6, see “out of school”). Regarding working individually or collaboratively outside school hours; 83% said that they worked individually whilst using the Internet and a quarter said that they work together with other students whilst using the Internet.

To gauge the informal learning opportunities brought by netbook use outside of school hours, netbook students were asked about activities not related to school work or homework. The German netbook students reported many different usages outside of the school hours: looking for extra information on topics taught at school, or following current events (42%). 32% looked for information on topics that are not taught at school, but that are of interest, e.g. sport, celebrities, TV shows; and another 29% developed skills related to topics of interest to them. 22% said that they looked for information in their area of interest in other languages than in their mother tongues. On average, German students reported 30% of these activities (pilot average 32%). (Table 3)

3.3 How did netbooks stimulate students’ interaction within their families?

German students talked with their parents about their netbook use to varying degrees. 25% of German netbook students said that since receiving their netbook, they had spoken with their parents about netbook use at least once a week. Another 23% of students only did so once since the start of the project. Only 9% talked about their netbook use every day and 14% of students had talked about netbook once in the previous month.
89% of German parents said that they used the netbook for educational school-related activities with their child, followed by half of parents, who used the netbook with their child for search engines and online reference sites, 36% used it to check the school website for announcements and 26% contacted the school or teacher about issues related to school activities or used social networking sites with their children. 22% of parents used multimedia tools for photo editing, videos or presentation, or communicating via Skype. The German parents’ average on this set of questions was 26% (pilot average 23%).

Netbook students were asked if and in what way they had helped the adults in their family to use the Internet. 42% of German students said they had helped them to use email and to start using an Internet browser. 34% of netbook students helped them to find information on websites or to fix a broken Internet connection and 27% of students helped to set up an account on a social networking site. 23% said they have never helped the adults in their family. On average, students reported a bit less in the area of in helping their family members than students in other countries (average 28% as opposed to the pilot average of 32%). (Table 4)

3.4 How did parents perceive their child’s netbook usage?

German netbook parents were asked to estimate how much time their child used the netbook for education (e.g. homework, connecting to the school website). 40% estimated their child’s use of the netbook for education as 1-3 hours per average week; whereas 24% estimated that it was less than 1 hour per week. 13% thought that their child used the netbook for 3-5 hours per week. 12% thought that their child did not use it for education. 24% of parents estimated that their child used the netbook for less than one hour per week for social networking activities, whereas 30% estimated more. 40% of parents did not think that their child used it for social networking sites. As for playing and online games, 23% estimated the use of netbook at less than one hour per week and 16% estimated more. 48% did not think that their child use the netbook for playing at all.

69% of German parents were rather confident of knowing what their children were doing when using the netbook or other ICT devices. 27% said that they knew one or two things, but that there were lot of things that they were not aware of. Only 1% said that they did not know anything about their child’s computer use (Table 4a).

As for rules about the child’s use of the netbook and other ICT devices outside of school, slightly more than half of the German parents said that they had clear agreements with their child on netbook usage for both school and leisure. On the other hand, almost 30% said that they do not need such terms as they trusted their child. 14% said that they had agreed on rules but that they were not sure if these rules are clear (Table 4b).
Introducing Netbook Pedagogies in Schools – Germany

This section discusses the views of teachers, students and parents on the impact of netbooks. It first focuses on the atmosphere in class and how netbooks affect communication patterns among students, parents and teachers, and then looks at the possible impact on a variety of learning aspects.

4.1. How did teachers estimate the impact of netbooks?

Three quarter of German netbook teachers though that netbooks made students more motivated in school and learning (76%). They said that school work become more enjoyable (60%) and that netbooks also improved the atmosphere in class, e.g. pupils were more concentrated, there was less disruption in class (57%). More than 70% of German netbook teachers estimated that netbooks had a positive impact on pupil-pupil collaboration and on teacher-pupil collaboration. However, only a small amount of teachers felt that netbooks had an effect on teacher-parent communication (18%), 44% had not formed an opinion on it and 39% did not believe that it had any effect. The German average on this set of questions was 54% (pilot average 66%, Table 11).

70% of German netbook teachers observed that their students were more independent in their learning, e.g. students went over work again and found out more about topics of interest. Half agreed that students tried harder in what they were learning. About a third agreed that students were more likely to revise and edit their work thanks to netbooks and that students understood more easily what they were learning. On average, 45% of German netbook teachers agreed about the impact of netbook in these areas (pilot average 56%, Table 11).

Netbook teachers were also asked about the possibility that netbooks could offer a more individualised learning track for students. 77% of teachers observed that students could learn at their own pace and in their own time. Another 70% of teachers agreed that students with good grades could excel further in their learning, and 69% felt that netbooks could help students at risk of dropping out to re-engage with learning. The impact of netbooks on students’ sense of responsibility towards their work was much less evident than for the areas on motivation, atmosphere and learning. 39% said that pupils took more responsibility for their equipment, 37% stated that there was some change, but that pupils still needed to be reminded of deadlines and tasks.

4.2. How did students estimate the impact of netbooks?

At the higher end of positive impact, 61% of German students stated that school work was more enjoyable and 45% agreed that netbooks had made them more motivated in learning and in school in general, and the same number estimated that netbooks enabled them to work better with other students on tasks. 42% said that the netbooks improved the atmosphere in class, e.g. students were more concentrated, there was less disruption in class. Students’ On average, 62% of German netbook teachers agreed about the impact of netbook in these areas (pilot average 62%, Table 11).
German netbook students’ observations on the impact of netbooks on learning aspects is somewhat hesitant: 44% agreed that netbooks helped them understand what they were learning more easily, and 41% felt more independent in their learning, and also that they concentrated more on learning. 39% said they tried harder in what they were learning, 38% agreed that they were more likely to revise or edit their work (Table 9b), and 37% said that netbooks helped them remember what they had learnt more easily. 36% thought that netbooks helped them to learn at their own pace and in their own time. Only a quarter felt more confident about taking tests and evaluation. On average, 41% of German students agree on a positive impact from netbooks (pilot average 54%).

In Germany, 57% of students stated that their computer and Internet skills had improved. In the specific question, “Since you have been using the netbook, do you think you have become better in the following tasks?” German students estimated a similar progress to students from other countries others (average 38%, vs. pilot average 37%). Up-skilling took place in the areas of “general Internet tasks” (39%), “high level ICT-tasks” (32%) and “e-Safety” (25%) (Chart 16).

**Chart 16. Since using the netbook, have you become better in the following tasks?**

In the category of “general Internet tasks”, an improvement in the following areas was reported: filing electronic documents in computer folders and subfolders (62%), emailing a file to someone/another student or teacher (46%), and installing software on a computer (11%). In “high-level tasks”, the following was reported: using spreadsheet programmes (65%), producing text using a word processing programme (60%), creating a multimedia presentation (58%), and using a spreadsheet to plot a graph (41%). For tasks related to “e-Safety”, the following was reported: using the Internet safely to protect their own privacy (30%), to protect their own online reputation (25%), and to protect themselves against bullying (25%).

On average, 51% of German students were more interested in the use of ICT devices per se, e.g. to make learning fun (82%) or because “I’m very interested in ICT devices” (50%), whereas 41% agreed with the statements regarding their instrumental approach for future work and studies.
4.3 How did parents’ estimate the impact of netbooks?

67% of German parents agreed that netbooks had a positive impact on their child’s engagement and motivation in school and learning in general. More than half said that the use of netbooks in and out of school had also improved teacher-student collaboration (57%), student-student collaboration (56%) as well as teacher-student-parent communication (44%).

Half of German parents agreed that the use of netbooks in and out of schools could help their child’s informal remediation, e.g. catching up with topics and reinforcing learning after school, and also that their child could learn at his/her own pace (44%). A third estimated that netbooks had brought better opportunities for parents to be involved in their child’s’ education. The German netbook parents’ average score on these issues was 42% (pilot average 56%).

The areas where most of the parents reported an impact were in the improvement of computer skills (77%) and engagement and motivation in school and learning (67%). Around half of the parents believed that the use of netbooks had a positive impact on the development of social skills (e.g. teamwork, communication skills) information handling skills, personal skills, and intellectual skills (e.g. problem solving). 42% agreed that netbooks could also have a positive impact on their child’s performance in school subjects. On average, 52% of German parents estimated a positive impact from netbooks in the above-mentioned subjects (pilot average 63%).

In general, 87% of German parents’ attitudes towards the use of ICT devices in learning fall under the category of an instrumental approach for future work and studies, e.g. to secure a place in the job market (92%) and because ICT devices offer more learning opportunities outside school (80%). On the other hand, three-quarters of the parents’ statements regarding the use of ICT devices in learning were in the category of making learning easier (74%).
5 Attitudes, expectations and concerns regarding netbooks

This section discusses the general attitudes of students, teachers and parents towards the use of ICT in learning, and especially towards the Acer-European Schoolnet Educational Netbook Pilot. Their opinions on the suitability of netbooks in an educational context are discussed, and a number of concerns are outlined. The problems that hindered teachers’ use of netbooks during the pilot are also discussed.

5.1 What were the attitudes of students, parents and teachers towards the use of ICT devices in learning and the Acer-European Schoolnet Educational Netbook Pilot?

Students and parents were asked about their attitudes towards the Acer-European Schoolnet Educational Netbook project. The majority of German students were enthusiastic about the pilot (73%) and more than half of the students felt proud to be part of the pilot (58%). 59% of German teachers were also enthusiastic about the pilot and a third said they felt special to be part of it. 23% of teachers said that they were hesitant about the pilot and 11% thought the project would cause extra work. 8% of students thought so too.

Overall German parents were positive about the project before it started. More than half of the parents trusted the decision of the teachers and school to run the project (58%), and 44% were interested in the project. 28% of parents were already fully convinced about the project, the highest figure among parents participating in the pilot. When asked whether schools should consider more issues before starting such a pilot parents’ opinions were fairly evenly split: 30% agreed with the statement, 32% had not formed an opinion yet and 38% disagreed. Likewise, 35% of parents thought that schools should be more careful when dealing with commercial providers, 34% did not have any opinion on the issue and 31% disagreed with the statement. Despite any reservations they may have had 85% of German parents said that they would recommend the project to their friends’ child.

In terms of German netbook teachers’ and parents’ attitudes towards technology, 60% of teachers and 57% of parents said that they agreed with the statement “When it comes to technology, the simpler the better”. On average, German parents and teachers were more satisfied with the netbook’s features and suitability for education (75% and 73% respectively) than students (52%). As a general trend, all three respondent groups had similar opinions regarding features such as the size of the netbook, its keyboard, the size and the quality of screen. While teachers and parents were happy with the weight (more than 80%), only 17% of students agreed (see Chart 17).
5.2 What concerns and problems did students and parents encounter?

After gaining some general impressions about the project, the netbook evaluation sought to identify more detailed concerns and problems encountered by students and parents. Many German students were afraid that they might damage their netbook (43%), while some were afraid of losing their netbook, theft and technical problems such as being unable to access the Internet (30%). Only around 20% of students were worried about Internet safety issues, of being distracted by games, downloading music or social networking sites. German students reported an average of 25% of concerns and worries (pilot average 34%).

Asking students about problems that occurred with the netbook revealed some marginal issues. The issue most reported by students were related to software, which did not work properly on the netbook (30%) followed by complaints about eye ache from looking at the screen for too long (26%), although 52% of teachers said that students had complained about this aspect often or sometimes. Around 20% had problems not following the lesson when they forgot the netbook at home, a much lower figure teachers reported students complaining about this aspect at least occasionally (64%). 21% said writing with the keyboard was more complicated than writing by hand. German students reported an average of 17% of problems (pilot average 18%).

German teachers were also asked to evaluate whether their students had complained about a number of issues. 42% of netbook teachers said that their students complained that using multiple resources, for example conventional worksheets and Internet based resources, was more difficult than using one text book. A similar number said that students never complained that they had more homework than before because
of technical problems slowing down the class. Finally, 42% of teachers said that students complained about writing with the keyboard being more complicated than by hand (includes answers: rarely, sometimes, often, all the time). In this category of statements, German teachers d that their students had reported fewer problems than in other countries (average 42% vs. pilot average 55%). Damages related to the netbooks were rarely reported by German parents. 87 % of parents said they had not experienced any of the problems listed, such as dropping the netbook, rough use, damage through liquids or bullying by other pupils. 11% reported jealousy from other pupils who had not received netbooks (11%).

5.3 What obstacles did teachers encounter?

During the Netbook Pilot, 83% of German teachers reported having encountered some technical problems with netbooks, of any kind, that meant it was necessary to suspend the use of netbooks totally (less than in the other countries). 49% reported having such problems often and sometimes, whereas only 3% said all the time. More than half said that they had technical support available when they needed it (57%).

When asked which percentage of netbooks used in the class became unusable due to damage or technical failure, 36% of teachers reported 1-15% of their netbooks had become unusable in class at some point in time. 55% reported no problems at all, the lowest percentage among the overall netbook teachers. 65% of teachers said that these technical problems did not negatively affect their teaching, 20% estimated only to a small extent and 15% deemed that it had negatively affected their teaching (includes answers: to a moderate, great and very great extent).

Netbook problems can be roughly categorised into five different types: problems related to the netbook itself (e.g. hardware issues, software incompatibility); problems caused by the school environment (e.g. firewall issues, incompatibility between netbooks and the school technical infrastructure, no suitable places to use netbooks), problems connecting to the Internet (this could be related to other categories); user-related issues (e.g. uncharged batteries, problems with track pad) and other behavioural issues (e.g. distracted by games). German netbook teachers mostly encountered problems related to connectivity (60%), user related issues (46%), constraints of the school environment (43%), behavioural issues (38%) and to the netbook (37%), all slightly lower than the pilot average in these categories (Table 8).

Most problems encountered took place when connecting students’ netbooks (68%) or teachers’ notebooks (51%) to the Internet. In the user-related category, the main problem was the use of track pad (61%) and uncharged batteries (55%). In the category related to school infrastructure, insufficient Internet access in the classroom was the main problem (65%). For problems related to behavioural issues, 70% of teachers thought that students spent too much time on the computer in general, as well as e-Safety issues that affected the planning and implementation of teaching (58%). Netbook-related issues were mostly problems with software that did not run correctly on the netbook (48%) or hardware issues (25%).

German netbook teachers used a variety of support mechanisms if they needed help with netbooks. An IT support person or a technology coordinator was most often contacted and they were able to help (58%). Other teachers were also helpful (55%). About a third of teachers were helped by a member of family, a friend or colleague outside of school or by a pupil in class (30%). Moreover, 33% used an online help desk or website, whereas a quarter requested help from the pilot organisers. Netbook students, on the other hand, most often asked for and received help from their teacher (44%) or from a fellow student (43%), but also from members of their family (29%) or another adult outside school (23%).
This section first looks into the schools as a unit, observing how the netbook schools’ priorities and strategies supported the use of ICT, and especially the use of netbooks. The evaluation focused on understanding how the teaching staff was involved in decision-making regarding the integration of netbooks into teaching, support structures set up by the school to help teachers’ collaboration and support provided in terms of professional development opportunities.

6.1 How did the school’s vision empower netbook teachers?

70% of German teachers agreed that the school's ICT vision supported the use of netbooks and that the school's time organisation was suitable for the use of netbooks. 62% agreed that school's spatial organisation, e.g. classroom size and furniture, was also suitable for the use of netbooks.

58% of teachers agreed that their school provided enough technical support for the use of netbooks, 52% said there was enough institutional support and 49% enough pedagogical support. Only 26% of teachers in Germany agreed that their curriculum was clear and easy to follow, making the use of netbooks easy in teaching. However, 49% found the time and flexibility to work on netbook projects which to the curriculum. The average score for the German school environment in terms of supporting and empowering teachers was 55% (pilot average 57%).

62% of teachers said that their school head actively encouraged them to pursue professional development activities that helped to integrate netbooks into the curriculum. Teachers were also asked whether such professional development regarding netbooks activities had an impact on their development as a teacher during the previous 18 months: participating in informal dialogue with teacher colleagues to improve their teaching (81%), taking part in workshops or courses (75%) and carrying out research on a professional topic of interest (32%) were activities which were said to have had a large, moderate or small impact in this respect. Other activities such as mentoring or peer observation, observation visits to other schools and qualification programmes were also mentioned, but by a smaller number of teachers.

6.2 How did schools support the exchange of practices between teachers?

66% of German netbook teachers said that, since the beginning of the Netbook Pilot, they had attended staff meetings to discuss their school’s vision and mission on netbooks, but only 50% said that they had discussed or made decisions on the selection of suitable teaching resources for netbooks and 43% said that they took part in developing the school curriculum to make it more suitable for netbooks (includes answers: all the time, often and sometimes).
60% of German teachers exchanged teaching materials suitable for netbooks with colleagues, 41% taught jointly as a netbook team in the same class and 30% coordinated homework practices across subjects. 18% also engaged in joint activities across different classes and age groups. In Germany, the average for these practices was 40% (pilot average 50%).

Netbook teachers in Germany communicated with each other in many ways; 88% engaged in informal discussions in school about netbooks, whereas 59% said that they used e-mail and 68% held organised meetings in school to talk and plan the netbook use. 57% of teachers attended a face-to-face meeting organised by the Netbook Pilot or pedagogical coordinator, whereas only 10% said that they used online platforms, chats and online meetings tools to communicate with other teachers about netbooks. On average, German netbook teachers reported rather similar levels of communication as other netbook teachers, average 41% (pilot average 49%).
What did teachers gain from the Acer-European Schoolnet Educational Netbook Pilot?

One of the main rewards that German teachers reported in regards to participating in the Netbook Pilot was higher student motivation (87%). Almost 40% liked the changes in their work responsibilities, which made their job more attractive. 22% pointed to higher test scores for students as a recognition and reward for using netbooks in their teaching. The latter two points are the highest percentages in these categories in comparison to other countries.

Experiences from the pilot with regards to professional development were numerous, and these were positively confirmed by the majority of German teachers, who saw a wide range of benefits in this area. 68% estimated that this experience had had a positive impact on different aspects of their professional development (pilot average 71%). More than 70% of teachers said that they now alternated a wider range of activities with and without ICT in their lessons, used a greater variety of resources (online and offline) during their classes and were better able to evaluate when ICT is needed and when it is not. 78% said that they now have a better understanding of how to integrate ICT into their subject. Other benefits reported by an average of 45% of teachers were the ability to work more collaboratively with other teachers in their school and to the opportunity to plan for cross-curricular teaching.

Even if two-thirds of German teachers indicated that they still needed to learn more about how to integrate ICT into teaching and learning, 81% of teachers were interested in continuing using netbooks in the following academic year and 77% would recommend the use of netbooks in schools to their fellow teachers!
The Pilot Setup: Italy

Pilot schools

- 26 schools, including 45 classes, were selected for the pilot in collaboration with the Ministry of Education, Department for Research, Statistics and ICT (D.G. per gli studi, la statistica e i sistemi informativi).
- The number of netbook classes in these schools varied from one to four: 2 schools had 4 netbook classes; 7 schools had 2 classes and 18 schools had 1 netbook class.
- 10 of the schools participated in the pre-pilot in the previous semester (January 2010 – July 2010).
- ICT level of the Pilot schools according to teachers’ estimation: 17% were at the beginning phase, 58% an average level and 34% had an advanced level.

Questionnaire

- At least one teacher replied to the questionnaire in each school (n=144).
  - 128 teachers; 9 ICT coordinators; 7 other
  - 58 teachers had been part of the pre-pilot
  - 83% had been teaching for more than 10 years
  - 67% self-evaluated as having beginner or moderate ICT skills, 24% good ICT skills and 8% said that they were experienced or confident users.
- At least one student replied to the questionnaire in 24 schools, 2 schools abstained (n=654).
  - 49% boys, 51% girls
  - 11 years old=7%, 12 years old=25%, 13 years old=30%, 14 years old=15%; 15 years old=16%, 16 years old=5%, older=1%
  - ICT skills: 39% self-evaluated as having beginner or moderate ICT skills, 48% good ICT skills and 12% experienced users (1% blank)
  - 39% had access to laptop or mini-computer at home (aside from the netbook received in the pilot).
- The parents’ questionnaire was completed by 644 individuals.
  - Roles: 66% mother, 33% father, 1% other
  - ICT skills: 62% self-evaluated as having beginner or moderate ICT skills, 21% good ICT skills, 10% experienced and confident users and 7% non-user.

Events

- Launch meeting in Bologna: 25-26 May 2010
- Formal launch in Naples: 14-15 October 2010
- Conclusive cooperative workshop in Bologna: 30-31 May 2011
This section highlights the emerging trends on netbook use in an educational context. It focuses on the aspects of the evaluation framework: how learners and teachers use netbooks in various educational contexts, e.g. in and out of school; individually and collaboratively; in educational use and leisure use. Firstly, the subjects in which netbooks were used are reported, followed by how teachers planned and used netbooks in class. Finally, reports are given on support from 1:1 pedagogical netbook scenarios and teachers’ confidence in integrating netbooks. 1:1 pedagogical scenarios help teachers to “orchestrate” the learning situation with netbooks, focusing on the interplay between different types of activities, and between individual and social processes.

2.1 In which subjects were netbooks used and how much?

Italian netbook teachers were asked to indicate up to three school subjects that they taught using netbooks; 25 different school subjects were reported. Most teachers said that they taught History (26%), quite unusual compared to other countries, followed by Mathematics/Geometry (24%), National Language and Literature (23%), Geography (22%), Foreign Languages (20%), Biology (19%), Informatics/ICT (14%), and Chemistry (7%).

Italian netbook students estimated that in school they used their netbooks most often in Mathematics/Geometry (60%), by far the most reported subject area, followed by History and Geography (both 41%), Chemistry (25%) and Modern Foreign Languages (24%). The students also used netbooks in Music (15%), National Language and Literature (12%), Religion/Theology (11%) and Design and Technology (9%).

The netbook teachers were asked to estimate the percentage of time that they used notebooks during their teaching between March and May 2011. A quarter of teachers said that they had used netbooks more than 50% of their teaching time (like Spanish and Turkish teachers). In Italy, a large majority of teachers (68%) said that they used them 11% - 50% of their teaching time, while only 3% answered less or that they could not estimate it.

2.2 How were netbook classes planned and run?

92% of netbook Italian teachers used the notebook that they were given by the pilot organisers to prepare school activities. Almost all teachers used their notebook alone at home (89%). To a lesser extent they used the notebooks to collaborate and prepare activities together with other netbook teachers in their school (48%). Some teachers also collaborated and worked together with other colleagues who were not part of the netbook team (25%). Only 34% of teachers reported to have prepared lessons and homework alone in school. On average, 25% of teachers said that they collaborated with other teachers when preparing their teaching activities (pilot average 29%). For in class activities, Italian teachers’ tendency was to plan mostly for collaborative work in class (76%) and slightly less for individual work (59%). They planned for students’ individual work at home (63%) and a quarter said that they planned for collaborative online work to be done at home (24%).
Italian netbook teachers were asked how they alternated different aspects of teaching during their actual netbooks lessons according to the following paradigms: frontal teaching, e.g. the teacher demonstrates and explains to the whole class or a student gives a presentation for the whole class; individual processes, which include teacher support and explanations to individual students, or students working individually at their own pace or at the same pace; and collaborative processes such as students working in groups. Italian teachers reported that they alternated all these different aspects fairly equally in their teaching: teachers reported that they alternated frontal style teaching (81%), collaborative (79%) and individual (75%) processes every lesson or sometimes. On average, 78% of Italian netbook teachers reported alternating between different teaching aspects either every lesson or sometimes (pilot average 81%, Table 7).

Regarding the school subjects reported in section 2.1, 61% of Italian teachers said that their students worked alone in class using the Internet and 55% of teachers said that students worked collaboratively whilst using the Internet. There is almost no difference in the statistics for individual or collaborative work carried out off-line. When asked about the use of other equipment with netbooks, 61% of teachers said that they used an interactive whiteboard daily or 1-3 times a week (only the UK has a higher figure). 45% of teachers said that they used a projector at least 1-3 times a week. Concerning virtual learning environment or learning management system, only 7% of teachers said that they use them at least 1-3 times a week, while for 74% these tools were not used or not available.

As for Italian netbook students working on the school subjects reported in section 2.1 while in school, 60% reported that they worked alone whilst using the Internet and 36% worked alone off-line. 36% of students said that they worked together with other students whilst using the Internet. The most popular tools used with these school subjects were office tools, e.g. word processing and spreadsheets (54%).
Other popular tools were subject-specific educational software, e.g. Math/Science programmes (32%), interactive whiteboards (29%), collaboration tools (28%), digital textbooks (25%) and digital resources together with educational school portals or learning platforms (both 23%) (Table 6, see “in school”).

On average 29% different activities were reported by Italian students while using the netbook in school (pilot average 36%). These activities are divided into five categories: looking up things on the Internet (e.g. use search engines and online reference sources), school related activities (e.g. homework, contacting teachers, checking the school website), communicating (e.g. with relatives and family friends, online forums and chats, and social networking), creating (e.g. creating websites/writing blogs, editing/creating photos and videos) and leisure (e.g. music, games, videos). In school the most popular were school-related activities (60%) and looking things up on the Internet (50%). 28% of students reported creating, e.g. using multimedia to edit/create photos and videos, 16% reported leisure-related activities and 14% communicating (see Chart 18, Table 2). Aside from in-school activities with the netbook, Chart 18 also shows out of school activities as well as general activities that students have reported doing both in and out of school.

Chart 18. For what activities did Italian netbook students use the netbook in and out of school?
As regards to where netbooks are stored in school, around 30% of Italian students said that they kept it under their desk or in their school bag during the day. Some of them said that they kept it with them all the times because it was practical (22%) or because the school did not have any place to store the netbooks (22%).

2.3 How did 1:1 pedagogical netbook scenarios support teachers?

To help and support the initiating and running of netbook classes, Netbook Pilot teachers were offered examples of 1:1 pedagogical netbook scenarios created by European Schoolnet and other pilot teachers. The majority of Italian teachers (78%) said that they had read pedagogical scenarios (includes answers: rarely, sometimes, often, all the time), whereas 22% said they had never read any of them.

51% of Italian netbook teachers, more enthusiastic than the other pilot teachers, agreed that using scenarios increased their understanding of different ways of working with netbooks (pilot average 36%). 55% created their own scenarios, whereas 48% were still undecided whether using scenarios had really helped their teaching.

On the whole, Italian netbook teachers seemed quite confident about their use of netbooks in their teaching activities: 68% of them agreed with all the statements related to their ability to deal with netbooks in classroom (pilot average 67%). Three-quarters of them knew which content and materials they could use together with netbooks and felt confident about finding good online material for their lessons. Netbook teachers were also fairly confident about their understanding of the potential benefit of netbooks in teaching (67%) and felt that they knew how to integrate netbooks into their teaching effectively (65%). More than half also knew which software to use on netbooks (57%).

However, some Italian netbook teachers estimated that integrating netbooks in everyday teaching could have some costs. 85% of them, more than in the other countries, declared that more classroom management was needed when using the netbooks in class and 77% needed time to prepare the classes more carefully when the use of netbook was involved. Many Italian teachers also estimated that their workload had increased since they started to use netbooks in class (62%).
3 Students’ use of netbooks

This section first looks at students’ use of the netbook that they received from the Acer-European Schoolnet Educational Netbook Pilot outside official school hours. It elaborates on the aspects of the evaluation framework such as educational use vs. leisure use and individual vs. social processes. Aspects regarding how netbooks facilitate interactions within the family are also discussed.

3.1 How were netbooks used outside of school hours?

89% of Italian students said that they brought their netbook home almost every day and only 6% said that they never brought it home. 53% of Italian students carried the netbook home in their school bag with a cover and 40% used a separate computer bag. Very few students did not use a cover or only held the netbook in their hands (8%). (Table 5 a, c)

Chart 19. Where did Italian students use netbooks? Students’ and parents’ opinions

Students were asked where they used their netbooks outside school hours. 91% of Italian students, used them at home (Chart 19), the highest percentage of all the countries. Also 98% of Italian parents reported the same. However, a quarter of Italian students said that they used the netbooks at a friend’s home, while only 4% of parents reported so. 17% of students said that they used them in school for after school activities. For this question students from other countries reported a higher percentage. Only 7% said that they took it on holiday and 8% said that they used it in public places, e.g. the library.

When taking the netbook home, Italian students mostly used it at their own desk (66%) and in their bedroom (62%). However, only 47% of Italian parents when asked the same question replied that the
netbook was used in the child’s own room. Half of the students said that they used the netbook in the living room and 30% in the office or dedicated computer room. Interestingly, a quarter of Italian students, more than in any other country, used it in the kitchen (Table 5 b). Moreover, Italian students mostly used their netbook on their own (87%), and with parents or an adult present (24%). Interestingly 16% of students reported that they used it with friends or other children present while only 3% of the parents said that their child used the netbook with other children. All the other students’ replies regarding the use of netbooks at home match quite closely with what parents reported. Only 1% of the parents said to that they had used the child’s netbook alone without their child being present.

3.2 What formal and informal learning occurred out of school?

When comparing the activities that netbook students for which students used their netbooks in and out of school, Italian students used their netbooks more often out of school than in school. The average activities reported out of school is 49%, as opposed to 29% in school (see Chart 18, “average of all activities”). 76% of Italian students said that the netbook was most often used for studying, 13% said they used it most often for social networking tools and 12% reported playing and entertainment. The netbooks were reported to be least used for social networking (48%), playing and entertainment (40%) and studying (13%). The most popular activities among Italian students were in the categories of looking up things on the Internet (59%) and school-related activities (56%). Moreover, 45% reported leisure activities and 44% creating (see Chart 18, “out of school”).

Out of school, Italian students reported using their netbook with the same subjects as in school (see section2.1). Differences as regards tools used in school and out of school are rather small. Communications tools were used more out of school, as were educational school portals or learning platform sand collaboration tools (around 5-7% difference). Office tools were used a bit less out of school (4% difference), while digital textbooks were used just as often both in and out of school. (Table 6, see “out of school”) Italian students worked individually slightly more often outside school hours than in school (65% against 60%), and slightly more with other students in school (36% against 27%). To estimate the informal learning opportunities brought by netbook use outside school hours, students were asked about activities not related to school work/homework. Half of the students looked for information on topics taught at school and 35% looked for information on topics that are not taught at school, but that are of interest to them (e.g. sport, celebrities, TV shows). 33% said that they followed current events (news, weather) and 26% developed skills related to their hobbies (e.g. learning to play guitar from YouTube videos, getting practical advice about a question related to their hobby). 21% also said that they looked for information in their area of interest in other languages than their mother tongue. On average, Italian students reported 26% of these activities (pilot average 32%, Table 3).

3.3 How did netbooks stimulate students’ interaction within their families?

33% of Italian students said that since receiving the netbook they had talked with their parents at least once a week and 35% reported almost every day (68% in total). Parents’ replies were quite in line with students’, with 47% reporting at least once a week and 23% almost every day (70% in total). 11% of both students and parents reported that they had discussed netbook use at least once since the start of the topic and around 7% of parents and students said that they never talked about it.
When parents were asked about the activities that they had carried out using the netbook with their children, 96% said that they used it for educational school-related activities and 38% used search engines and online reference sources. Less than 20% of parents said that they had used the netbook with their child for other purposes (e.g. communication and multimedia tools, contacting school/teachers, playing games). The Italian parents’ average on this set of questions was 18% (pilot average 23%).

Italian students said that they helped adults in their family to find information and websites they needed (44%), to use e-mail (39%), and to upload photos (35%). To a lesser extent netbook students also helped their families to perform other tasks such as fixing a broken Internet connection (30%), starting to use an Internet browser (27%) or using chat or other communication tools (e.g. Skype, Messenger) (24%). A quarter of students said that they never helped any of their family members with Internet-related issues. On average, students reported 28% of activities in helping adults in their family (pilot average 32%). (Table 4)

3.4 How did parents perceive their child’s netbook usage?

Parents were asked to estimate how much time their children used the netbook for education (e.g. homework, accessing the school website, etc.). 18% of Italian parents estimated their child’s use of the netbook for education as less than 1 hour per average week, 42% estimated it as 1-3 hours per week (in line with other countries) and 35% estimated more. As for using the netbook for social networking, most Italian parents estimated that their child did not use it at all (63%) and 28% estimate from less than an hour to 3 hours per week. Similarly, half of parents did not think that their child used the netbook for playing and entertainment, whereas 43% estimated from less than an hour to 3 hours per week.

When asked whether they knew what their children were doing when using the netbook or other ICT devices, 88% of Italian parents felt that they knew enough about their child’s computer use (pilot average 76%). 7% said that they knew one or two things, but thought that there were things about which they were not aware. Only 2% said that they did not know anything about their child’s computer use.

As for establishing rules about their child’s use of the netbook and other ICT devices, 62% of Italian netbook parents had established clear agreements on the use of the netbook outside school. However, a quarter said that they did not need such terms because they trusted their child, and 10% said to have agreed on some terms but that these were not very clear. Only 2% had not thought about such agreements (Table 4 a, b).
This section discusses the views of teachers, students and parents on the impact of netbooks. It first focuses on the atmosphere in class and how netbooks affect communication patterns among students, parents and teachers, and then looks at the possible impact on a variety of learning aspects.

### 4.1 How did teachers estimate the impact of netbooks?

Italian netbook teachers were asked about the impact of netbooks in and out of school; they were asked to indicate how much they agreed with statements regarding the atmosphere in the classroom and with the possible positive effects of netbooks on learners. A large percentage said that school work became more enjoyable thanks to the use of netbooks (86%) and that students were more motivated in school and learning (82%). 58% also thought that netbooks improved the atmosphere in class, e.g. students were more concentrated, there was less disruption. Teachers estimated that netbooks had a positive impact on teacher-pupil collaboration (90%) and pupil-pupil collaboration (88%). Teachers, however, were less convinced about the positive impact on the teacher-parent communication (37%) and 45% of the parents still had not formed an opinion on the issue (neither agreed nor disagreed). The Italian average on this set of questions was 72% (pilot average 66%, Table 11).

Italian netbook teachers were also positive when considering the impact on various aspects of learning. They felt that students were more independent in their learning (e.g. went over work again, found out more about topics of interest) (69%) and more likely to revise/edit their work (68%). 65% of teachers also agreed that students understood what they were learning more easily thanks to the use of netbook and half of teachers agreed that students tried harder in what they were learning. In general, teachers agreed an average of 63% on learning aspects (pilot average 56%, Table 11).

Italian teachers were also asked about the possibility that netbooks could offer a more individualised learning track for students. Around three-quarters of teachers agreed that students could learn at their own pace and in their own time (78%), that students with good grades (76%) and average grade (72%) could excel further in their learning, and also that students with special needs participated more in lessons (71%). Italian teachers were slightly less confident that netbooks could help students at risk of dropping-out to re-engage with learning (49%). The Italian average on this set of questions was 69% (pilot average 62%, Table 11).

Teachers were asked to estimate whether students’ sense of responsibility towards their work had somewhat changed through their involvement in the pilot. 61% of Italian teachers noticed some change but also thought that their students needed to be reminded of deadlines and tasks. 31% of teachers were more positive and asserted that their students were more responsible for their work and for the completion of their tasks. For 30% of teachers, students took more responsibility for their equipment including netbooks and textbooks. Only 12% did not notice any change at all and said that their students remained dependent on them to finish their tasks.
4.2 How did students estimate the impact of netbooks?

Italian students seemed enthusiastic and reported a very positive impact in a number of items concerning the atmosphere in the classroom. 77% said that school was more enjoyable and around 60% felt more motivated in school and learning. Around 55% of students agreed that the netbooks improved the atmosphere in class and enabled them to work better with other students (62%). Italian netbook students’ average on this set of questions was 63% (pilot average 60%).

About two-thirds of the Italian of Italian students said that they were able to concentrate more and that they tried harder on what they were learning (64% and 63% respectively). 60% said that they understood what they were learning more easily and that they were better organised. About half reported a positive impact on independent learning and on remembering what they were learning more easily as well as the fact that they were more likely to revise their/edit their work (all 56%). 52% said the netbook helped them to learn at their own pace and in their own time. Only 32%, however, felt more confident about taking tests and evaluations. Italian netbook students’ average on learning aspects is 55% (pilot average 52%).

In Italy, 79% of netbook students estimated that their computer and ICT skills had improved. In the specific question, “Since you have been using the netbook, do you think you have become better in the following tasks?” Italian students estimated some progress (average 32% vs. pilot average 37%). Up-skilling took place in the areas of “general Internet tasks” (42%), “high level ICT-tasks” (31%) and “e-Safety” (26%) (see Chart 20).

**Chart 20. Since using the netbook, have you become better in the following tasks?**

In the category of “general Internet task”, an improvement was reported in the following areas: emailing a file to someone/another student or teacher (57%), filing electronic documents in computer folders and subfolders (56%), and installing software on a computer (46%). In “high-level tasks”, the following was reported: creating a multimedia presentation (70%), producing text using a word processing programme...
(67%), using spreadsheet programmes (47%), using a spreadsheet to plot a graph (43%) and editing digital photographs or other graphic images (39%). As for tasks related to “e-Safety”, the following was reported: using the Internet safely to protect their own privacy (42%) and to respect the privacy of others (35%). Around a quarter of Italian students reported gaining skills in the following: using information found on the Internet without plagiarising (27%), judging the reliability of information found on the Internet (25%). A lower percentage also reported improvement in creating blogs or web sites and maintaining them (19%), identifying sources of reliable information (17%), editing online text containing Internet links and images (15%), protecting themselves against spam (13%), editing a questionnaire online (13%) and creating a database (9%).

In general, 62% of Italian students’ attitudes towards the use of ICT devices in learning were in the category of making learning fun and having an interest in the use for ICT per se, whereas 55% agreed with the statements regarding their instrumental approach for future work and studies. For example, 65% agreed that “it will help me in my future life as an adult”.

4.3 How did parents estimate the impact of netbooks?

Two-thirds of Italian parents agreed that that the use of netbooks in school and outside of school allowed their child to learn at his/her own pace (66%) and that netbooks brought opportunities for them to be involved in their child’s education (62%). More than half of the parents were also convinced that the use of netbooks helped students’ informal remediation, e.g. catching up with topics, reinforcing learning after school (57%). The Italian netbook parents’ average score on the issue was 62% (pilot average of 56%).

The majority of Italian parents affirmed that their children’ motivation and engagement in learning had increased (85%) thanks to netbooks and that their ICT skills had improved (81%). Three-quarters also reported a positive impact on social skills (e.g. teamwork, communication skills, collaborative and organisational skills) and on performance in school subjects (e.g. in tests). 72% agreed that netbooks had a positive impact on their child’s personal skills (e.g. initiative), and 63% reported a positive impact on information handling skills (e.g. critically evaluating the validity and value of information and its source) and on intellectual skills (e.g. problem solving). A slightly lower percentage referred to an improvement on spatial and motor skills (e.g. speed of reflexes) (57%). On the statements regarding skills, an average of 71% of Italian parents agreed that there was a positive impact (pilot average 62%).

Italian parents were also positive when estimating an impact on teacher-student collaboration (81%), student-student collaboration (76%) and on teacher-student-parent communication (53%). In general, 84% of Italian parents’ attitudes towards the use of ICT devices in learning fall under the category of an instrumental approach for future work and studies (e.g. to secure a place in the job market) (90%) and because ICT devices offer more learning opportunities outside of school (79%). On the other hand, 75% of the parents’ statements regarding the use of ICT devices in learning were in the category of making learning more fun (79%) and easier (72%).
This section discusses the general attitudes of students, teachers and parents towards the use of ICT in learning, and especially towards the Acer-European Schoolnet Educational Netbook Pilot. Their opinions on the suitability of netbooks in an educational context are discussed, and a number of concerns are outlined. The problems that hindered teachers’ use of netbooks during the pilot are also discussed.

5.1 What were the attitudes of students, parents and teachers towards the use of ICT devices in learning and the Acer-European Schoolnet Educational Netbook Pilot?

As part of the final evaluation students, parents and teachers were asked about their attitudes towards the Acer-European Schoolnet Educational Netbook Pilot. Italians netbook students were among the most positive when they learnt that they would receive a netbook to use, with 83% saying that they were enthusiastic and 55% who felt special and proud to be part of the pilot. 54% of Italian teachers said that they were enthusiastic and 37% felt special and proud to be part of the pilot. On the other hand, about a quarter of teachers were hesitant and 19% though it might cause them extra work, only 9% of students were hesitant and 2% did not care about the project.

65% of Italian parents trusted the decision of the teachers and school heads when they first heard about the project and only 5% were hesitant about it. Half of the parents did not see a problem with schools starting such pilots; however, 29% agreed that schools should consider more issues before starting such a project. In the end, however, 87% of Italian parents said they would recommend the project to their friends’ children.

In terms of Italian netbook teachers’ and parents’ attitudes towards technology, 72% of teachers and 76% of parents said that they agreed with the statement “When it comes to technology, the simpler the better”. Parents and teachers were asked to comment on the suitability of netbooks and most of them reacted positively. On average, Italian parents and teachers were happy with the netbook’s features for educational usage (82% and 76% respectively), compared to 58% of students.

The weight and the size of the netbook were considered the most suitable for children’s usage, with about 90% of parents and teachers agreeing upon this, compared to 69% of students. More teachers (85%) agreed about the suitability of the size of the keyboard and screen than parents (79%) and students (64%). However, the quality of the screen was liked by both parents and teachers (83%) and by 72% of Italian students.

More than 79% of parents and teachers agreed that the track pad was suitable, compared to 56% of students. More than half of Italian teachers agreed on the suitability of the battery life (59%) and the speed of the netbook (56%), whereas slightly fewer of students thought so (48% and 43% respectively). Finally, students’ opinion on the robustness of the netbook was rather low, with only 36% who thought it was robust enough for students to use, compared to 62% of teachers (see Chart 21).
5.2 What concerns and problems did students and parents encounter?

The netbook evaluation also sought to identify more detailed concerns and problems as stated by students, parents and teachers. As regards students’ self reported concerns, more than half were worried that they might damage the netbook (53%). Less than half were worried that the netbook might be stolen (44%) or that they might lose it or leave it somewhere (43%). Other concerns reported by Italian students: 39% were concerned about technical problems and a quarter was worried about Internet safety issues (e.g. online bullying, harassment, inappropriate contacts, and identity theft). Italian students reported an average of 31% concerns and worries (pilot average 34%).

On average Italian students experienced fewer problems (15%) than any other netbook students (pilot average 18%). 18% of students said that they could not follow their lessons if they left their netbook at home, a much lower figure than what teachers reported students as saying: 64% said students had complained about the issue at least occasionally. 38% of students said that their eyes ached from looking at the screen for too long, and a similar amount of Italian teachers said that students had complained about this aspect during lessons (42%) often or sometimes.

Teachers were asked to estimate whether their students had complained about a number of issues. 24% of Italian teachers said that students had complained that writing with the keyboard was more complicated than by hand. 39% of students had complained that they had more homework than before because of technical problems slowing down the class and 40% said that using multiple resources (e.g. Internet, worksheets) was more difficult than using one text book (includes answers: rarely, sometimes, often, all the
time). 87% of Italian netbook parents, more than other countries, said they had not experienced any of the problems listed, such as rough use, issues of jealousy, or bullying by other students. 7% reported children dropping the netbooks.

### 5.3 What obstacles did teachers encounter?

During the Netbook Pilot, 75% of Italian teachers reported having encountered some technical problems with netbooks, of any kind, that made it necessary for them to suspend the use of netbooks totally. 50% reported having such problems often and sometimes, whereas only 1% reported all the time. A third said that they always had technical support available when they needed it and half said that this was sometimes/rarely available.

In Italy, 54% of teachers said that they had some problems with netbooks that became unusable due to any sort of damage or technical failure; 49% of teachers had 1-15% of netbooks unusable in class at some point in. More than half of Italian teachers did not think that such unavailability affected their teaching at all (55%), whereas 33% of teachers said it bothers to a small extent. Another 13% deemed that it affected their teaching negatively (includes answers: to a moderate, great and very great extent).

Netbook problems can be roughly categorised into five different types: problems related to the netbook itself (e.g. hardware issues, software incompatibility); problems caused by the school environment (e.g. firewall issues, incompatibility between netbooks and the school technical infrastructure, no suitable places to use netbooks), problems connecting to the Internet (this could be related to other categories); user-related issues (e.g. uncharged batteries, problems with trackpad) and other behavioural issues (e.g. distracted by games). Within these categories, Italian netbook teachers reported the following: problems due to connecting netbooks to the Internet (58%), user related issues (41%), school environment related problems (38%), behavioural issues (34%) and problems connected to the netbook itself (29%). In general, Italian teachers did not encounter many problems (38% vs. pilot average 44%).

In the category of problems with connectivity most issues were with the Internet connection on students’ (65%) and teachers’ machines (51%). In the second category (school environment), 58% of Italians had problems regarding insufficient Internet access (e.g. Internet not available in a specific classroom), but the school’s filters or firewalls were not a big problem in Italy (14%). For user-related problems, 54% of teachers reported difficulties using the track pad mouse (students had to use an external mouse) and 46% complained about uncharged netbook batteries. Netbook-related problems included software that did not work properly on the netbooks (36%) and hardware problems (22%). Finally, behavioural issues included students being distracted by games, chats, or social networking sites (65%), and students spending too much time on the computer in general (59%) as well as the downloading of inappropriate content or software applications (46%). Only 5% reported theft of netbook and 10% problems of bullying. (Table 8)

Italian netbook teachers used a variety of support mechanisms if they needed help with netbooks. An IT support person or technology coordinator was most often contacted and able to help (70%), as well as another teacher (66%). Teachers were also helped by students in their class (53%), by members of their family (34%) and by an online help desk (31%). Italian netbook teachers also asked the pilot organisers (27%), and used the pilot website (25%) when they needed help. Netbook students most often asked for and received help from a teacher (47%) or a fellow student (45%) but also from members of their family (33%).
6 Supportive and empowering netbook school environments

This section first looks into the schools as a unit, observing how the netbook schools’ priorities and strategies supported the use of ICT, and especially the use of netbooks. The evaluation focused on understanding how the teaching staff was involved in decision-making regarding the integration of netbooks into teaching, support structures set up by the school to help teachers’ collaboration and support provided in terms of professional development opportunities.

6.1 How did the school’s vision empower netbook teachers?

When schools applied for the Netbook Pilot, the schools’ ICT vision was emphasised to ensure that the netbooks were not a separate experiment outside the school’s ICT vision. 70% of Italian netbook teachers agreed that their school’s ICT vision supported the use of netbooks. Regarding the school’s time organisation (e.g. fixed lessons times), 53% of Italian teachers felt that it was suitable for the use of netbooks and 59% said the same in terms of spatial organisation (e.g. classroom size and furniture). 55% of Italian netbook teachers said that their school provided enough technical support as well as institutional support for netbooks. Slightly fewer agreed about pedagogical support for the use of netbooks (43%). 64% of Italian teachers thought that their curriculum was clear and easy to follow making the use of netbooks easy in teaching, and more than half had the time and flexibility to work on netbook projects related to the curriculum (57%). The average score for the Italian school environment in terms of supporting and empowering teachers was 55% (pilot average 57%).
68% of teachers said that their school head actively encouraged them to pursue professional development activities that helped to integrate netbooks into the curriculum. 65% of teachers also said that they easily received permission to attend professional development workshops or training related to netbooks. Teachers were also asked whether such professional development regarding netbooks activities had had any impact on their development as a teacher during the previous 18 months: participating in informal dialogue with teacher colleagues to improve their teaching (88%) and participating in workshops or courses (54%) were the activities which were said to have had a large, moderate and small impact in this respect.

6.2 How did schools support the exchange of practices between teachers?

78% of Italian teachers said that, since the beginning of the Netbook Pilot, they had developed a school curriculum or part of it to make it more suitable for netbooks and 75% said they had discussed and made decisions on the selection of suitable teaching resources for netbooks (e.g., textbooks, exercise books). 73% had exchanged teaching materials for netbooks with colleagues 71% said they had attended staff meetings to discuss their school’s vision and mission on netbooks. The average score for support by Italian schools for exchanges between netbook teachers was 52%, in line with other countries (pilot average 50%).

Netbook teachers in Italy also communicated with each other in a variety of ways: 88% engaged in informal discussions in school about netbooks, 70% said they used e-mail, 67% had organised meetings in school to talk about and plan netbook use. 46% of teachers had attended a face-to-face meeting organized by the Netbook Pilot or pedagogical coordinator, and Italian teachers also used online platforms (31%), chats (25%) and online meetings tools (11%) to communicate with other teachers about netbooks. On average, Italian netbook teachers reported very similar levels of communication as other netbook teachers.
What did teachers gain from the Acer-European Schoolnet Educational Netbook Pilot?

One of the main rewards that Italian teachers reported in regards to participating in the Netbook Pilot were higher student motivation (79%) and more training opportunities in new ways to teach (38%). For Italian teachers, higher test scores for students (23%) and also changes in their work responsibilities making the work attractive (14%) were also gratifying. Some teachers also considered the recognition from the community outside of school to be a reward (8%).

Even though 76% of Italian netbook teachers estimated that they still needed to learn more about how to integrate ICT into teaching and learning, 88% said that they would like to continue using netbooks in the following academic year. Experiences gained from the pilot with regards to professional development were numerous, and these were positively confirmed by Italian teachers. Around 80% of teachers said that they now alternated more different activities with and without ICT in their lessons (82%), had a better understanding of how to integrate ICT into their subject (85%) and used a greater variety of resources (online and offline) during their classes (79%). The average score for professional development gain in Italy was 75%, higher than the pilot average (71%). Indeed, 82% of Italian teachers said that they would recommend the use of netbooks in school to their fellow teachers!
1 The Pilot Setup: Spain

Pilot schools

• 17 schools, including 40 classes, were selected for the Pilot in collaboration with the Instituto de Tecnologías Educativas of the Ministry of Education in Spain and the Autonomous Communities.
• The number of netbook classes in these schools varied from one to four per school: three schools had 4 netbook classes; two had 3 classes, 10 had 2 classes and 2 schools had 1 netbook class.
• Ten of the schools participated in the pre-pilot in the previous semester (January 2010 – July 2010).
• ICT level of the Pilot schools according to teachers’ estimation: 13% were at the beginning phase, 45% at an average level and 43% had an advanced level.

Questionnaire

• At least one teacher replied to the questionnaire in each school (n=159).
  - 133 were teachers; 11 ICT coordinators; 15 other
  - 71 teachers had been part of the pre-pilot.
  - 63% had been teaching for more than 10 years
  - ICT skills: 54% self-evaluated as having beginner or moderate ICT skills, 29% good ICT skills and 16% said that they were experienced or confident users
  - 98% had access to a PC or laptop at home (aside from the netbook received in the pilot)
• At least one student replied to the questionnaire in each school (n=609), one school abstained
  - 59% boys, 41% girls.
  - 12 years old=7%, 13 years old=45%, 14 years old=36%; 15 years old=7%, 16 years old=3%, older=1%
  - ICT skills: 29% self-evaluated as having beginner or moderate ICT skills, 48% good ICT skills and 21% said that they were experienced users (2% blank)
  - 60% had access to laptop or mini-computer at home (apart from the netbook received in the pilot)
• The parents’ questionnaire was completed by 351 individuals
  - Roles: 64% mother, 35% father, 1% other
  - ICT skills: 56% self-evaluated as having beginner or moderate ICT skills, 19% good ICT skills, 16% said that they were experienced or confident users and 9% non-user

Events

• Instituto de Tecnologías Educativas of the Ministry of Education organised an on-line training course for all Spanish netbook teachers.
• Pre-pilot on-line launch event: 27 April 2010
• Pilot launch event: 3 November 2011
• Escuela 2.0 Conference in Zaragoza: 13-15 April 2011
• Evaluation meeting in Madrid: 17 June 2011
• III Congreso Escuela 2.0 in Granada: 6-8 October 2011
This section highlights the emerging trends on netbook use in an educational context. It focuses on the aspects of the evaluation framework: how learners and teachers use netbooks in various educational contexts, e.g. in and out of school; individually and collaboratively; in educational use and leisure use. Firstly, the subjects in which netbooks were used are reported, followed by how teachers planned and used netbooks in class. Finally, reports are given on support from 1:1 pedagogical netbook scenarios and teachers’ confidence in integrating netbooks. 1:1 pedagogical scenarios help teachers to “orchestrate” the learning situation with netbooks, focusing on the interplay between different types of activities, and between individual and social processes.

2.1 In which subjects and how much were netbooks used?

Spanish netbook teachers indicated 28 school subjects that they taught with netbooks. The most common subjects were: Foreign Languages (21%), Mathematics/Geometry (18%), Spanish and other subject (both 15%), followed by ICT/Informatics (13%), and History (11%).

Netbook students estimated that they used their netbooks in school mostly in Mathematics/Geometry (41%) as well as in Modern Foreign Languages and Spanish (both 34%). Netbooks were also used in Social Studies by 21% of students, as well as in Music, Geography and Biology by around 20% of students.

Between March and May 2011, almost half of the Spanish netbook teachers said that they used netbooks in more than 50% in their teaching time, and another 47% of teachers said between 11% and 50% of their teaching time. Only 3% used it between 1-10% of their teaching time and 2% said that they did not know, the lowest figure among participating countries.

2.2 How were netbook classes planned and run?

77% of Spanish netbook teachers used the notebook that they were given by the pilot organisers to prepare school activities (pilot average 89%). Teachers mostly prepared their lessons alone at home (86%), whereas 19% also said that while at home, they also use online tools to collaborate with other teachers. 65% also prepare lessons and homework alone in school. However, almost half said that they collaborated with other netbook teachers in their own school and 43% said that they worked with colleagues who were not part of the netbook team. 19% also worked with netbook teachers in other schools in Spain. On average, 32% of Spanish netbook teachers said that they collaborated with other teachers when preparing their teaching activities (pilot average 29%, Table 10).

For in-class activities, almost all Spanish teachers planned for individual work to be done in class, planning to alternate it with collaborative work (82%). 76% of teachers planned for students to work individually at home, however, some also planned for collaborative (online) work to be done at home (38%). The latter figure is the highest figure among participating countries.
Introducing Netbook Pedagogies in Schools – Spain

Teachers were asked how they alternated different aspects of teaching during their actual netbooks lessons according to the following paradigms: frontal teaching, e.g. the teacher demonstrates and explains to the whole class or a student gives a presentation for the whole class; individual processes, which include teacher support and explanations to individual students, or students working individually at their own pace or at the same pace; and collaborative processes such as students working in groups. Spanish netbook teachers said that they alternated frontal style teaching (84%) with individual (79%) and collaborative (79%) processes every lesson or sometimes. On average, 81% of Spanish netbook teachers reported alternating between different teaching aspects either every lesson or sometimes (pilot average 81%, Table 7).

Regarding the school subjects reported in section 2.1, teachers reported that in class, students mostly alternated between individual work whilst using the Internet (96%) and working together with other students whilst using the Internet (73%). Around 27% stated that their students worked alone or together without the Internet. As for collaborative work, half of the teachers said that their students collaborated with other students with or without using the Internet. The average amount of teacher stating that their students worked individually (with or without the Internet) was 62%.

As for Spanish netbook students working on the school subjects reported in section 2.1 while in school, 80% reported working individually online and 37% reported working collaboratively online. 11% reported working alone off-line and 6% reported collaborative off-line work. The most popular tools used with these school subjects were collaboration tools (57%), and educational school portals or learning platforms (43%), followed by communication and office tools (both 33%) and subject-specific educational software and digital resources (both 28%). Interactive whiteboards, digital media tools, digital textbooks and virtual learning environments were all used by around 20% of students. Students reported use of virtual learning environments was highest in Spain (18% vs. pilot average 10%) (Table 6, see “in school”).

Chart 22. For what activities did Spanish netbook students use the netbook in and out of school?
On average 44% different activities were reported by Spanish students while using the netbook in school (pilot average 36%). These activities are divided into five categories: looking up things on the Internet (e.g. use search engines and online reference sources), school related activities (e.g. homework, contacting teachers, checking the school website), communicating (e.g. with relatives and family friends, online forums and chats, and social networking), creating (e.g. creating websites/writing blogs, editing/creating photos and videos) and leisure (e.g. music, games, videos). In school, the most popular were school-related activities (78%) and looking things up on the Internet (66%). 55% reported creating, e.g. using multimedia to edit/create photos and videos, 27% reported leisure-related activities and 26% communicating (see Chart 22, Table 2). Aside from in school activities with the netbook, Chart 22 also shows out of school activities as well as general activities that students have reported doing both in and out of school.

Most Spanish students (38%) said that in school, the netbooks were stored in a cupboard in the classroom, 20% stated that they were stored in a locked classroom, 13% kept it in a personal locker in the school and 11% kept their netbook with them at all times, because it was practical, or kept their netbook elsewhere.

2.3 How did 1:1 pedagogical netbook scenarios support teachers?

To help and support the initiating and running of netbook classes, Netbook Pilot teachers were offered examples of 1:1 pedagogical netbook scenarios created by European Schoolnet and other pilot teachers. 73% of Spanish teachers said that they had read pedagogical netbook scenarios and 42% had created their own 1:1 scenarios (includes answers: rarely, sometimes, often, all the time). 34% of Spanish netbook teachers agreed that using scenarios increased their understanding of different ways of working with netbooks. A large part of the teachers had not formed an opinion on the issue (51% neither agreed nor disagreed). Moreover, it was shown that, especially for teachers with beginner or moderate ICT skills, 1:1 pedagogical netbook scenarios increased understanding of different ways of working with netbooks (37%), as opposed to teachers who said they had expert skills in ICT (3%).

Overall, Spanish netbook teachers were the most confident about their use of netbooks in their teaching activities: 75% agreed with all the statements related to their ability to deal with netbooks in class (pilot average 67%). More specifically, 87% said that they now understood the potential benefits of netbooks in teaching. This refers mainly to knowing how to find good online material to be used with students, as stated by 74% of teachers. Around 70% of teachers said that they were now confident that they knew how to integrate netbooks in effective teaching and which software to use on netbooks. The same percentage of teachers also said that they could find enough content and learning resources in their national language.

Many Spanish netbook teachers estimated that learning how to integrate netbooks into their teaching came with some cost; first of all, 86% estimated that they needed to prepare classes more carefully when the using netbooks. 82% said that more classroom management was needed with netbooks and 69% said that using netbooks had increased their workload. More than two-thirds (73%) received support and examples from other netbook colleagues. Only about one third of the teachers stated that they had enough time to prepare for specific netbook activities.
This section first looks at students’ general use of the netbook that they received for the Acer-European Schoolnet Educational Netbook Pilot. It elaborates on the aspects of the evaluation framework such as educational use vs. leisure use and individual vs. social processes. Aspects regarding how netbooks facilitate interactions within the family are also discussed.

### 3.1 How were netbooks used outside school hours?

56% of Spanish netbook students said that they brought their netbook home almost every day (pilot average 73%). 35% said that they never brought their netbook home. Most Spanish students brought their netbook home in their school bag with a cover (63%), 23% had a separate computer bag, whereas 9% carried their netbook in their hands (Table 5 a, c).

Spanish netbook students were asked where they used their netbooks outside the school hours. Aside from using them at home (96%), netbook students reported multiple places of use. Almost one third said that they also used them at friends’ house; around 20% used it in school for “after school activities”; and in public places (e.g. in the library), 12% took the computer on holiday and only 3% used it on the way home (see Chart 23).

**Chart 23. Where did Spanish students use netbooks? Students’ and parents’ opinions**
Spanish students said that when they took their netbook home from school, they mostly used it in their own bedroom (66%), on their own desk (54%) and in the living room (38%). 20% used it in the office or a dedicated computer room and around 10% in the kitchen and dining room (Table 5 b). Moreover, when asked with whom they used the netbook, students reported that they mostly used it on their own (89%), with friends and other children (16%) and with parents or an adult around (13%). These percentages match rather closely with what parents reported about their children’s use of netbooks at home. Only 1% of parents said that they had used the child’s netbook alone without their child being present.

3.2 What formal and informal learning occurred out of school?

When comparing the activities for which netbook students used their netbook in and out of school, it can be observed that Spanish students used their netbooks slightly more out of school (49%) than in school (44%). 76% said that they used the netbook most often for studying, e.g. doing their homework and connecting to the school’s website, 16% reported that they used it most often for social networking tools. Only a small group of students said that they most often used it for playing and entertainment. When asked about the activities that they used their netbooks for the least 42% reported playing and entertainment, 35% social networking sites and 23% studying. The popular activities were reported in the categories of school-related activities (57%), looking up things on the Internet (53%) and 52% reported activities of creating (e.g. multimedia). 48% mentioned communicating and 42% leisure activities. (Chart 22, “out of school”).

Out of school, Spanish students reported using their netbook with the same subjects as in school (see section 2.1), but with a slightly lower percentage (average 2% lower than in school), except for History, Art History, Physical Education and Design and Technology, where slightly higher percentages were reported. The same tools are reported to be used with these school subjects as in school. The most popular of these were collaboration tools (57%) and educational school portals or learning platforms (44%), followed by communication tools (36%) and office tools (33%). Interestingly, subject-specific
Introducing Netbook Pedagogies in Schools – Spain

educational software was also used slightly more at home (4% difference). The use of virtual learning environments was highest in Spain with 16% of students using them at home. Mobile devices were not used to a large extent, but were used slightly more at home (11%).

To identify the informal learning opportunities brought by netbook use outside of the school hours, netbook students were asked about activities not related to school work or homework. Spanish netbook students reported many different usages outside school hours; to look for additional information on topics taught at school (48%), to follow current events (38%) and to look for information on topics that are not taught at school but that are of interest (37%). 25% looked for information on their area of interest in other languages than in their mother tongue and 21% said they used them to develop skills related to their hobbies. On average, Spanish students reported 30% of these activities (pilot average 32%).

3.3 How did netbooks stimulate students' interaction within their families?

26% of Spanish netbook students said that since they receiving their netbook, they had spoken with their parents about netbook use almost every day, 25% said they had done so at least once a week. Spanish netbook parents’ perception differs somewhat, with 40% reporting having discussed it with their children at least once a week. 12% of students talked with their parents once since the start of the pilot or once in the previous month and 10% never talked about their netbook use.

Netbook parents were asked about which kind of activities they used the netbook for with their children. In general they used it for various activities: 88% said that they had used it for educational school-related activities, followed by more than half of parents who used search engines and online reference sources with their children (55%). 40% checked the school website for announcements with their children and 36% contacted the school or teachers about issues related to school activities. 26% of parents stated that they used multimedia to edit with their children and 23% used social networking sites with their children. The Spanish parents’ average on this set of questions was 18% (pilot average 23%).

Furthermore, netbook students said that they helped members of their family to use the Internet, 59% helped with email, 55% helped them to start using an Internet browser, 45% to find information and websites they needed and 40% helped fix a non-working Internet connection. Around 30 % of students helped their parents to upload photos, to set up an account and profile in a social network site or to use chat or other communication tools. On average, students reported 34% of activities in helping adults in their family (pilot average 32%, Table 4).

3.4 How did parents perceive their child’s netbook usage?

Spanish netbook parents were asked to estimate how much time their children used the netbook for education (e.g. homework, connecting to the school website). More than half of the Spanish parents (59%) estimated their child’s use of the netbook for education as 1-3 hours per average week, whereas 26% estimated it as less than 1 hour per week. On the other hand, 10% thought their children used the netbook for education more than 3 hours per week. 4% of parents had no idea and 3% thought that their child did not use the netbook for education at all. A relatively high number of parents (42%) thought that their child did not use the netbook for social networking, 31% thought they used it for less than one hour per week.
and 23% for more than one hour per week. As for playing and entertainment, 38% of Spanish parents estimated that their child used the netbook for less than one hour per week, 19% estimated more than one hour and 41% estimated not at all.

When asked whether parents knew what their children were doing when using the netbook or other ICT devices, 66% of Spanish parents said that they felt that they knew enough about their child’s computer use. This is the lowest figure among participating countries (pilot average 76%). 25% of parents admitted that they knew one or two things, but there were a lot of things they were not aware of. 8% would like to know more about their child’s computer use and 2% said they did not know anything about it (Table 4 a).

As for establishing rules about the child’s use of the netbook and other ICT devices outside of school, 47% of Spanish parents said that they had clear agreements with their children on netbook usage for both school and leisure. A further 17% said that they had agreed on some terms, but that these were not very clear. 31% of the Spanish parents had not agreed any terms, saying it was not necessary as they trusted their child, and 4% said that they had not thought of making such an agreement (Table 4 b).
This section discusses the views of teachers, students and parents on the impact of netbooks. It first focuses on the atmosphere in class and how netbooks affect communication patterns among students, parents and teachers, and then looks at the possible impact on a variety of learning aspects.

4.1 How did teachers estimate the impact of netbooks?

The majority of Spanish netbook teachers thought that netbooks in class made students more motivated in learning and in school in general (86%), and that netbooks made school work more enjoyable (81%). 62% agreed that netbooks improved the atmosphere in class, e.g. students were more concentrated, there was less disruption in class. 86% of teachers estimated that netbooks had a positive impact on teacher-student collaboration and 85% on student-student collaboration. They felt less certain about teacher-parent communication, for which 42% of Spanish parents agreed that there was a positive impact, while 42% had not formed an opinion yet. The Spanish average on this set of questions was 71% (pilot average 66%, Table 11).

Spanish netbook teachers were positive in their observations on the impact of netbooks on learning aspects; 77% observed that their students were more independent in their learning, e.g. students went over their work again and found out more about topics of interest. More than half agreed that students were more likely to revise and edit their work thanks to netbooks. Almost half of the Spanish teachers thought that students tried harder in what they are learning and understood what they were learning more easily. With these percentages on the impact of netbook use on learning, Spanish teachers rank in the middle among participating countries (56% vs. pilot average 56%, Table 11).

Netbook teachers were also asked about the possibility that netbooks could offer a more individualised learning track for students. 81% of Spanish teachers estimated that netbooks allowed students to learn at their own pace and in their own time. When asked if netbooks could help students to excel further in their learning, 68% of teachers thought that they helped students with good grades and 53% thought that they helped students with average grades. More than half of the teachers were of the opinion that students with special needs participated more in lessons (57%), but only 35% thought that netbooks helped students at risk of dropping out to re-engage with learning. The Spanish average on this set of questions was 59% (pilot average 62%, Table 11).

69% of netbook teachers said that they saw some change in students’ sense of responsibility towards their work, but estimated that students still needed to be reminded of deadlines. Around 26% of teachers thought that involvement in the netbook project enabled students to take more responsibility for their work and completion of tasks and that they took more responsibility for their equipment, including netbooks. 22% saw no change in the fact that students needed to be reminded to finish tasks.
4.2. How did students estimate the impact of netbooks?

68% of Spanish netbook students said that netbooks made school work more enjoyable and 66% agreed that netbooks made them more motivated in learning and in school in general. 64% estimated that netbooks enabled them to work better with other students on tasks and 57% said that they improved the atmosphere in class. Spanish netbook students’ average on this set of questions was 64% (pilot average 60%).

Spanish netbook students, like their Italian counterparts, were rather positive in their observations on the impact of netbooks on learning aspects. About two-thirds thought they could learn better at their own pace and in their own time and the same number agreed that they were more likely to revise or edit their work (both 62%). 58% said they now tried harder in what they were learning and that they felt more independent in their learning. About half agree that netbooks helped them to understand what they were learning more easily (55%), to concentrate more on learning (54 %) and to remember what they had learnt more easily (52%). 43% felt more confident about taking tests and evaluations. Spanish netbook students’ average on learning aspects was 57% (pilot average 52%).

In Spain, 56% of netbook students estimated that their computer and ICT skills had improved and 53% said that the netbook helped them to be more organised. In the specific question, “Since you have been using the netbook, do you think you have become better in the following tasks?” Spanish students estimated high level of progress (average 46%, vs. pilot average 37%). Up-skilling took place in the areas of “general Internet tasks” (56%), “e-Safety” (47%) and “high level ICT-tasks” (42%) (Chart 24).

In the category of “general Internet task”, an improvement in the following areas was reported: emailing a file to someone/another student or teacher (80%), filing electronic documents in computer folders and subfolders (65%), installing software on a computer (57%) and participating in social networks and using most of their features (47%). In “high-level tasks” the following was reported: creating a multimedia presentation (60%), producing text using a word processing programme (57%), creating a blog or website and maintaining them (54%), editing digital photographs or other graphic images (44%) and using information found on Internet without plagiarising (44%). For tasks related to “e-Safety” the following was reported: using the Internet safely to protect their own privacy (52%), to protect themselves against bullying (51%) and to respect privacy of others (46%).

**Chart 24. Since using the netbook, have you become better in the following tasks?**
In general, 53% of Spanish students agreed with the statements regarding the instrumental approach of ICT for the future: 67% of students thought it was worth using ICT devices for learning because it would help them in their adult life. On the other hand, 59% of students were interested in the use for ICT per se, e.g. 69% of students thought that using ICT devices for learning is fun, and 59% were very interested in ICT devices.

4.3. How did parents estimate the impact of netbooks?

76% of Spanish parents agreed that netbooks had a positive impact on their child’s engagement and motivation in school and in learning in general. 72% agreed that the use of netbooks in and out of school has a positive impact on teacher-student cooperation, 65% on student-student collaboration and 60% on teacher-student-parent communication.

63% of Spanish parents agreed that the use of netbooks in and out of school had an impact on how their child could learn at his/her own pace. 60% agreed on the impact on their child’s informal remediation, e.g. catching up with topics, reinforcing learning after school; and 55% estimated that netbooks had brought better opportunities for parents to be involved in their child’s’ education. The Spanish netbook parents’ average score on the issue is 59% (pilot average of 56%).

80% of parents thought that the netbook had a positive impact on ICT skills and 76% on engagement and motivation in school and learning. Around 70% agreed that netbooks had a positive impact on social skills (e.g. teamwork, communication skills, collaborative and organisational skills) and information handling skills (e.g. critically evaluating the validity and value of information and its source). Slightly more than half of Spanish parents agreed that there was also an impact on personal skills such as taking initiative, persistence, self reflection on the learning process and intellectual skills (e.g. problem solving) and 47% of parents saw improvements in spatial and motor skills (e.g. speed of reflexes). On average, 61% of Spanish parents agreed on this set of questions (pilot average 62%). On average, 29% of parents stated that there was no impact on the above questions, and only 3% stated a negative impact.

In general, the vast majority of Spanish parents agreed with the statements regarding the use of ICT devices as instrumental for future work and studies (90%), e.g. to secure a place in the job market (96%) and to acquire technical and digital skills. On average, 85% agreed on issues related to students engaging with ICT per se and because they offered more learning opportunities outside of school (88%).
This section discusses the general attitudes of students, teachers and parents towards the use of ICT in learning, and especially towards the Acer-European Schoolnet Educational Netbook Pilot. Their opinions on the suitability of netbooks in an educational context are discussed, and a number of concerns are outlined. The problems that hindered teachers’ use of netbooks during the pilot are also discussed.

5.1. What were the attitudes of students, parents and teachers towards the use of ICT devices in learning and the Acer-European Schoolnet Educational Netbook Pilot?

As part of the final evaluation, students, parents and teachers were asked about their attitude towards the Acer-European Schoolnet Educational Netbook Pilot. 81% of Spanish netbook students said that they were enthusiastic when they first heard that they would receive a netbook to use and 49% felt special and proud to be part of the pilot. Two-thirds of the netbook teachers in Spain also said that they were enthusiastic about the project and but only 24% said they felt special and proud to be part of it, while 22% of teachers and 14% of students were hesitant about the project. In terms of concerns that the project may give them an extra workload, results for students and teachers were similar, at 17% and 16% respectively.

65% of Spanish netbook parents said that they trusted the decision of the teachers and school heads to run the pilot and 38% said that they were interested in it. Only 6% of Spanish parents, however, were fully convinced by the project, the lowest figure among participating countries. Opinions were split regarding the statement “schools should consider more issues before starting such a project”, with 32% of parents who agreed, 34% who neither agreed nor disagreed and 35% who disagreed with the statement. 52% of parents disagreed with the statement that “schools should be more careful in dealing with commercial providers” (24% agreed with the statement and 25% disagreed). All in all, parents were content with the Netbook Pilot, with 86% saying that they would recommend it to a friend’s child (pilot average 80%).

In terms of Spanish netbook teachers’ and parents’ attitudes towards technology, 75% of teachers and 70% of parents said that they agreed with the statement “When it comes to technology, the simpler the better”. Spanish parents were most satisfied with the netbook’s features and suitability for their child (75%), than teachers (average 63%) or students (average 54%). As a general trend, parents seemed more satisfied with specific features than teachers and students. The weight of the netbook was considered the most suitable for children’s usage; 88% of parents and 85% of teachers agreed upon this. On the contrary 68% of the students thought that the netbook was too heavy to carry around. A high percentage of parents (86%) thought that the netbook was suitable for educational use. Parents and teachers also thought that the size of the netbook was suitable for children (84% of parents, 69% of teachers), as was the size of the keyboard (74% of parents and 71% of teachers). 61% of students thought the size of the netbook was good and 58% were content with the keyboard. (Chart 25)
In terms of suitable battery life, 76% of parents thought it was good, as did 59% of teachers, but only 41% of students. Moreover, on the issues of robustness, 62% of parents agreed that the netbook was suitably robust, as did 53% of parents and 51% of students agree. The speed of the netbook received the lowest level of satisfaction in Spain, 44% of teachers thought the netbook was fast enough for students and but only 35% of students thought so. This issue was not addressed to parents (Chart 25).

5.2. What concerns and problems did students and parents encounter?

The netbook evaluation also sought to identify more detailed problems and worries as stated by students and parents. A high proportion of Spanish students were afraid that they might lose their netbook or leave it somewhere (71%), that someone might steal their netbook (69%) or that their netbook might get damaged (67%). 48% were worried about technical issues and 42% about Internet safety (e.g. online bullying). Around a quarter were worried about spending too much time on the netbook and being distracted by games, chat, etc. and downloading inappropriate content or software applications. 20% of students did not feel safe going home from school with their netbook. On average, 44% of Spanish students had concerns about the netbook, one of the highest figures among the pilot countries (average 34%).

Spanish students reported an average of 19% of problems (pilot average 18%). 40% of Spanish students said that they had a problem with software that did not work properly on the netbook. 32% of students said that their eyes ached from looking at the screen for too long. This, in line with what teachers reported students saying. 25% of students said that they could not follow the lesson if they did not have the netbook, a much lower figure than what teachers report students complaining about (62%). Among other problems, 21% of students reported having been bullied by other students who did not receive a netbook and 12% of students said that they were affected by a broken netbook (pilot average 14%). Teachers also were asked to estimate whether their students had complained about a number of issues. 68% of Spanish netbook teachers said that their students complained that using multiple resources, for example conventional worksheets and Internet...
based resources, was more difficult than using one text book. 60% of teachers reported that students had complained about receiving more homework than before due to technical problems with netbooks slowing down the class. 43% said that students had complained that writing with the keyboard was more complicated than by hand. 88% of Spanish netbook parents said they had not experienced any of the problems listed, such as dropping the netbook, rough use, damage through liquids or bullying by other students. 8% reported jealousy from other students who had not received netbooks.

5.3. What obstacles did teachers encounter?

During the Netbook Pilot, 85% of Spanish teachers reported having encountered technical problems with netbooks, of any kind, that meant it was necessary for them to suspend the use of netbooks totally (in line with the other countries). 45% reported having such problems often and sometimes, whereas only 1% reported all the time. More than half said that they had technical support available when they needed it. In Spain, 59% of teachers said that they had some netbooks that became unusable due to any sort of damage or technical failure; 57% of teachers had 1-15% of netbooks unusable in class at some point in time. Slightly over half of the Spanish teachers did not think that such unavailability affected their teaching at all, whereas 38% of teachers said it bothered them to a small extent. Only 8% of teachers said it negatively affected them (includes answers; to a moderate extent and great extent).

Netbook problems can be roughly categorised into five different types: problems related to the netbook itself (e.g. hardware issues, software incompatibility); problems caused by the school environment (e.g. firewall issues, incompatibility between netbooks and the school technical infrastructure, no suitable places to use netbooks), problems connecting to the Internet (this could be related to other categories); user-related issues (e.g. uncharged batteries, problems with trackpad) and other behavioural issues (e.g. distracted by games). Within these categories, Spanish netbook teachers reported the following: problems due to connecting netbooks to the Internet (64%), behavioural issues (38%), user related issues (37%), problems related to the netbook (36%) and problems related to the school environment (33%).

Most problems were with the Internet connection on students’ (75%) and teachers’ machines (52%). The second problem area, behavioural issues, included students spending too much time on the computer in general (59%), or students being distracted by games, chats or social networking sites (58%). 54% had problems with students downloading inappropriate content. As regards user-related issues, 60% of teachers stated problems with the trackpad where students had to use an external mouse, and uncharged netbook batteries (42%). As for problems with the netbook itself, 47% of teachers reported problems with software that did not work properly on the netbook and 24% hardware problems. The most common problem related to the school environment was regarding insufficient Internet access (49%). (Table 8)

Spanish netbook teachers used a variety of support mechanisms if they needed help with netbooks, but some more than others. An IT support person or technology coordinator or another teacher was most often contacted and able to help (around 70%), while an online help desk, community or website was useful for 42% of teachers. Spanish teachers also addressed their problems successfully to the pilot organisers (38%). Friends or colleagues outside school were asked for help too (30%), as were students in their class (31%). 24% mentioned receiving help from a member of their family. Netbook students, on the other hand, most often asked for and received help from fellow students (52%) and teachers (50%), but also from members of their family (36%).
6 Supportive and empowering netbook school environments

This section first looks into the schools as a unit, observing how the netbook schools’ priorities and strategies supported the use of ICT, and especially the use of netbooks. The evaluation focused on understanding how the teaching staff was involved in decision-making regarding the integration of netbooks into teaching, support structures set up by the school to help teachers’ collaboration and support provided in terms of professional development opportunities.

6.1. How did the school’s vision empower netbook teachers?

When schools applied for the Netbook Pilot, the schools’ ICT vision was emphasised to ensure that the netbooks were not a separate experiment outside the school’s ICT vision. 92% of the Spanish netbook teachers agreed that their school’s ICT vision supported the use of netbooks. 80% said that their school provided enough technical support for netbooks, 76% said the same for pedagogical support, 73% for institutional support and 63% for financial support for the use of netbooks.

Regarding the school’s spatial organisation (e.g. classroom size and furniture), 71% of Spanish teachers felt that it was suitable for the use of netbooks and 63% said the same for time organisation (e.g. fixed lessons times). 51% thought that their curriculum was clear and easy to follow, making the use of netbooks easy in teaching and 54% agreed that they had the time and flexibility to work on netbook projects related to the curriculum. The average score for the Spanish school environment in terms of supporting and empowering teachers was 65% (pilot average 57%).

67% of teachers said that their school head actively encouraged them to pursue professional development activities that helped to integrate netbooks into the curriculum and 51% easily received permission to attend professional development workshops. The teachers were also asked whether such professional development regarding netbooks activities had impacted their development as a teacher during the previous 18 months:
participating in informal dialogue with teacher colleagues to improve their teaching (88%), carrying out research on a professional topic of interest (77%), and taking part in workshops or courses (76%) were the activities which were said to have had a large, moderate or small impact in this respect.

6.2. How did schools support the exchange of practices between teachers?

84% of Spanish netbook teachers said that, since the beginning of the Netbook Pilot, they had discussed and made decisions on the selection of suitable teaching resources (e.g., textbooks, exercise books) for netbooks, and to exchange teaching materials suitable for netbooks with colleagues (82%). 78% said to be part of developing school curriculum to make it more suitable for netbooks and 73% said to attend staff meetings to discuss their school’s vision and mission on netbooks (includes answers: all the time, often and sometimes). The average score for support by Spanish schools for exchanges between netbook teachers was 56% (pilot average 50%).

The most common form of communication with other netbook teachers in Spain was through informal discussions in school about netbooks (89%) and through email (87%). 81% also said that they had participated in organised meetings in school to talk about and plan netbook use. 53% of teachers used an online platform, the highest figure among participating countries. The Spanish average on communication amongst colleagues was 56% (pilot average 50%).
What did teachers gain from the Acer-European Schoolnet Educational Netbook Pilot?

One of the main rewards that Spanish teachers reported in regards to participating in the Netbook Pilot were higher student motivation (80%) and more training opportunities in new ways to teach (60%). For Spanish teachers, the opportunity to work as a teacher specialised in 1:1 pedagogy was gratifying (10%), as were the changes in the work responsibilities that made the job more attractive (11%).

Spanish teachers were very positive about the Netbook Project, 79% estimated that their experience had had a positive impact on different aspects of their professional development (pilot average 71%). Even though 88% of Spanish netbook teachers estimated that they still needed to learn more about how to integrate ICT into teaching and learning, almost the same number (86%) said that they now had a better understanding of how to integrate ICT into their subject. 86% now alternated a wider range of activities with and without ICT in their lesson, 77% estimated that they were better able to evaluate when ICT is required and when not, and 76% used a greater variety of online and offline resources. Moreover, 88% said that they would recommend the project to fellow teachers in the school.
1 The Pilot Setup: **Turkey**

**Pilot schools**

- 27 schools, including 40 classes, were selected for the pilot in collaboration with the Ministry of National Education.
- The number of netbook classes in these schools varied from one to four: one school had 4 netbook classes; one school had 3 classes; 8 schools had 2 classes and 17 schools had 1 netbook class.
- Ten of the schools participated in the pre-pilot in the previous semester (January 2010 – July 2010).
- ICT level of the pilot schools according to teachers’ estimation: 32% were at the beginning phase, 56% had an average level and 12% had an advanced level.

**Questionnaire**

- **At least one teacher replied to the questionnaire in each school (n=142).**
  - 121 were teachers; 9 ICT coordinators; 12 other
  - 32 teachers had been part of the pre-pilot
  - 44% had been teaching for more than 10 years
  - ICT skills: 52% self-evaluated as having beginner or moderate ICT skills, 26% good ICT skills and 21% said that they were experienced or confident users

- **At least one student replied to the questionnaire in each school (n=530)**
  - 42% boys, 57% girls (1% blank)
  - 11 years old=3%, 12 years old=18%, 13 years old=32%, 14 years old=10%; 15 years old=15%, 16 years old=11%, older=9%
  - ICT skills: 37% self-evaluated as having beginner or moderate ICT skills, 37% good ICT skills and 24% said that they were experienced users (2% blank)
  - 60% had access to laptop or mini-computer at home (aside from the netbook received in the pilot)

- **Parents’ questionnaire was replied by 644 individuals**
  - Roles: 59% mother, 37% father, 4% other
  - ICT skills: 62% self-evaluated as having beginner or moderate ICT skills, 23% good ICT skills, 6% said that they were experienced or confident users and 10% non-user

**Events**

- Launch meeting in Ankara: 23 March 2010
- Teachers meeting in Istanbul: 15 December 2010
This section highlights the emerging trends on netbook use in an educational context. It focuses on the aspects of the evaluation framework: how learners and teachers use netbooks in various educational contexts, e.g. in and out of school; individually and collaboratively; in educational use and leisure use. Firstly, the subjects in which netbooks were used are reported, followed by how teachers planned and used netbooks in class. Finally, reports are given on support from 1:1 pedagogical netbook scenarios and teachers’ confidence in integrating netbooks. 1:1 pedagogical scenarios help teachers to “orchestrate” the learning situation with netbooks, focusing on the interplay between different types of activities, and between individual and social processes.

2.1 In which subjects were netbooks used and how much?

Turkish netbook teachers indicated 27 school subjects that they taught with netbooks. The most common subjects were: Foreign Languages (27%), Mathematics/Geometry (21%), History and ICT/Informatics (both 16%), Biology (14%), Geography (13%), Chemistry (12%), and Turkish Language and Literature (12%).

Netbook students estimated that in school they used their netbooks most often in Mathematics/Geometry (41%), by far the most reported subject area, followed by History (30%), Modern Foreign Languages (27%), Design and Technology (23%), Turkish Language and Literature (17%), Biology (15%), Music (14%), Geography (13%), Visual Arts (13%), Social Studies (11%) and Physics (10%).

Between March and May 2011, half of the Turkish netbook teachers said that they used netbooks in more than 50% of their teaching time, 41% of teachers said between 11% -50% of their teaching time and only 10% answered less or that they could not estimate.

2.2 How were netbook classes planned and run?

Most Turkish netbook teachers used the notebook that they were given by the pilot organisers to prepare school activities (92%). They mostly prepared their lessons alone at home (86%), whereas 39% also said that while at home, they used online tools to collaborate and prepare activities with other teachers. 73% also prepared lessons and homework alone in school, however, 61% said that they collaborated with other netbook teachers in their own school and 51% said they worked with colleagues who were not part of the netbook team. Moreover, 25% of Turkish netbook teachers said that they worked with netbook teachers in other schools in Turkey. Turkish teachers collaborated more with other teachers when preparing their teaching activities (average of collaborative activities: 44%, pilot average: 29%, Table 10).

For in-class activities, Turkish netbook teachers mostly planned to alternate collaborative student work (74%) and individual work (67%). They also planned for individual student work to be done at home (69%), as well as for collaborative student work to be done at home over the Internet (26%).
Teachers were asked how they alternated different aspects of teaching during their actual netbooks lessons according to the following paradigms: frontal teaching, e.g. the teacher demonstrates and explains to the whole class or a student gives a presentation for the whole class; individual processes, which include teacher support and explanations to individual students, or students working individually at their own pace or at the same pace; and collaborative processes such as students working in groups. Turkish netbook teachers said that they alternated frontal style teaching (89%), collaborative (86%) and individual processes (85%) every lesson or sometimes. On average, 86% of Turkish netbook teachers reported alternating between different teaching aspects either every lesson or sometimes (pilot average 81%, Table 7).

Regarding the school subjects reported in section 2.1, 83% of teachers estimated that during their netbook lessons they alternated between individual and collaborative student work whilst using the Internet, whereas about half of the teachers also opted for off-line activities. Moreover, 86% said that they used a projector at least 1-3 times a week (4% said never/not available), 40% said that they used an interactive whiteboard (53% said never/not available) and 29% said that they used use a virtual learning environment or a learning management system with netbooks in that same frequency of time (57% said never/not available).

As for Turkish netbook students working on the school subjects reported in section 2.1 while in school, 66% reported working individually online, 48% working collaboratively online and around one in seven reported off-line work. The most popular tools used with these school subjects were educational school portals or learning platforms (49%) and collaboration tools such as blogs, social networking sites, wikis and bookmarking (38%). These were followed by subject-specific educational software, digital resources and communications tools, and digital resources, e.g. online quizzes and tests, animations, videos (all 29%). (Table 6, see “in school”)

**Chart 26. For what activities did Turkish netbook students use the netbook in and out of school?**
On average 45% of different activities were reported by Turkish students while using the netbook in school (pilot average 36%). These activities are divided into five categories: looking up things on the Internet (e.g. use search engines and online reference sources), school related activities (e.g. homework, contacting teachers, checking the school website), communicating (e.g. with relatives and family friends, online forums and chats, and social networking), creating (e.g. creating websites/writing blogs, editing/creating photos and videos) and leisure (e.g. music, games, videos). In school, the most popular were school-related activities (81%), looking things up on the Internet and communication (both 70%). 51% reported creating, e.g. using multimedia to edit/create photos and videos, and 30% reported leisure-related activities (see Chart 26, Table 2). Aside from in school activities with the netbook, Chart 26 also shows out of school activities as well as general activities that students have reported doing both in and out of school.

41% of Turkish students kept their netbooks with them at all times when in school, 24% said this was because it was practical and 18% said that it was because the school did not have any other place to store the netbook. 19% said that netbooks are stored in a cupboard in school and 12% leave them in a locked classroom.

2.3 How did 1:1 pedagogical netbook scenarios support teachers?

To help and support the initiating and running of netbook classes, Netbook Pilot teachers were offered examples of 1:1 pedagogical netbook scenarios created by European Schoolnet and other pilot teachers. 86% of Turkish teachers said that they had read pedagogical netbook scenarios and 58% had created their own 1:1 scenarios (includes answers: rarely, sometimes, often, all the time). 13% of Turkish teachers had never read any 1:1 scenarios.

Half of the Turkish netbook teachers agreed that using scenarios helped their teaching with netbooks and 49% said that 1:1 scenarios increased their understanding of different ways of working with netbooks. About a third had not formed an opinion on the issue.

Overall, the majority of Turkish teachers seemed fairly confident about their use of netbooks in teaching activities: 61% agreed with all the statements related to their ability to deal with netbooks in class (pilot average 67%). More specifically, 68% said that they now understood the potential benefits of netbooks in teaching and 60% knew how to integrate netbooks into their teaching effectively. Three-quarters of the teachers knew which content to use and around 58% could find enough content and learning resources in their national language. 57% knew which software to use on netbooks and 54% said that they could find enough good online material to be used with students in general.

Many Turkish netbook teachers estimated that learning how to integrate netbooks into their teaching came with some cost; 86% said that they needed to prepare classes more carefully when using netbooks. Two-thirds said that more classroom management was needed with netbooks, whereas only 45% said that using netbooks had increased their workload (pilot average 54%). Many also estimated that they did not have enough time to prepare for specific netbook activities (72%), so thankfully, more than half reported that they had received support and examples from other netbook colleagues (55%).
3 Students' use of netbooks

This section first looks at students’ general use of the netbook that they received for the Acer-European Schoolnet Educational Netbook Pilot. It elaborates on the aspects of the evaluation framework such as educational use vs. leisure use and individual vs. social processes. Aspects regarding how netbooks facilitate interactions within the family are also discussed.

3.1 How were netbooks used outside school hours?

82% of Turkish netbook students said that they brought their netbook home almost every day (pilot average 73%). Only 5% said that they never brought their netbook home. Most Turkish students brought their netbook home in their school bag with a cover (52%), 42% had a separate computer bag, whereas 4% carried their netbook in the school bag without a cover (Table 5 a, c).

Turkish students were asked where they used their netbooks outside school hours. Aside from using them at home (95%), netbook students reported multiple places: 41% said that they also used them in school for “after school activities”; 19% said that they used them at a friend’s home (only 6% of Turkish parents reported that their children used them in a friend’s home); 13% said that they also took the netbooks with them on holiday. Moreover, 15% said that they used them in public places such as libraries, and 8% on the way home, e.g. on the school bus. (Chart 27)

**Chart 27.** Where did Turkish students use netbooks? Students’ and parents’ opinions

![Chart showing where Turkish students used netbooks](chart.png)
Turkish students said that when they took their netbook home from school, they used it at their own desk (78%), in the living room (42%), in the bedroom or in a dedicated computer room (both 41%), in the kitchen (9%) and in the dining room (8%) (Table 5 b). Moreover, the netbook students reported that they mostly used it on their own (91%), with parents or an adult around (16%) and with friends and other children around (8%). These percentages match rather closely with what parents reported about their children’s use of netbooks at home. Only 2% of the parents said that they had used the child’s netbook alone without their child being present.

3.2 What formal and informal learning occurred out of school?

When comparing the activities for which netbook students used their netbook in and out of school, it can be observed that Turkish students used their netbooks more out of school (61%) than in school (45%) (see Chart 26, “average of all activities”). 85% said they used the netbook most often for studying, e.g. doing their homework and connecting to the school’s website; 10% reported that they used it most often for social networking tools and 5% for playing and entertainment. The netbooks were reported to be least used for playing and entertainment (51%), social networking sites (32%) and studying (17%). The most popular activities among Turkish students were in the categories of school-related activities (71%), looking up things on the Internet (69%), creating and leisure (both 55%) (Chart 26, “out of school”).

Out of school, Turkish students reported using their netbook with the same subjects as in school (see section 2.1). Turkish students reported that outside of school hours, they used fewer tools in studying the school subjects with their netbooks than in school (14% difference). The same tools top the chart (i.e. educational school portals or learning platforms, collaboration tools, subject-specific educational software, digital resources and communication tools. Interestingly, Turkish netbook students said that they used communication tools more outside school hours than in school (10% difference on average) (Table 6, see “out of school”). Regarding working individually or collaboratively outside school hours; 85% of Turkish students said that they worked individually whilst using the Internet and a third said that they worked together with other students whilst using the Internet.

To gauge the informal learning opportunities brought by netbook use outside school hours, the netbook students were asked about activities not related to school work and or homework. Turkish students reported many different usages: looking for extra information on topics taught at school (60%), following current events such as news and weather (57%), looking for information on topics that are not taught at school but that are of interest to them, e.g. sport, celebrities, TV shows (40%), developing skills related to their hobbies, e.g. learning to play the guitar watching YouTube videos or getting practical advice from a forum about a question related to their hobby (27%) and looking for information in their area of interest in other languages than their mother tongue (25%). On average, Turkish students reported 36% of these activities (pilot average 32%).

3.3 How did netbooks stimulate students’ interaction within their families?

40% of Turkish netbook students said that since receiving their netbook, they had spoken with their parents about their netbook use at least once a week. Turkish netbook parents’ perception is about the same, with 43% reporting having discussed it with their children at least once a week. 32% of students
discussed netbook use almost daily with their parents, whereas 3% said never and 3% “I don’t know”. For the remaining 24%, netbooks were discussed at least once since the start of the pilot.

Turkish netbook parents were asked about which kind of activities have used the netbook for with their children: 89% said that they had used it for educational school related activities, followed by 44% for search engines and online reference sites, 40% for checking the school website for announcements and 34% for contacting the school or teachers about issues related to school activities. The Turkish parents’ average on this set of questions was 24% (pilot average: 23%).

Furthermore, netbook students said that they helped adults in their family to use the Internet; 53% said they had helped them to use e-mail, 52% helped them to find information and websites they needed, 47% helped to upload photos, 38% to start an Internet browser and 36% to fix a non-working Internet connection. About a third helped them to set up an account and profile in a social network, and to use chat or other communication tools. 14% said that they had never helped any of the adults of their family with Internet related matters. On average, students reported 34% of activities in helping adults in their family (pilot average 32%, Table 4).

3.4 How did parents perceive their child’s netbook usage?

Turkish netbook parents were asked to estimate how much time their children used the netbook for education (e.g. homework, connecting to the school website). 44% estimated their child’s use of the netbook for education as 1-3 hours per average week, whereas 20% estimated it as less than 1 hour per week. On the other hand, 14% of parents thought that their child used the netbook for education for 3-5 hours per week and 15% even more than that. Only 3% of parents said that they did not have any idea. Moreover, a third of Turkish parents estimated that their child used the netbook for playing and entertainment for less than one hour per week, whereas 16% estimated it as between 1-3 hours (39% estimated not at all). As for social networking sites, 29% estimated less than 1 hour per week and 16% between 1-3 hours (40% estimated not at all).

When asked whether they knew what their children were doing when using the netbook or other ICT devices, 73% of Turkish parents said that they felt they knew enough about their child’s computer use. 15%, however, said that they knew one or two things, but that there were lots of things that they were not aware about. 9% said that they would like to know more and 3% said they did not know anything about it. These are very similar figures to the other pilot countries.

As for establishing rules about the child’s use of the netbook and other ICT devices outside of school, 49% of Turkish parents said that they had clear agreements with their children on netbook usage for both school and leisure. 27% of Turkish parents had not agreed any terms, saying it was not necessary as they trusted their child. A further 13% said that they had agreed on some terms, but that these were not very clear and 4% said that they had not thought of making such agreements. 5% did not know about the issue (Table 4 a, b).
This section discusses the views of teachers, students and parents on the impact of netbooks. It first focuses on the atmosphere in class and how netbooks affect communication patterns among students, parents and teachers, and then looks at the possible impact on a variety of learning aspects.

**4.1 How did teachers estimate the impact of netbooks?**

The majority of Turkish netbook teachers thought that netbooks made school work more enjoyable (83%) and that netbooks in class made students more motivated in learning and in school in general (80%). Moreover, 68% said that the netbooks improved the atmosphere in class, e.g. pupils were more concentrated and there was less disruption in class. 87% of Turkish netbook teachers estimated that netbooks had a positive impact on pupil-pupil collaboration and 86% on teacher-pupil collaboration. Moreover, Turkish teachers felt that netbooks had also helped teacher-parent communication (60%), whereas 30% had not formed an opinion on this issue. The Turkish average on this set of questions was 78% (pilot average 66%, Table 11).

Turkish netbook teachers were among the most positive in their observations on the impact of netbooks on learning aspects; 79% observed that their students were more independent in their learning, e.g. students went over their work again and found out more about topics of interest. Three-quarters agreed that students were more likely to revise and edit their work thanks to netbooks and that students understood what they were learning more easily. 74% agreed that students tried harder in what they were learning. In general, teachers agreed an average of 76% on learning aspects (pilot average 56%, Table 11).

The netbook teachers were also asked about the possibility that netbooks could offer a more individualised learning track for students. Again, the Turkish netbook teachers were among the most positive compared to other countries. 82% of Turkish teachers estimated that netbooks allowed students to learn at their own pace and in their own time, and about three-quarters agreed that netbooks could help students with good and average grades to excel further in their learning. Moreover, 70% agreed that netbooks offered opportunities for students at risk of dropping-out and 69% agreed that they could help students with special needs to participate more in lessons. The Turkish average on this set of questions was 74% (pilot average 62%, Table 11).

In Turkey, 69% of netbook teachers estimated that their students took more responsibility for their work and completion of tasks, which was much higher than in other countries (average 32%). Furthermore, 35% said that their students took more responsibility for their equipment including netbooks. 42% said that they saw some change in students’ sense of responsibility towards their work, but estimated that students still needed to be reminded of deadlines. Only 18% of Turkish teachers thought that netbooks had brought no change in this area.
4.2 How did students estimate the impact of netbooks?

Turkish students, like their teachers, reported positively on the impact of netbooks: on average, 73% agreed with all the statements regarding the impact of netbooks, compared to the pilot average of 54%. 84% of Turkish netbook students said that netbooks made school work more enjoyable and 74% agreed that netbooks had made them more motivated in learning and in school in general. 77% of students estimated that netbooks enabled them to work better with other students on tasks and 67% said that the netbooks had made them more motivated in learning and in school in general. 77% of students estimated that netbooks made school work more enjoyable and 74% agreed that netbooks helped them concentrate more on learning. Two-thirds also felt more confident about taking tests and evaluations. Turkish netbook students were very positive in their observations on the impact of netbooks on learning aspects. 81% agreed that they were more likely to revise or edit their work, 80% said that they tried harder in what they were learning and 79% thought they could learn better at their own pace and in their own time. Moreover, 78% said that netbooks helped them remember what they had learnt more easily, that they felt more independent in their learning and that netbooks helped them understand what they are learning more easily and 74% said that netbooks helped them concentrate more on learning. Two-thirds also felt more confident about taking tests and evaluations. Turkish netbook students’ average on these aspects was 76% (pilot average 52%).

Chart 28. Since using the netbook, have you become better in the following tasks?

In Turkey, 87% of netbook students estimated that their computer and ICT skills had improved and 71% said that the netbook helped them to be more organised. In the specific question, “Since you have been using the netbook, do you think you have become better in the following tasks?” Turkish students estimated similar progress to students in other countries (Turkish average 35%, pilot average 37%). Up-skilling took place in the areas of “general Internet tasks” (47%), “high level ICT-tasks” (32%) and “e-Safety” (34%) (Chart 28).

In the category of “general Internet task”, an improvement in the following areas was reported: emailing a file to someone/another student or teacher (75%), installing software on a computer (48%), identifying sources of reliable information (46%), filing electronic documents in computer folders and subfolders, (45%). In “high level tasks”, the following was reported: creating a multimedia presentation (47%), editing digital photographs or other graphic images (45%), using spreadsheet programmes (44%), producing text using a word processing programme (31%), and using a spreadsheet to plot a graph (30%). As for tasks related to “e-Safety”, the following was reported: using the Internet safely to respect privacy of others (40%), using the information found on Internet without plagiarising (38%), using the Internet safely...
to protect their privacy and to respect the online reputation of others (both 37%) and to protect their own online reputation (33%).

Around a quarter of Turkish students reported gaining skills in the following: editing online text containing Internet links and images (28%), participating in a discussion forum on the Internet, protecting themselves against spam (both 27%), using the Internet safely to protect themselves against bullying (24%), editing a questionnaire online (23%), creating blogs or web sites and maintaining them (22%) and creating a database (14%).

When asked about their attitudes toward the use of ICT devices in learning, 78% of Turkish students’ attitudes fell in the category of making learning fun and having an interest in the use for ICT per se. On the other hand, 76% also agreed with the statements regarding their instrumental approach for future work and studies. For instance 81% said that they needed it for their studies later on (pilot average on this issue was 51%).

4.3 How did parents estimate the impact on general attitudes and on learning?

In general, Turkish netbook parents, like teachers and students, were positive about the impact of netbooks. 63% of Turkish parents estimated that netbooks had brought better opportunities for them to be involved in their child’s education. 64% estimated that netbooks had a positive impact on teacher-student-parent communications, 77% on teacher-student collaboration and 73% on student-student collaboration.

76% of Turkish parents agreed that netbooks had a positive impact on their child’s engagement and motivation in school and learning in general and 59% agreed that the netbook also helped performance in school subjects. 72% said that the use of netbooks in school and outside of school had a positive impact on how their child could learn at his/her own pace and 65% agreed that it had an impact on their child’s informal remediation. The average score of Turkish netbook parents on these issues was 67% (pilot average 56%).

84% of Turkish parents agreed that using the netbook had improved their child’s ICT skills. 72% agreed that there was a positive impact on their information handling skills (e.g. ability to critically evaluate the validity of information and its source), 71% agreed that netbook could have a positive impact on social skills such as teamwork and 60% agreed the same for personal skills such as taking initiative. About half agreed that netbooks also had a positive impact on intellectual skills, e.g. problem solving, and on spatial and motor skills, e.g. speed of reflexes (56%). For the above-mentioned skills, an average of 67% of Turkish parents estimated that netbooks had a “positive impact” (pilot average was 62%), whereas 22% estimated “no impact” and only 4% that they had a negative impact.

In general, 80% of Turkish parents’ attitudes towards the use of ICT devices in learning fall under the category of instrumental approach for future work and studies, e.g. to acquire technical and digital skills (84%), to secure a place in the job market (76%) and because ICT devices offer more learning opportunities outside of school (78%). On the other hand, 85% of the parents’ statements regarding the use of ICT devices in learning were in the category of making learning more fun (86%) and easier (85%).
5 Attitudes, expectations and concerns regarding netbooks

This section discusses the general attitudes of students, teachers and parents towards the Acer-European Schoolnet Educational Netbook Pilot. Their opinions on the suitability of netbooks in an educational context are discussed, and a number of concerns are outlined. The problems that hindered teachers’ use of netbooks during the pilot are also discussed.

5.1 What were the attitudes of students, parents and teachers towards the Acer-European Schoolnet Educational Netbook Pilot?

As part of the final evaluation students, parents and teachers were asked about their attitude towards the Acer-European Schoolnet Educational Netbook Pilot when they first heard about it. 82% of Turkish netbook students said that they were enthusiastic when they first heard that they would receive a netbook to use and 71% felt special and proud to be part of the pilot. Two-thirds of Turkish teachers also said that they were enthusiastic about the project and 57% of them said they felt special and proud to be part of it. On the other hand, 29% of teachers said that they were hesitant about the pilot, as were 21% of parents and 17% of students, slightly higher than in other countries. A quarter of the netbook students thought that it might cause them extra work and 10% of teachers thought so.

56% of Turkish parents said that they were interested in the Netbook Pilot and 54% said that they trusted the decision of the teachers and school heads to run the pilot. 10% of the parents said they were fully convinced by the project and 74% would recommend it to a friend’s child (pilot average 80%). About two-thirds of parents agreed with the statements “schools should consider more issues before starting such a project” and “schools should be more careful in dealing with commercial providers” (pilot averages for these two statements were 39% and 35% respectively).

In terms of Turkish netbook teachers’ and parents’ attitudes towards technology, 52% of teachers and 45% of parents said that they agreed with the statement “When it comes to technology, the simpler the
better”. On average, Turkish teachers were slightly more satisfied with the netbook’s features and suitability for education (75%) than students (73%) and parents (72%). As a general trend, all three groups agreed that the weight (around 90%) and the size of the netbook, as well as its keyboard and screen (around 83%) were suitable for use by students. More than three-quarters of all the groups were satisfied with the quality of the screen and the track pad, although students were slightly less happy with the battery life (66%) than teachers and parents. The teachers were most concerned about the robustness of the netbooks for children’s usage and its speed (50%), the latter was also the point of least satisfaction for netbook students (43%) (Chart 29).

**Chart 29. Different perceptions on the netbooks in Turkey**

5.2 What concerns and problems did students and parents encounter?

The netbook evaluation also sought to identify more detailed problems and worries as stated by students and parents. Many Turkish students were afraid of losing their netbook (69%) or that someone would steal it (62%). Damaging the netbook was also a concern for students in Turkey (63%), while only 11% said that they were affected by a broken netbook (pilot average 14%). Other concerns were: technical problems (58%), downloading inappropriate content or software applications, and Internet safety issues (e.g. online bullying, harassment) (both 40%). 34% said that they did not feel safe going home from school with the netbook. Turkish students reported an average of 48% for concerns and worries (pilot average was 34%).

Turkish students reported an average of 19% of problems (pilot average 18%). 42% of students said that their eyes ached from looking at the screen for too long, while 83% of teachers said that students
had complained about this aspect sometimes or often. Moreover, 21% said that they could not follow the lesson if they forgot the netbook home or if it was broken. This is much less than what teachers reported students saying: 75% said that students had complained about the issue at least occasionally.

Turkish netbook teachers were also asked to estimate whether their students had complained about a number of issues. 80% said that students complained that they had more homework than before due to technical problems slowing down the class (pilot average 53%). Similarly, 80% said that their students complained that using multiple resources, for example conventional worksheets and Internet based resources, was more difficult than using one text book (pilot average 55%). Finally, 64% of teachers said that students complained that writing with the keyboard was more complicated than by hand (includes answers rarely, sometimes, often, all the time). In this category of statements, 74% of Turkish teachers estimated that their students had reported problems (pilot average 45%) which may indicate difficulties taking up new practices.

71% of Turkish parents said they had not experienced any of the problems listed, such as dropping the netbook, rough use, damage through liquids or bullying by other pupils. However, 17% of parents reported jealousy from other pupils who had not received netbooks (pilot average 10%).

5.3 What obstacles did teachers encounter?

During the Netbook Pilot, 73% of Turkish teachers reported having encountered technical problems with netbooks, of any kind, that meant it was necessary for them to suspend the use of netbooks totally (less than in the other countries). 40% reported having such problems often and sometimes, whereas only 4% reported this all the time. About half said that they had technical support available when they needed it.

In Turkey, 52% of teachers said that they had some netbooks that became unusable due to any sort of damage or technical failure; 44% of teachers had 1-15% of netbooks unusable in class at some point in time. More than half did not think that such unavailability affected their teaching at all (55%), whereas a third said it bothered them to a small extent. 12% deemed that it negatively affected their teaching (includes answers: to a moderate, great and very great extent).

Netbook problems can be roughly categorised into five different types: problems related to the netbook itself (e.g. hardware issues, problems with software or with connecting to the internet); problems caused by the school environment (e.g. firewall issues, incompatibility between netbooks and the school technical infrastructure, no suitable places to use netbooks); problems connecting to the Internet (this can be related to other categories); user-related issues (e.g. uncharged batteries, problems with trackpad) and other behavioural issues (e.g. distracted by games). Turkish teachers mostly encountered problems due to Internet connectivity (65%), constraints of the school environment (60%), behavioural issues (50%), problems related to the netbook (38%), and other user-related issues (48%). (Table 8)

In the category of problems with an Internet connection, 75% were due to problems connecting to the internet with student netbooks and 52% with teachers’ notebooks. The constraints of the school environment included insufficient Internet access, e.g. Internet not available in a specific classroom (66%), school filters and firewalls (59%) as well as incompatibility with the existing ICT infrastructure (54%). 43% reported having some hardware problems. Behavioural problems in Turkey included pupils spending too
much time on computers in general (73%) and eSafety issues that affect the planning and implementation of teaching (70%). Finally, user-related issues included problems using the track pad (74%) and uncharged netbook batteries (38%).

Turkish netbook teachers used a variety of support mechanisms if they needed help with netbooks. An IT support person or technology coordinator was most often contacted and able to help (59%), whereas some teachers used an online help desk, community or website (55%), another teacher (52%) or a student in class (45%) when they needed help. Pilot organisers and the Netbook Pilot’s website were used and deemed helpful by 37% of teachers, whereas about a third were helped by an expert, friend or colleague outside school.

Netbook students, on the other hand, most often asked for and received help from their teacher (70%), a fellow student (59%), or a technology support person in school (51%), but also from members of their family (49%) or another adult outside school (41%).
6 Supportive and empowering netbook school environments

This section first looks into the schools as a unit, observing how the netbook schools’ priorities and strategies supported the use of ICT, and especially the use of netbooks. The evaluation focused on understanding how the teaching staff was involved in decision-making regarding the integration of netbooks into teaching, support structures set up by the school to help teachers’ collaboration and support provided in terms of professional development opportunities.

6.1 How did the school’s vision empower netbook teachers?

When schools applied for the Netbook Pilot, the schools’ ICT vision was emphasised to ensure that the netbooks were not a separate experiment outside the school’s ICT vision. Three-quarters of the Turkish netbook teachers agreed that their school’s ICT vision supported the use of netbooks. Regarding the school’s spatial organisation (e.g. classroom size and furniture), 72% agreed that it was suitable for the use of netbooks and 52% felt the same in terms of the time organisation (e.g. fixed lessons times).

70% of Turkish netbook teachers said that their school provided enough technical support for netbooks, 67% said the same for institutional support and 63% for pedagogical support for the use of netbooks. 47% of teachers agreed that their curriculum was clear and easy to follow, making the use of netbooks easy in teaching, and that they had the time and flexibility to work on netbook projects related to the curriculum. The average score for the Turkish school environment in terms of supporting and empowering teachers was 61%, slightly above the pilot average (57%).

56% of teachers said that their school head actively encouraged them to pursue professional development activities that helped to integrate netbooks into the curriculum. The teachers were also asked whether such professional development regarding netbooks activities had impacted their development as a teacher during the previous 18 months: participating in informal dialogue with teacher colleagues to improve their teaching (76%), carrying out research on a professional topic of interest (72%), and taking part in workshops or courses (63%) were the activities which were said to have had a large, moderate and small impact in this respect.

6.2 How did schools support the exchange of practices between teachers?

61% of Turkish netbook teachers said that, since the beginning of the Netbook Pilot, they had attended staff meetings to discuss their school’s vision and mission on netbooks, 71% said they had discussed and made decisions on the selection of suitable teaching resources for netbooks (e.g., textbooks, exercise books) and 70% said that they had taken part in the development of the school curriculum to make it more suitable for netbooks (includes answers: all the time, often and sometimes).

70% of Turkish netbook teachers had discussed and coordinated homework practices across subjects, 66% exchanged teaching materials suitable for netbooks with colleagues, 58% observed other

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teachers’ classes and provided feedback, and 54% taught jointly as a netbook team in the same class. Additionally, 61% engaged in joint activities across different classes and age groups, e.g. school projects or eTwinning. In Turkey, these practices were much more common than in other pilot countries, with an average of 64% (pilot average 50%).

Netbook teachers in Turkey also communicated with each other in more ways than other netbook teachers; 75% engaged in informal discussions in school about netbooks, whereas 75% used e-mail and 69% held organised meetings in school to talk and plan netbook use. 54% had attended a face-to-face meeting organised by the Netbook Pilot or pedagogical coordinator, whereas around 40% said they had used online platforms, chats and online meetings tools to communicate with other teachers about netbooks.
Introducing Netbook Pedagogies in Schools – **Turkey**

What did teachers gain from the Acer-European Schoolnet Educational Netbook Pilot?

One of the main rewards that Turkish teachers reported in regards to participating in the Netbook Pilot were higher student motivation (83%) and more training opportunities in new ways to teach (44%). For Turkish teachers, higher test scores for students were also motivating (20%), whereas 14% reported changes in the work responsibility that made the job more attractive.

Turkish netbook teachers were positive about the Netbook Project, with 72% of teachers who said that the experience had had a positive impact on different aspects of their professional development (pilot average 71%). Even though 74% of Turkish netbook teachers estimated that they still needed to learn more about how to integrate ICT into teaching and learning, 77% said that they would like to continue using netbooks in the following academic year. Experiences gained from the pilot with regards to professional development were numerous, and these were positively confirmed by Turkish teachers (average 72%, pilot average 71%). Three-quarters said that they were now better able to evaluate when ICT is needed and when it is not, that they had a better understanding of how to integrate ICT into their subject and that they used a greater variety of resources (online and offline) during their classes. About two-thirds said that they alternated a wider range of activities with and without ICT in their lesson, were more prepared to work collaboratively with other teachers in their school and were prepared to plan and coordinate cross-curricular teaching (the two latter figures are the highest of all the pilot countries). Finally, 81% said that they would recommend the use of netbooks in school to their fellow teachers!
1 The Pilot Setup: United Kingdom

Pilot schools

- 17 schools, including 41 classes, a number of schools for the Pilot were selected in collaboration with Becta, British Council and Acer.
- The number of netbook classes varied from one to four: six schools had 4 netbook classes; two schools had 3 classes; 2 had 2 classes and 5 schools had 1 netbook class.
- Ten of the schools had participated in the Pre-pilot during the previous semester (January 2010 – July 2010).
- ICT level of the Pilot according to teachers’ estimation: 50% have an average level and 50% have an advanced level.

Questionnaire

- At least one teacher replied to the questionnaire from 14 schools (n=52), 3 schools abstained. The UK sample is not representative of the UK netbook teachers.
  - 39 were teachers; 2 ICT coordinators; 11 other
  - 32 teachers had been part of the pre-pilot
  - 56% had been teaching for more than 10 years
  - ICT skills: 21% self-evaluate as having beginner or moderate ICT skills, 37% good ICT skills and 42% experienced or confident users
- At least one student replied to the questionnaire in 14 schools (n=340), 3 schools abstained
  - 53% boys, 37% girls
  - 11 years olds=5%, 12 years olds=20%, 13 years olds=33%, 14 years olds=17%; 15 years olds=13%, 16 years olds=8%, older=4%
  - ICT skills: 26% self-evaluate as having beginner or moderate ICT skills, 48% good ICT skills and 24% experienced users (2% blank)
  - 100% had access to a PC or laptop at home (apart from the netbook received in the pilot)
- Parents’ questionnaire was replied by 70 individuals. The UK sample is not representative of the UK netbook parents.
  - Roles: 70% mother, 23% father, 7% other
  - ICT skills: 38% self-evaluate as having beginner or moderate ICT skills, 37% good ICT skills, 21% experienced or confident users and 4% non-user

Events

- Pre-pilot on-line launch: 1 March, 2010
- Pilot on-line launch: 18 November, 2011
- Event at the BETT-show: 13 January, 2011
This section highlights the emerging trends on netbook use in an educational context. It focuses on the aspects of the evaluation framework: how learners and teachers use netbooks in various educational contexts, e.g. in and out of school; individually and collaboratively; in educational use and leisure use. Firstly, the subjects in which netbooks were used are reported, followed by how teachers planned and used netbooks in class. Finally, reports are given on support from 1:1 pedagogical netbook scenarios and teachers’ confidence in integrating netbooks. 1:1 pedagogical scenarios help teachers to “orchestrate” the learning situation with netbooks, focusing on the interplay between different types of activities, and between individual and social processes.

2.1 In which subjects were netbooks used and how much?

UK netbook teachers indicated 21 school subjects in which they taught mostly with netbooks. The most common subjects were: Geography (23%), Physics (21%) and Chemistry and Biology (19%), followed by Mathematics/Geometry (14%), History (14%) and Informatics/ICT (12%).

Netbook students estimated that in school they used their netbooks most in Geography (50%), followed by History (34%), Mathematics/Geometry (23%), Biology (19%), Modern Foreign Languages (18%), Citizenship (15%) and Physics (13%).

Between March and May 2011, 44% of the UK netbook teachers used netbooks between 11% and 50% of their teaching time, whilst 27% said that they used them more than 50% of the time, and 20% said between 1-10%. 9% answered less or that they could not estimate how often they used it.

2.2 How were netbook classes planned and run?

Most UK netbook teachers used the notebook that they were given by the pilot organisers to prepare school activities (81%). UK netbook teachers mostly prepared their lessons individually, either at home (94%) or in school (87%). 26% also prepared lessons together with other teachers in their school, and 13% said that they collaborated with other teachers at home online. 4% prepared activities together with other netbook teachers in other schools in their country. On average, 19% of UK netbook teachers said that they collaborated with other teachers when preparing their teaching activities (pilot average 29%) (Table 10).

For in-class activities, UK netbook teachers mostly planned for individual work (75%), focusing on activities both on- and off-line. They also planned for individual student work to be carried out done at home (47%). About three-quarters of the UK netbook teachers said that they planned for collaborative student work in class and 20% said that they planned for collaborative student work at home.

Teachers were asked how they alternated different aspects of teaching during their actual netbooks lessons according to the following paradigms: frontal teaching, e.g. the teacher demonstrates and
explains to the whole class or a student gives a presentation for the whole class; individual processes, which include teacher support and explanations to individual students, or students working individually at their own pace or at the same pace; and collaborative processes such as students working in groups. UK teachers said that they alternated frontal style teaching (94%) with individual and collaborative processes (both 90%) every lesson or sometimes. On average, 92% of UK netbook teachers reported alternating between different teaching aspects either in every lesson or sometimes (pilot average 81%, Table 7).

Regarding the school subjects reported in section 2.1, UK teachers reported the following alternations: 82% opted for individual student work whilst using the Internet and 67% without the Internet. Around 80% of UK teachers also said that their students worked together with other students either offline or online. Moreover, 72% said that they used an interactive whiteboard with netbooks at least 1-3 times a week (12% said never/not available). Similarly, 71% of them said that they used a projector with netbooks at least 1-3 times a week (16% said never/not available) and 44% of UK teachers, more than other countries, said that they used a virtual learning environment or a learning management system with netbooks in that same frequency of time (48% said never/not available).

As for UK netbook students working on the school subjects reported in section 2.1 whilst in school, 71% reported working individually online, 62% working collaboratively online and around 30% reported off-line work. The most popular tools used with these school subjects were office tools (47%), educational school portals or learning platforms (44%), subject-specific educational software (31%), digital resources (27%) and collaboration tools such as blogs, social networking sites, wikis and bookmarking (25%). (Table 6, see "in school")

**Chart 30.** For what activities did UK netbook students use the netbook in and out of school?
On average 39% of different activities were reported by UK students while using the netbook in school of UK students reported using their netbook for different activities in school (pilot average 36%). These activities are divided into five categories: looking up things on the Internet (e.g. use search engines and online reference sources), school related activities (e.g. homework, contacting teachers, checking the school website), communicating (e.g. with relatives and family friends, online forums and chats, and social networking), creating (e.g. creating websites/writing blogs, editing/creating photos and videos) and leisure (e.g. music, games, videos). In the UK netbook schools, the most popular activities were looking things up on the Internet (66%) and school-related activities (58%). 49% reported communicating, 45% reported creating, e.g. using multimedia to edit/create photos and videos, and 28% reported leisure-related activities (Chart 30, Table 2). Aside from in-school activities with the netbook, Chart 30 also shows out of school activities that students have reported doing both in and out of school.

Most UK students said that in school, they kept their netbook with them at all times, because it was practical (23%) and another 21% said that this was because the school did not have any other place to store the netbook. 14% of UK students stored the netbook in a cupboard in the teachers’ room.

2.3 How did 1:1 pedagogical netbook scenarios support teachers?

To help and support the initiating and running of netbook classes, Netbook Pilot teachers were offered examples of 1:1 pedagogical netbook scenarios created by European Schoolnet and other pilot teachers. 34% of UK teachers, the lowest percentage of all the countries, said that they had read pedagogical netbook scenarios and 27% had created their own 1:1 scenarios (includes answers: rarely, sometimes, often, all the time). 66% had never read any 1:1 scenarios. 13% of teachers agreed that using scenarios has increased their understanding of different ways of working with netbooks. A very large percentage of teachers had not formed an opinion on the issue (79% neither agreed nor disagreed).

Overall, UK netbook teachers seemed rather confident about their use of netbooks in teaching activities, 68% of them agreed with all the statements related to their ability to deal with netbooks in class (pilot average 67%). More specifically, 78% said that they knew how to integrate netbooks into their teaching effectively. Three out of four said that they knew which content and materials to use with netbooks, and around the same percentage said that they understood the potential benefits of netbooks in teaching. Moreover, 67% also said that they were able to find enough good online material to be used with the pupils and around the same percentage knew which software to use on netbooks. Half of the teachers said that they could find enough content and learning resources in their national language (52%).

Some UK netbook teachers estimated that learning how to integrate netbooks into their teaching came with some cost; 66% needed to prepare the classes more carefully when the use of netbook was involved and 54% said that more classroom management was needed with netbooks. However, only 22% said that that using netbooks had increased their workload (the lowest percentage among the countries). 32% of UK teachers said that they had enough time to prepare for specific netbook activities, and 46% received support and examples from other colleagues/teachers.
3 Students’ use of netbooks

This section first looks at students’ general use of the netbook that they received for the Acer-European Schoolnet Educational Netbook Pilot. It elaborates on the aspects of the evaluation framework such as educational use vs. leisure use and individual vs. social processes. Aspects regarding how netbooks facilitate interactions within the family are also discussed.

3.1 How were netbooks used outside school hours?

59% of UK netbook students said that they brought their netbook home almost every day, whereas 29% said never took it home. UK students were among those who brought home least (pilot average 17%). Most UK students brought their netbook home in their school bag with a cover (71%) whereas 20% carried it in the school bag without a cover. 6% said that they carried it in their hands. (Table 5 a, c)

Chart 31. Where did UK students use netbooks? Students’ and parents’ opinions

UK netbook students were asked where they used their netbooks outside the school hours. Aside from using them at home (76%), netbook students reported multiple places (Chart 31). 30% said that they used them at a friend’s home (only 9% of UK parents reported that their children used them at a friend’s home) and about one-quarter said that they also used them in school for “after school activities”. Moreover, 11% said that they also took the netbooks with them on holiday and 7% said they used them in public places such as libraries.
UK students said that when they take their netbook home from school, they mostly used it in their own bedroom (72%), in the living room (49%), at their own desk (34%), in the dining room or kitchen (both 18%), and in a dedicated computer room (13%) (Table 5 b). Moreover, netbook students reported that they mostly used it on their own (87%), with friends and other children around (23%) or with their parents or an adult around (22%). These percentages match rather closely with what parents reported except for a few points: only 8% of parents reported their child using the netbook with other children around, against 23% of students’ responses. Only 2% of the parents said that they had used the child’s netbook alone without their child being present.

3.2 What formal and informal learning occurred out of school?

When comparing the activities for which netbook students used their netbook in and out of school, it can be observed that UK students used their netbooks slightly more out of school (44%) than in school (39%) (Chart 30, “average of all activities”). 65% said that they used the netbook most often for studying, e.g. doing their homework and connecting to the school’s website; 22% reported that they used it most often for social networking sites and 13% said that they most often used it for playing and entertainment. When asked about the activities that they used their netbooks for the least; 39% reported playing and entertainment, 38% social networking sites and 23% studying. The most popular activities among UK students were in the categories of looking up things on the Internet (49%), leisure (44%), school-related activities and communication (both 40%); while 34% reported creating things (see Chart 30, “out of school”).

Out of school, UK students reported using their netbook mostly with the same subjects as in school, but with a slightly lower percentage (4% less for Geography and 6% less for National Language and Literature). The same tools were reported to be used with these school subjects as in school, i.e. educational school portals (46%), office tools (39%), collaboration tools (34%), but with some small differences. The use of collaboration and communication tools was higher out of school (9% and 6% respectively) (Table 6, see “out of school”). Moreover, UK students reported working collaboratively less often out of school than in school, and worked individually more often outside of school hours (81%) than in school (71%).

To gauge the informal learning opportunities brought by netbook use outside school hours, netbook students were asked about activities not related to school work or homework. UK netbook students reported many different usages outside school hours: looking for extra information on topics taught at school (47%), following current events (44%), developing skills related to their hobbies (e.g. learning to play guitar from YouTube videos or getting practical advice from a forum about a question related to their hobby) (44%), and looking for information on a topic of interest to them (43%). UK students were less interested in looking for information in languages other than their mother tongue (17%). On average, UK students reported 35% of these activities (pilot average 32%). (Table 3)

3.3 How did netbooks stimulate students’ interaction within their families?

20% of UK netbook students said that since receiving their netbook, they had talked with their parents about netbook use at least once a week. UK netbook parents’ perception differs somewhat, with 39% reporting having discussed it with their children at least once a week. 6% of students discussed netbook
use almost daily with their parents, whereas 19% said that they never talked about netbooks with their parents and 13% said “I don’t know”. For the remaining 43%, the netbooks were discussed at least once since the start of the pilot.

UK netbook parents were asked about which kind of activities have used the netbook for with their children: 88% said that they had used it for educational school-related activities, followed by 75% for search engines and online reference sites. 35% said they had used it to check the school website for announcements and 22% to communicate with relatives and friends. 11% contacted the school or teachers about issues related to school activities and, interestingly, 37% used it for social networking sites, more than in any other country.

UK netbook students said that they had helped the adults of their family to find information and websites they needed (48%), to use e-mail (46%), to fix a broken Internet connection (45%) and to set up an account and profile in a social network site (a higher percentage than other countries). Around 40% also helped to upload photos, to start using an Internet browser and to use chat or other communication tools. 17% said that they had never helped any of the adults in their family with Internet related issues. On average, students reported 36% of activities in helping adults in their family (pilot average 32%, Table 4).

3.4 How did parents perceive their child’s netbook usage?

UK netbook parents were asked to estimate how much time their children used the netbook for education (e.g. homework, accessing the school website). 14% estimated their child’s use of the netbook for education as less than 1 hour per average week, 29% estimated it as 1-3 hours per week, 24% 3-5 hours per week, whereas 40% estimated that the netbooks were used for education for more than 5 hours per week. Only 3% of parents said that they did not have any idea. Moreover, 25% of parents estimated that their child used the netbook for playing and entertainment for less than one hour per week, 30% estimated more, whereas 42% estimated not at all. As for social networking sites, 19% estimated less than 1 hour per week, 32 more than one hour per week and 45% estimated not at all.

When asked whether they knew what their children were doing when using the netbook or other ICT devices, 83% of UK parents said that they felt they knew enough about their child’s computer use. 10%, however, said that they knew one or two things, but that there were lots of things about which they were not aware. 6% said that they would like to know more about their child’s computer use and 1% said that they did not know anything about it.

As for establishing rules about their child’s use of the netbook and other ICT devices outside of school, 63% of UK parents said that they had clear agreements with their child on netbook usage for both school and leisure. A further 6% said that they had agreed on some terms, but that they were not very clear. 27% of UK parents did not have any agreed rules and 21% said that they trusted their child so they were not needed. 6% said that they had not thought of such agreements and 4% did not know about the issue.
This section discusses the views of teachers, students and parents on the impact of netbooks. It first focuses on the atmosphere in class and how netbooks affect communication patterns among students, parents and teachers, and then looks at the possible impact on a variety of learning aspects.

4.1 How did teachers estimate the impact of netbooks?

The majority of UK netbook teachers thought that netbooks in class made school work more enjoyable (74%), improved the atmosphere in class, e.g. pupils were more concentrated, there was less disruption in class (72%) and made students more motivated in learning and in school in general (70%). Moreover, 68% of UK netbook teachers estimated that netbooks had a positive impact on teacher-pupil collaboration and 62% said the same for pupil-pupil collaboration. They felt less certain about teacher-parent communication, with only 26% of UK teachers who felt it had a positive effect, whereas 55% had not formed an opinion on the issue. The UK average on this set of questions was 52% (pilot average 66%, Table 11).

UK netbook teachers were positive in their observations on the impact of netbooks on learning aspects: 81% observed that their students were more independent in their learning, e.g. students went over their work again and found out more about topics of interest, and three-quarters agreed that students were more likely to revise and edit their work thanks to netbooks. Over half of the UK netbook teachers agreed that students tried harder in what they were learning (58%) and that students understood what they were learning more easily (57%). In general, teachers agreed an average of 66% on learning aspects (pilot average 56%, Table 11).

Netbook teachers were also asked about possibility that netbooks could offer a more individualised learning track for students. Three-quarters of the UK teachers estimated that netbooks allowed students to learn at their own pace and in their own time (77%). Netbooks were deemed especially helpful in allowing students with special needs to participate more in lessons (66%). About half of the teachers also agreed that netbooks could help students with good grades (55%) and average grades (54%) excel further in their learning. Moreover, UK netbook teachers saw opportunities for netbooks to help re-engage learners at risk of dropping-out (52%). The UK average on this set of questions was 61% (pilot average 62%, Table 11).

About half of the UK netbook teachers said that they saw some change in students’ sense of responsibility towards their work, but estimated that students still needed to be reminded of deadlines (47%). A quarter of teachers estimated that their students took more responsibility for their work and completion of tasks (26%) and 17% said that their students took more responsibility for their equipment including netbooks. A quarter thought that netbooks had brought no change in this area.
4.2 How did students estimate the impact of netbooks?

65% of UK netbook students said that netbooks made school work more enjoyable and 63% agreed that netbooks had made them more motivated in learning and in school in general. More than half of the UK netbook students estimated that netbooks enabled them to work better with other students on tasks (57%) and 60% said that the netbooks improved the atmosphere in class, e.g. students were more concentrated, and there was less disruption in class. In general, UK netbook students reported such impact less than the netbook students from other countries. The average for UK netbook students’ on this set of questions was 61% (pilot average 60%).

UK netbook students, like their Turkish counterparts, were positive in their observations on the impact of netbooks on learning aspects. Two-thirds said that they felt more independent in their learning, e.g. they went over work again and found out more about topics of interest (68%), that they thought they could learn better at their own pace and in their own time (68%) and said that netbooks helped them understand what they were learning more easily and concentrate more on it (66%). 62% of UK netbook students said that they now tried harder in what they were learning, 61% said that netbooks helped them remember what they had learnt more easily and 60% agreed that they were more likely to revise or edit their work. About half also felt more confident about taking tests and evaluation (54%). UK netbook students’ average on learning aspects was 61% (pilot average 54%).

In the UK, 73% of netbook students estimated that their computer and ICT skills had improved and 65% said that the netbook helped them to be more organised. In the specific question, “Since you have been using the netbook, do you think you have become better in the following tasks?” UK students estimated a lot of progress (UK average 46%, vs. pilot average 37%). Up-skilling took place in the areas of “general Internet tasks” (47%), “high level ICT-tasks” (40%) and “e-Safety” (59%) (Chart 32).

In the category of “general Internet task”, more than a third reported an improvement in the following areas: emailing a file to someone/another student or teacher (63%), filing electronic documents in computer folders and subfolders (54%), installing software on my computer (48%) and participating in social networks and using most of their features (39%). In “high-level tasks”, the following was reported: creating a multimedia presentation (60%), producing text using a word processing programme (58%), using spreadsheet programmes (56%), editing digital photographs or other graphic images (47%), using a spreadsheet to plot a graph (43%), using information found on Internet without plagiarising (38%) and identifying sources of reliable information (38%). As for tasks related to e-Safety, the following was reported: using the Internet safely to protect their own privacy (67%), to respect privacy of others and to protect themselves against bullying (both 59%), to protect their own online reputation (57%) and to respect the online reputation of others (56%).

About a third of the UK students reported becoming better in the following tasks: editing online text containing Internet links and images, creating a database, protecting against spam, editing a questionnaire online, judging the reliability of information found on the Internet, participating in a discussion forum on the Internet, creating blogs or web sites and maintaining them, and participating in a discussion forum on the Internet.
In general, 58% of UK students’ attitudes towards the use of ICT devices in learning were in the category of making learning fun and having an interest in the use for ICT per se, whereas 58% agreed with the statements regarding their instrumental approach for future work and studies.

**Chart 32. Since using the netbook, have you become better in the following tasks?**

### 4.3 How did parents estimate the impact of netbooks?

67% of UK parents agreed that netbooks had a positive impact on their child’s engagement and motivation in school and learning in general and 47% estimated that netbooks had a positive impact on teacher-student-communication, while 27% said that they had a positive impact on teacher-student-parent collaboration.

UK netbook parents were also positive about the impact of netbooks in their child’s education in a wider sense: 74% agreed that the use of netbooks in school and outside of school had an impact on how their child could learn at his/her own pace, 73% agreed that it had an impact on their child’s informal remediation (e.g. catching up with topics, reinforce learning after school) and 54% said it also brought opportunities for parents to be involved in their child’s education. The UK average on this set of questions was 67% (pilot average 66%).

Three-quarters of UK parents agreed that using the netbook had improved their child’s ICT skills. More than half agreed that it had an impact on information handling skills, e.g. critically evaluating the validity and value of information and its source (59%), intellectual skills, e.g. problem solving (55%), personal skills such as taking initiative, persistence, self reflection on the learning process (51%). 42% agreed that there was an impact on spatial and motor skills, e.g. speed of reflexes (42%) and 41% agreed that netbooks also had a positive impact on social skills such as teamwork, communication skills, collaborative and organisational skills. The UK average on this set of questions was 57% (pilot average 62%). 30% of UK parents estimated that there was “no impact” and only 7% estimated “negative impact”.

In general, 87% of UK parents’ attitudes towards the use of ICT devices in learning were in the category of making learning fun and having an interest in the use for ICT per se, whereas 83% agreed with the statements regarding their instrumental approach for future work and studies, e.g. making learning more fun (90%) and because ICT devices offer more learning opportunities outside of school (89%).
5.1 What were the attitudes of students, teachers and parents towards the Acer-European Schoolnet Educational Netbook Pilot?

As part of the final evaluation students, parents and teachers were asked about their attitudes towards the Acer-European Schoolnet Educational Netbook Pilot. 63% of UK netbook students said that they were enthusiastic when they first heard that they would receive a netbook to use and 49% felt special and proud to be part of the pilot. 82% of netbook teachers in the UK said that they were enthusiastic about the project (the highest percentage in the pilot) and 22% said they felt special and proud to be part of it. On the other hand, 12% of UK students said that they did not care about the project at the beginning and 10% were hesitant about the pilot, similar to teachers (7%) and parents (8%). 13% of netbook teachers thought that it might cause them extra work as did 11% of students. 45% of UK parents said that they were interested in the pilot and about a quarter said they were fully convinced by the project. 42% of parents said that they trusted the decision of the teachers and school heads to run the pilot (lowest in the pilot). 42% disagreed with the statement “schools should consider more issues before starting such a project” (37% had not formed an opinion). The same number agreed with the statement “schools should be more careful in dealing with commercial providers” (47% had not formed an opinion and 37% disagreed). Ultimately though, UK netbook parents seemed happy with the Netbook Pilot, with 76% saying that they would recommend it to a friend’s child (pilot average 80%).
In terms of UK netbook teachers’ and parents’ attitudes towards technology, 59% of teachers and 47% of parents said that they agreed with the statement “When it comes to technology, the simpler the better”. On average, UK parents were most satisfied with the netbook’s features and suitability for their child (85%), whereas the average for teachers was 73% and for students 64%. As a general trend, parents and teachers seemed to agree more with specific features than students. The size of the netbook was considered the most suitable for children’s usage, with 93% of parents, 85% teachers and 73% of students who agreed upon this. A similar trend was seen with the keyboard, screen size and battery life for which parents and teachers were somewhat more favourable than students. The weight of the netbook was considered suitable by 87% of the parents and teachers, compared to 63% of students (Chart 33).

5.2 What concerns and problems did students and parents encounter?

The netbook evaluation also sought to identify more detailed problems and worries as stated by students and parents. Less than half of the UK students (46%) were afraid that they might damage their netbook and a third was worried their netbook might be stolen. In general, UK students had the fewest number of concerns (average 25 vs. pilot average 34%).

UK students reported an average of 21% of problems (pilot average 18%). The most reported problems were about software that did not work properly on the netbook (40%), a quarter said that they had had technical problems (e.g. inability to access the Internet), one in five said that they were distracted by games, chats, downloading music and social networking sites. 31% of students said that their eyes...
ached from looking at the screen for too long, while 44% of teachers said that students had complained about this aspect often or sometimes. Moreover, 31% of UK students said that they could not follow the lesson if they left the netbook at home or if it was broken. This is much lower than what teachers reported students as saying: 77% of UK teachers said students had complained about the issue at least occasionally.

Teachers also were asked to estimate whether their students had complained about a number of issues. 37% of UK teachers said that students had complained that writing with the keyboard was more complicated than by hand. About half said that their students complained that using multiple resources, for example conventional worksheets and Internet-based resources, was more difficult than using one textbook, and that they received more homework than before due to technical problems slowing down the class (both 46%) (includes answers: rarely, sometimes, often, all the time).

84% of UK netbook parents said they had not experienced any of the problems listed, such as dropping the netbook, rough use, damage through liquids or bullying by other pupils. 13% reported jealousy from other pupils who had not received netbooks.

5.3 What obstacles did teachers encounter?

During the Netbook Pilot, 87% of UK teachers reported having encountered some technical problems with netbooks, of any kind, that meant it was necessary for them to suspend the use of netbooks totally (in line with other countries). 53% reported having such problems often and sometimes, whereas 9% reported all the time. UK teachers had good access to technical support, with 69% saying support was available (rarely or sometimes) and 18% all the time-often.

In the UK, teachers encountered quite a high level of problems with netbooks, 78% of teachers said that they had some netbooks that became unusable due to any sort of damage or technical failure; 67% of teachers had 1-15% of netbooks unusable in class at some point in time. However, 40% did not think that such unavailability affected their teaching at all, whereas 40% said it bothered them to a small extent. Another 20% deemed that it negatively affected their teaching (includes answers: to a moderate, great and very great extent).

Netbook problems can be roughly categorised into five different types: problems related to the netbook itself (e.g. hardware issues, software incompatibility); problems caused by the school environment (e.g. firewall issues, incompatibility between netbooks and the school technical infrastructure, no suitable places to use netbooks), problems connecting to the Internet (this can be related to other categories); user-related issues (e.g. uncharged batteries, problems with track pad) and other behavioural issues (e.g. distracted by games). Within these categories, UK netbook teachers mostly encountered problems due to user-related issues (67%), problems connecting to the Internet (66%), constraints of the school environment (62%), problems related to the netbook (52%) and, to a lesser degree, behavioural issues (43%). (Table 8)

User-related problems in the UK were as follows: uncharged netbook batteries (84%), difficulties using the track pad mouse (68%) and a broken netbook because the student used it too roughly (48%). In the second category, 82% reported having problems connecting students’ netbooks or teachers’ notebooks
(49%) to the Internet. Problems due to constraints of the school environment included the school’s filters and firewalls that not allowing access to certain websites (63%), incompatibility between netbooks and the school ICT infrastructure (e.g. accessing shared servers), but also insufficient Internet access, e.g. Internet not available in a specific classroom (61%). In this category, the UK schools reported the most problems in the pilot, with an average 62% (pilot average 44%). The fourth area of problems was related to the netbook hardware, with 60% reporting problems with software that did not work on the netbook and 44% reporting hardware issues. Finally, behavioural problems included students being distracted by games, chats and social networking (72%), and e-safety issues that affected the planning and implementation of teaching (65%).

UK netbook teachers used a variety of support mechanisms if they needed help with netbooks, but the most often used source of help was a student in class (58%) who was also reportedly able to help. 54% said that an IT support person or technology coordinator was contacted and able to help, and a similar number asked another teacher. 31% of UK teachers turned to an online community site, while around a quarter asked friends or colleagues outside school (26%), the netbook website (25%) or the pilot organisers (24%).
6.1 How did the school’s vision empower netbook teachers?

When schools applied for the Netbook Pilot, the schools’ ICT vision was emphasised to ensure that the netbooks were not a separate experiment outside the school’s ICT vision. Three-quarters of the UK netbook teachers agreed that their school’s ICT vision supported the use of netbooks (75%). In terms of the school’s time organisation (e.g. fixed lessons times), 71% felt that it was suitable for the use of netbooks and 67% felt the same in terms of the space organisation (e.g. classroom size and furniture).

62% of UK netbook teachers agreed that their curriculum was clear and easy to follow, making the use of netbooks easy in teaching, and 58% agreed that they had the time and flexibility to work on netbook projects related to the curriculum (among the highest in the pilot). 52% of UK netbook teachers said that their school provided enough institutional support for the use of netbooks, 50% said the same for pedagogical support, 47% for technical support and only 26% for financial support. The average score for the UK school environment in terms of supporting and empowering teachers was 53% (pilot average 57%).

39% of teachers said that their school head actively encouraged them to pursue professional development activities that helped to integrate netbooks into the curriculum (the lowest in the pilot) and only 20% said that they easily received permission to attend professional development workshops related to netbooks. Teachers were also asked whether such professional development regarding netbook activities had impacted their development as a teacher during the previous 18 months: participating in informal dialogue with teacher colleagues to improve their teaching (69%), carrying out research on a professional topic of interest (48%), and taking part in workshops or courses (40%) were the activities which were said to have had a large, moderate and small impact in this respect.

6.2 How did the school support teachers’ exchange of practices?

44% of UK netbook teachers said that, since the beginning of the Netbook Pilot, they had attended staff meetings to discuss their school’s vision and mission on netbooks, but 65% said they had taken part in developing the school curriculum to make it more suitable for netbooks and 51% said they had discussed and made decisions on the selection of suitable teaching resources for netbooks (e.g., textbooks, exercise books) (includes answers: all the time, often and sometimes). 55% of UK teachers said that they had exchanged teaching materials suitable for netbooks with colleagues. Half of the
UK teachers also said they had observed other teachers’ classes and provided feedback and 46% said they had engaged in joint activities across different classes and age groups, e.g. eTwinning projects (highest in the pilot). Moreover, 39% discussed and coordinated homework practice across subjects. The average score for support by UK schools for exchanges between netbook teachers was 46% (pilot average 50%).

The most common form of communication with other netbook teachers in the UK was through informal discussions in school about netbooks (67%) and through email (66%). 58% also said that they had participated in organised meetings in school to talk about and plan netbook use. 34% had attended a face-to-face meeting held by the Netbook Pilot organisers, whereas a quarter used online meeting tools such as Flashmeeting (26%) or an online platform such as Moodle (23%). On average, UK netbook teachers reported very similar levels of communication as other netbook teachers (41% vs. pilot average 49%).
What did teachers gain from the Acer-European Schoolnet Educational Netbook Pilot?

One of the main rewards that UK teachers reported in regards to participating in the Netbook Pilot were higher student motivation (91%), the highest reported level in the pilot. 19% also said that they were motivated by higher test scores for students and 16% mentioned changes in work responsibilities that made the job more attractive. 2% also mentioned more training opportunities in new ways to teach and another 12% mentioned the recognition from colleagues within the working environment.

Even though 63% of UK netbook teachers estimated that they still needed to learn more about how to integrate ICT into teaching and learning, 80% said that they would like to continue using netbooks in the following academic year. Experiences gained from the pilot with regards to professional development were numerous; 73% said that used a greater variety of resources (online and offline) during their classes, two-thirds said that they now had a better understanding on how to integrate ICT into their subject area, that they alternated a wider variety of activities with and without ICT in their lessons and that they were better able to evaluate when ICT is needed and when it is not. 54% said that they were more prepared to work collaboratively with other teachers in their school and 44% said they were more prepared to plan and coordinate cross-curricular teaching. The average score for professional development gain in the UK was 65% (pilot average 71%). 83% of UK teachers said that they would recommend the use of netbooks in school to their fellow teachers!
### Annex

#### Tables

**Table 2** Netbook students’ activities in school and out of school (a, b).

<table>
<thead>
<tr>
<th>a) Netbook students: Indicate the things you have used your netbook outside of school (multiple choice)</th>
<th>Type of activity</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Sp</th>
<th>Tr</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use social networking sites (e.g. Facebook, schülerVZ, Tuenti, Bebo, Twitter)</td>
<td>Communication</td>
<td>60%</td>
<td>64%</td>
<td>62%</td>
<td>54%</td>
<td>54%</td>
<td>69%</td>
<td>61%</td>
</tr>
<tr>
<td>I communicate with relatives and family friends (e.g. using email/Skype)</td>
<td>Communication</td>
<td>57%</td>
<td>59%</td>
<td>56%</td>
<td>53%</td>
<td>55%</td>
<td>69%</td>
<td>54%</td>
</tr>
<tr>
<td>I participate in online forums, chat rooms and virtual communities</td>
<td>Communication</td>
<td>44%</td>
<td>47%</td>
<td>50%</td>
<td>32%</td>
<td>48%</td>
<td>54%</td>
<td>40%</td>
</tr>
<tr>
<td>I use multimedia to edit/create photos, videos and/or presentations</td>
<td>Create</td>
<td>57%</td>
<td>61%</td>
<td>41%</td>
<td>64%</td>
<td>59%</td>
<td>72%</td>
<td>46%</td>
</tr>
<tr>
<td>I create websites/write blogs/write computer programs</td>
<td>Create</td>
<td>29%</td>
<td>31%</td>
<td>18%</td>
<td>24%</td>
<td>44%</td>
<td>37%</td>
<td>22%</td>
</tr>
<tr>
<td>I listen to music</td>
<td>Leisure</td>
<td>69%</td>
<td>77%</td>
<td>61%</td>
<td>75%</td>
<td>62%</td>
<td>78%</td>
<td>61%</td>
</tr>
<tr>
<td>I organise files on my netbook (e.g. music play lists, iPod, videos)</td>
<td>Leisure</td>
<td>55%</td>
<td>62%</td>
<td>48%</td>
<td>59%</td>
<td>49%</td>
<td>68%</td>
<td>48%</td>
</tr>
<tr>
<td>I watch TV or films</td>
<td>Leisure</td>
<td>54%</td>
<td>64%</td>
<td>51%</td>
<td>55%</td>
<td>43%</td>
<td>62%</td>
<td>53%</td>
</tr>
<tr>
<td>I play online games</td>
<td>Leisure</td>
<td>51%</td>
<td>54%</td>
<td>44%</td>
<td>55%</td>
<td>49%</td>
<td>54%</td>
<td>59%</td>
</tr>
<tr>
<td>I download music/videos/software online</td>
<td>Leisure</td>
<td>39%</td>
<td>34%</td>
<td>25%</td>
<td>41%</td>
<td>44%</td>
<td>50%</td>
<td>45%</td>
</tr>
<tr>
<td>I read eBooks</td>
<td>Leisure</td>
<td>22%</td>
<td>18%</td>
<td>11%</td>
<td>17%</td>
<td>25%</td>
<td>44%</td>
<td>14%</td>
</tr>
<tr>
<td>I buy or book tickets, books, etc.</td>
<td>Leisure</td>
<td>20%</td>
<td>16%</td>
<td>17%</td>
<td>15%</td>
<td>19%</td>
<td>33%</td>
<td>29%</td>
</tr>
<tr>
<td>I use search engines (e.g. Google) and online reference sources (e.g. Wikipedia)</td>
<td>Looking up</td>
<td>75%</td>
<td>74%</td>
<td>68%</td>
<td>82%</td>
<td>70%</td>
<td>78%</td>
<td>65%</td>
</tr>
<tr>
<td>I look for internet safety related material</td>
<td>Looking up</td>
<td>35%</td>
<td>31%</td>
<td>26%</td>
<td>36%</td>
<td>36%</td>
<td>60%</td>
<td>33%</td>
</tr>
<tr>
<td>I do school related activities (e.g. homework)</td>
<td>School</td>
<td>70%</td>
<td>58%</td>
<td>56%</td>
<td>82%</td>
<td>64%</td>
<td>79%</td>
<td>60%</td>
</tr>
<tr>
<td>I check the school website for announcement</td>
<td>School</td>
<td>54%</td>
<td>50%</td>
<td>49%</td>
<td>47%</td>
<td>55%</td>
<td>75%</td>
<td>37%</td>
</tr>
<tr>
<td>I contact school/teachers about issues related to school activities</td>
<td>School</td>
<td>43%</td>
<td>42%</td>
<td>33%</td>
<td>39%</td>
<td>52%</td>
<td>59%</td>
<td>23%</td>
</tr>
<tr>
<td>Average amount of activities out of school</td>
<td></td>
<td>49%</td>
<td>45%</td>
<td>42%</td>
<td>49%</td>
<td>49%</td>
<td>61%</td>
<td>44%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b) Netbook students: Indicate the things you have used your netbook in school (multiple choice)</th>
<th>Type of activity</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Sp</th>
<th>Tr</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>I contact school/teachers about issues related to school activities</td>
<td>Communicate</td>
<td>52%</td>
<td>31%</td>
<td>37%</td>
<td>53%</td>
<td>65%</td>
<td>84%</td>
<td>40%</td>
</tr>
<tr>
<td>I communicate with relatives and family friends (e.g. using email/Skype)</td>
<td>Communicate</td>
<td>24%</td>
<td>21%</td>
<td>25%</td>
<td>14%</td>
<td>32%</td>
<td>32%</td>
<td>22%</td>
</tr>
<tr>
<td>I use social networking sites (e.g. Facebook, schülerVZ, Tuenti, Bebo, Twitter)</td>
<td>Communicate</td>
<td>23%</td>
<td>26%</td>
<td>30%</td>
<td>14%</td>
<td>23%</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>I participate in online forums, chat rooms and virtual communities</td>
<td>Communicate</td>
<td>22%</td>
<td>22%</td>
<td>25%</td>
<td>14%</td>
<td>33%</td>
<td>26%</td>
<td>21%</td>
</tr>
<tr>
<td>I use multimedia to edit/create photos, videos and/or presentations</td>
<td>Create</td>
<td>49%</td>
<td>36%</td>
<td>44%</td>
<td>38%</td>
<td>58%</td>
<td>66%</td>
<td>66%</td>
</tr>
<tr>
<td>I create websites/write blogs/write computer programs</td>
<td>Create</td>
<td>26%</td>
<td>15%</td>
<td>16%</td>
<td>17%</td>
<td>51%</td>
<td>36%</td>
<td>29%</td>
</tr>
<tr>
<td>I organise files on my netbook (e.g. music play lists, iPod, videos)</td>
<td>Leisure</td>
<td>37%</td>
<td>30%</td>
<td>40%</td>
<td>26%</td>
<td>34%</td>
<td>50%</td>
<td>47%</td>
</tr>
<tr>
<td>I listen to music</td>
<td>Leisure</td>
<td>32%</td>
<td>24%</td>
<td>32%</td>
<td>22%</td>
<td>43%</td>
<td>41%</td>
<td>40%</td>
</tr>
<tr>
<td>I play online games</td>
<td>Leisure</td>
<td>23%</td>
<td>18%</td>
<td>28%</td>
<td>18%</td>
<td>26%</td>
<td>20%</td>
<td>43%</td>
</tr>
<tr>
<td>I watch TV or films</td>
<td>Leisure</td>
<td>19%</td>
<td>18%</td>
<td>23%</td>
<td>13%</td>
<td>19%</td>
<td>25%</td>
<td>22%</td>
</tr>
<tr>
<td>I read eBooks</td>
<td>Leisure</td>
<td>19%</td>
<td>9%</td>
<td>8%</td>
<td>11%</td>
<td>28%</td>
<td>40%</td>
<td>15%</td>
</tr>
<tr>
<td>I download music/videos/software online</td>
<td>Leisure</td>
<td>17%</td>
<td>10%</td>
<td>11%</td>
<td>16%</td>
<td>25%</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>I buy or book tickets, books, etc.</td>
<td>Leisure</td>
<td>9%</td>
<td>6%</td>
<td>6%</td>
<td>5%</td>
<td>14%</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td>I use search engines (e.g. Google) and online reference sources (e.g. Wikipedia)</td>
<td>Looking up</td>
<td>83%</td>
<td>66%</td>
<td>85%</td>
<td>78%</td>
<td>88%</td>
<td>86%</td>
<td>85%</td>
</tr>
<tr>
<td>I look for internet safety related material</td>
<td>Looking up</td>
<td>34%</td>
<td>21%</td>
<td>31%</td>
<td>25%</td>
<td>44%</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>I do school related activities (e.g. homework)</td>
<td>School</td>
<td>87%</td>
<td>64%</td>
<td>81%</td>
<td>92%</td>
<td>93%</td>
<td>90%</td>
<td>85%</td>
</tr>
<tr>
<td>I check the school website for announcement</td>
<td>School</td>
<td>53%</td>
<td>38%</td>
<td>44%</td>
<td>37%</td>
<td>77%</td>
<td>70%</td>
<td>49%</td>
</tr>
<tr>
<td>Average amount of activities in school</td>
<td></td>
<td>36%</td>
<td>27%</td>
<td>33%</td>
<td>29%</td>
<td>44%</td>
<td>46%</td>
<td>39%</td>
</tr>
</tbody>
</table>
### Table 3. Informal learning opportunities.

<table>
<thead>
<tr>
<th>Students: Do you use the netbook to learn about things not related to schoolwork and not part of your homework? (Choose as many as you want)</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Es</th>
<th>Tr</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>I look for extra information on topics taught at school</td>
<td>47%</td>
<td>38%</td>
<td>42%</td>
<td>50%</td>
<td>48%</td>
<td>60%</td>
<td>47%</td>
</tr>
<tr>
<td>I follow current events (news, weather)</td>
<td>44%</td>
<td>49%</td>
<td>42%</td>
<td>33%</td>
<td>38%</td>
<td>57%</td>
<td>44%</td>
</tr>
<tr>
<td>I look for information on topics that are not taught at school, but that are interesting for me (sport, celebrities, TV shows)</td>
<td>37%</td>
<td>41%</td>
<td>32%</td>
<td>35%</td>
<td>37%</td>
<td>40%</td>
<td>43%</td>
</tr>
<tr>
<td>I develop skills related to my hobbies (e.g. learn to play guitar watching YouTube videos; get practical advice at forum about a question related to my hobby)</td>
<td>30%</td>
<td>39%</td>
<td>29%</td>
<td>26%</td>
<td>21%</td>
<td>27%</td>
<td>44%</td>
</tr>
<tr>
<td>I look for information in my interest area in other languages than my mother tongue</td>
<td>23%</td>
<td>28%</td>
<td>22%</td>
<td>21%</td>
<td>25%</td>
<td>25%</td>
<td>17%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>11%</td>
<td>11%</td>
<td>12%</td>
<td>12%</td>
<td>11%</td>
<td>5%</td>
<td>13%</td>
</tr>
<tr>
<td>Average:</td>
<td>32%</td>
<td>34%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>36%</td>
<td>35%</td>
</tr>
</tbody>
</table>

### Table 4. Netbooks stimulating interactions within family (a, b, c).

<table>
<thead>
<tr>
<th>a) Parents: When your child uses the netbook or other ICT devices, do you know what s/he is using it for (e.g. school work or leisure)? (Choose one)</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Es</th>
<th>Tk</th>
<th>Uk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I feel I know enough about my child’s computer use</td>
<td>76%</td>
<td>77%</td>
<td>69%</td>
<td>88%</td>
<td>66%</td>
<td>73%</td>
<td>83%</td>
</tr>
<tr>
<td>I know one or two things, but there are lots of things I’m not aware of</td>
<td>16%</td>
<td>14%</td>
<td>27%</td>
<td>7%</td>
<td>25%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>I don’t know as much as I’d like to know about my child’s computer use</td>
<td>6%</td>
<td>6%</td>
<td>3%</td>
<td>3%</td>
<td>8%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>I don’t know anything about my child’s computer use</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>b) Parents: Have you established rules about the use of the netbook or other ICT devices outside of school? (Choose one)</td>
<td>Pilot average</td>
<td>Fr</td>
<td>De</td>
<td>It</td>
<td>Es</td>
<td>Tk</td>
<td>Uk</td>
</tr>
<tr>
<td>Yes, we have clear agreements on both for school and leisure use</td>
<td>54%</td>
<td>56%</td>
<td>51%</td>
<td>62%</td>
<td>47%</td>
<td>49%</td>
<td>63%</td>
</tr>
<tr>
<td>Yes, we have agreed on some terms, but they are not very clear</td>
<td>13%</td>
<td>11%</td>
<td>14%</td>
<td>10%</td>
<td>17%</td>
<td>13%</td>
<td>6%</td>
</tr>
<tr>
<td>No, we don’t need such terms, I trust my child</td>
<td>27%</td>
<td>26%</td>
<td>29%</td>
<td>24%</td>
<td>31%</td>
<td>27%</td>
<td>21%</td>
</tr>
<tr>
<td>No, I have not thought about such agreements</td>
<td>4%</td>
<td>6%</td>
<td>3%</td>
<td>2%</td>
<td>4%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>I don’t know</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
<td>1%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>c) Students: have you ever helped the adults in your family to use Internet? Select all the things you have helped them with. (Choose as many as you want)</td>
<td>Pilot average</td>
<td>Fr</td>
<td>De</td>
<td>It</td>
<td>Sp</td>
<td>Tr</td>
<td>UK</td>
</tr>
<tr>
<td>To use e-mail</td>
<td>48%</td>
<td>51%</td>
<td>42%</td>
<td>39%</td>
<td>59%</td>
<td>53%</td>
<td>46%</td>
</tr>
<tr>
<td>To find information and websites they need</td>
<td>43%</td>
<td>40%</td>
<td>34%</td>
<td>44%</td>
<td>45%</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>To start using an Internet browser</td>
<td>41%</td>
<td>43%</td>
<td>42%</td>
<td>27%</td>
<td>55%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>To fix the Internet connection that was not working</td>
<td>38%</td>
<td>49%</td>
<td>34%</td>
<td>30%</td>
<td>40%</td>
<td>36%</td>
<td>45%</td>
</tr>
<tr>
<td>To upload photos</td>
<td>35%</td>
<td>43%</td>
<td>22%</td>
<td>35%</td>
<td>28%</td>
<td>47%</td>
<td>43%</td>
</tr>
<tr>
<td>To set up an account and profile in a social network (e.g. Facebook)</td>
<td>31%</td>
<td>35%</td>
<td>27%</td>
<td>26%</td>
<td>32%</td>
<td>31%</td>
<td>44%</td>
</tr>
<tr>
<td>To use chat or other communication tools (e.g. Skype, Messenger)</td>
<td>25%</td>
<td>25%</td>
<td>18%</td>
<td>24%</td>
<td>27%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>I have never helped them</td>
<td>20%</td>
<td>23%</td>
<td>23%</td>
<td>25%</td>
<td>14%</td>
<td>14%</td>
<td>17%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>6%</td>
<td>5%</td>
<td>9%</td>
<td>6%</td>
<td>5%</td>
<td>3%</td>
<td>8%</td>
</tr>
<tr>
<td>Average:</td>
<td>32%</td>
<td>35%</td>
<td>28%</td>
<td>28%</td>
<td>34%</td>
<td>34%</td>
<td>36%</td>
</tr>
</tbody>
</table>
Table 5. Students’ use of netbook out of school (a, b, c).

<table>
<thead>
<tr>
<th>Question</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Sp</th>
<th>Tr</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Students: If you use the netbook outside the school hours, where do you use it? (Choose as many as you want)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At home</td>
<td>83%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In school for after school activity</td>
<td>29%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At friends’ places</td>
<td>25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It’s taken with me on holiday</td>
<td>14%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In public places (e.g. in library)</td>
<td>13%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, please specify</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the way home (e.g. on a school bus)</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Students: If you take the netbook home from school, where is it mainly used? (Choose as many as you want)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On my own desk</td>
<td>65%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In my bedroom</td>
<td>60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the living room</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the office/or dedicated computer room</td>
<td>25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the kitchen</td>
<td>15%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the dining room</td>
<td>15%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Students: If you take the netbook home from school, how do you carry it?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In my school bag with a cover</td>
<td>63%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a separate computer bag</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In my school bag without a cover</td>
<td>7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I hold it in my hand</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Educational tools used with netbooks in subject studies.

<table>
<thead>
<tr>
<th>Educational tool</th>
<th>Pilot average</th>
<th>Pilot average</th>
<th>Fr</th>
<th>Fr</th>
<th>De</th>
<th>De</th>
<th>It</th>
<th>It</th>
<th>Sp</th>
<th>Sp</th>
<th>Tr</th>
<th>Tr</th>
<th>UK</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational school portal or learning platform</td>
<td>37%</td>
<td>37%</td>
<td>37%</td>
<td>35%</td>
<td>34%</td>
<td>31%</td>
<td>23%</td>
<td>29%</td>
<td>43%</td>
<td>44%</td>
<td>49%</td>
<td>47%</td>
<td>44%</td>
<td>46%</td>
</tr>
<tr>
<td>Collaboration tools (e.g. blogs, social networking sites, wikis, bookmarking)</td>
<td>35%</td>
<td>37%</td>
<td>18%</td>
<td>26%</td>
<td>32%</td>
<td>33%</td>
<td>28%</td>
<td>32%</td>
<td>57%</td>
<td>57%</td>
<td>48%</td>
<td>44%</td>
<td>25%</td>
<td>34%</td>
</tr>
<tr>
<td>Office tools (e.g. word editing and spreadsheets)</td>
<td>34%</td>
<td>32%</td>
<td>37%</td>
<td>37%</td>
<td>20%</td>
<td>19%</td>
<td>54%</td>
<td>50%</td>
<td>33%</td>
<td>33%</td>
<td>19%</td>
<td>14%</td>
<td>47%</td>
<td>39%</td>
</tr>
<tr>
<td>Subject specific educational software (e.g. Maths/ science programmes)</td>
<td>30%</td>
<td>28%</td>
<td>33%</td>
<td>28%</td>
<td>25%</td>
<td>22%</td>
<td>32%</td>
<td>33%</td>
<td>28%</td>
<td>32%</td>
<td>29%</td>
<td>28%</td>
<td>31%</td>
<td>22%</td>
</tr>
<tr>
<td>Digital resources (e.g. online quizzes and tests, animations, videos)</td>
<td>24%</td>
<td>23%</td>
<td>20%</td>
<td>22%</td>
<td>19%</td>
<td>17%</td>
<td>23%</td>
<td>24%</td>
<td>28%</td>
<td>28%</td>
<td>29%</td>
<td>28%</td>
<td>27%</td>
<td>22%</td>
</tr>
<tr>
<td>Communications tools (e.g. email, Skype, IM and text messaging)</td>
<td>22%</td>
<td>28%</td>
<td>17%</td>
<td>28%</td>
<td>16%</td>
<td>22%</td>
<td>17%</td>
<td>24%</td>
<td>33%</td>
<td>36%</td>
<td>29%</td>
<td>29%</td>
<td>35%</td>
<td>26%</td>
</tr>
<tr>
<td>Digital textbooks</td>
<td>21%</td>
<td>20%</td>
<td>21%</td>
<td>18%</td>
<td>19%</td>
<td>16%</td>
<td>25%</td>
<td>25%</td>
<td>18%</td>
<td>18%</td>
<td>27%</td>
<td>23%</td>
<td>16%</td>
<td>22%</td>
</tr>
<tr>
<td>Interactive whiteboards (e.g. Smartboard, Polyvision)</td>
<td>16%</td>
<td>14%</td>
<td>14%</td>
<td>9%</td>
<td>13%</td>
<td>8%</td>
<td>29%</td>
<td>25%</td>
<td>23%</td>
<td>19%</td>
<td>15%</td>
<td>11%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Digital media tools (e.g. recording and editing video or audio)</td>
<td>18%</td>
<td>17%</td>
<td>17%</td>
<td>22%</td>
<td>12%</td>
<td>12%</td>
<td>17%</td>
<td>23%</td>
<td>23%</td>
<td>20%</td>
<td>17%</td>
<td>20%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Digital games</td>
<td>14%</td>
<td>15%</td>
<td>11%</td>
<td>15%</td>
<td>15%</td>
<td>12%</td>
<td>16%</td>
<td>15%</td>
<td>14%</td>
<td>9%</td>
<td>11%</td>
<td>23%</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Virtual experiments and simulations</td>
<td>12%</td>
<td>12%</td>
<td>11%</td>
<td>10%</td>
<td>8%</td>
<td>10%</td>
<td>9%</td>
<td>10%</td>
<td>13%</td>
<td>15%</td>
<td>18%</td>
<td>18%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Data loggers and sensor tools (e.g. temperature rise)</td>
<td>10%</td>
<td>9%</td>
<td>8%</td>
<td>5%</td>
<td>9%</td>
<td>10%</td>
<td>8%</td>
<td>10%</td>
<td>11%</td>
<td>14%</td>
<td>13%</td>
<td>8%</td>
<td>8%</td>
<td>12%</td>
</tr>
<tr>
<td>Virtual Learning Environments/Learning management systems (e.g. Blackboard, Moodle, Angel)</td>
<td>10%</td>
<td>8%</td>
<td>6%</td>
<td>3%</td>
<td>9%</td>
<td>8%</td>
<td>4%</td>
<td>3%</td>
<td>16%</td>
<td>16%</td>
<td>10%</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Mobile devices (e.g. cell phones, PDAs, MP3 players)</td>
<td>9%</td>
<td>12%</td>
<td>8%</td>
<td>16%</td>
<td>7%</td>
<td>9%</td>
<td>6%</td>
<td>9%</td>
<td>11%</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Video conferencing (e.g. Flashmeeting, Eluminate)</td>
<td>6%</td>
<td>6%</td>
<td>3%</td>
<td>3%</td>
<td>5%</td>
<td>5%</td>
<td>6%</td>
<td>7%</td>
<td>9%</td>
<td>5%</td>
<td>9%</td>
<td>9%</td>
<td>12%</td>
<td>12%</td>
</tr>
</tbody>
</table>
Table 7. Teachers alternating teaching styles during netbook classes.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Es</th>
<th>Tk</th>
<th>Uk</th>
</tr>
</thead>
<tbody>
<tr>
<td>I present, demonstrate and explain to the whole class</td>
<td>92%</td>
<td>84%</td>
<td>92%</td>
<td>91%</td>
<td>95%</td>
<td>93%</td>
<td>96%</td>
</tr>
<tr>
<td>Pupils give presentations to the whole class</td>
<td>75%</td>
<td>51%</td>
<td>85%</td>
<td>72%</td>
<td>72%</td>
<td>84%</td>
<td>90%</td>
</tr>
<tr>
<td>Frontal average:</td>
<td>83%</td>
<td>67%</td>
<td>88%</td>
<td>81%</td>
<td>84%</td>
<td>89%</td>
<td>94%</td>
</tr>
<tr>
<td>I support and explain things to individual pupils</td>
<td>88%</td>
<td>78%</td>
<td>95%</td>
<td>83%</td>
<td>88%</td>
<td>93%</td>
<td>98%</td>
</tr>
<tr>
<td>Pupils work individually at their own pace</td>
<td>92%</td>
<td>91%</td>
<td>94%</td>
<td>92%</td>
<td>90%</td>
<td>92%</td>
<td>100%</td>
</tr>
<tr>
<td>Pupils work individually at the same pace</td>
<td>58%</td>
<td>54%</td>
<td>47%</td>
<td>51%</td>
<td>61%</td>
<td>70%</td>
<td>73%</td>
</tr>
<tr>
<td>Individual processes (average):</td>
<td>80%</td>
<td>74%</td>
<td>79%</td>
<td>75%</td>
<td>79%</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>Pupils work in groups/Social processes:</td>
<td>81%</td>
<td>72%</td>
<td>85%</td>
<td>79%</td>
<td>79%</td>
<td>86%</td>
<td>90%</td>
</tr>
<tr>
<td>Overall average:</td>
<td>81%</td>
<td>72%</td>
<td>83%</td>
<td>78%</td>
<td>81%</td>
<td>86%</td>
<td>92%</td>
</tr>
</tbody>
</table>

Table 8. Types of technical problems hindering education (a, b, c, d, e).

<table>
<thead>
<tr>
<th>Problem</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Es</th>
<th>Tk</th>
<th>Uk</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) School environment</td>
<td>44%</td>
<td>38%</td>
<td>43%</td>
<td>38%</td>
<td>33%</td>
<td>60%</td>
<td>62%</td>
</tr>
<tr>
<td>Insufficient Internet access (e.g., Internet not available in a specific classroom)</td>
<td>59%</td>
<td>59%</td>
<td>65%</td>
<td>58%</td>
<td>49%</td>
<td>66%</td>
<td>81%</td>
</tr>
<tr>
<td>School’s filters or firewalls don’t allow to access the websites I need</td>
<td>38%</td>
<td>29%</td>
<td>37%</td>
<td>28%</td>
<td>27%</td>
<td>59%</td>
<td>63%</td>
</tr>
<tr>
<td>Incompatibility between netbooks and the school ICT infrastructure (e.g., accessing shared servers)</td>
<td>34%</td>
<td>28%</td>
<td>26%</td>
<td>28%</td>
<td>23%</td>
<td>54%</td>
<td>82%</td>
</tr>
<tr>
<td>b) Connecting to the Internet</td>
<td>62%</td>
<td>58%</td>
<td>60%</td>
<td>58%</td>
<td>64%</td>
<td>65%</td>
<td>66%</td>
</tr>
<tr>
<td>Problem with the Internet connection (pupils’ machines)</td>
<td>69%</td>
<td>64%</td>
<td>68%</td>
<td>65%</td>
<td>75%</td>
<td>65%</td>
<td>82%</td>
</tr>
<tr>
<td>Problem with the Internet connection (teacher’s machine)</td>
<td>54%</td>
<td>52%</td>
<td>51%</td>
<td>51%</td>
<td>52%</td>
<td>64%</td>
<td>49%</td>
</tr>
<tr>
<td>c) Netbook related issues</td>
<td>39%</td>
<td>55%</td>
<td>37%</td>
<td>29%</td>
<td>36%</td>
<td>38%</td>
<td>52%</td>
</tr>
<tr>
<td>Problem with a software that did not work properly on the netbooks</td>
<td>45%</td>
<td>46%</td>
<td>48%</td>
<td>36%</td>
<td>47%</td>
<td>43%</td>
<td>60%</td>
</tr>
<tr>
<td>A broken netbook due to other problem (e.g., hardware/screen problem)</td>
<td>33%</td>
<td>64%</td>
<td>25%</td>
<td>22%</td>
<td>24%</td>
<td>32%</td>
<td>44%</td>
</tr>
<tr>
<td>d) User related issues</td>
<td>46%</td>
<td>57%</td>
<td>46%</td>
<td>41%</td>
<td>37%</td>
<td>48%</td>
<td>67%</td>
</tr>
<tr>
<td>Problem with the track pad (pupils had to use an external mouse)</td>
<td>61%</td>
<td>54%</td>
<td>61%</td>
<td>54%</td>
<td>60%</td>
<td>74%</td>
<td>68%</td>
</tr>
<tr>
<td>Uncharged netbook battery</td>
<td>52%</td>
<td>70%</td>
<td>55%</td>
<td>46%</td>
<td>42%</td>
<td>39%</td>
<td>84%</td>
</tr>
<tr>
<td>A broken netbook because a pupil used it too roughly (e.g., dropping the netbook on a floor, spilling liquid over the keyboard)</td>
<td>26%</td>
<td>46%</td>
<td>21%</td>
<td>24%</td>
<td>8%</td>
<td>32%</td>
<td>48%</td>
</tr>
<tr>
<td>e) Behavioural issues, other</td>
<td>40%</td>
<td>38%</td>
<td>38%</td>
<td>34%</td>
<td>38%</td>
<td>50%</td>
<td>43%</td>
</tr>
<tr>
<td>Pupils spending too much time on computer in general</td>
<td>64%</td>
<td>66%</td>
<td>70%</td>
<td>59%</td>
<td>59%</td>
<td>73%</td>
<td>49%</td>
</tr>
<tr>
<td>Pupils being distracted via games, chats, or social networking sites</td>
<td>59%</td>
<td>54%</td>
<td>53%</td>
<td>65%</td>
<td>58%</td>
<td>59%</td>
<td>72%</td>
</tr>
<tr>
<td>E-safety issues that affect planning and implementing my teaching</td>
<td>52%</td>
<td>30%</td>
<td>58%</td>
<td>42%</td>
<td>50%</td>
<td>70%</td>
<td>65%</td>
</tr>
<tr>
<td>Pupils downloading inappropriate content or software applications</td>
<td>50%</td>
<td>56%</td>
<td>37%</td>
<td>46%</td>
<td>54%</td>
<td>55%</td>
<td>54%</td>
</tr>
<tr>
<td>Other pupils without netbooks bullying the ones with netbooks</td>
<td>26%</td>
<td>28%</td>
<td>31%</td>
<td>10%</td>
<td>14%</td>
<td>54%</td>
<td>24%</td>
</tr>
<tr>
<td>Problem with a netbook insurance</td>
<td>17%</td>
<td>24%</td>
<td>11%</td>
<td>13%</td>
<td>15%</td>
<td>25%</td>
<td>17%</td>
</tr>
<tr>
<td>Theft of a netbook or notebook</td>
<td>11%</td>
<td>13%</td>
<td>8%</td>
<td>5%</td>
<td>13%</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>Average of all problems:</td>
<td>44%</td>
<td>46%</td>
<td>43%</td>
<td>38%</td>
<td>39%</td>
<td>51%</td>
<td>54%</td>
</tr>
</tbody>
</table>
Table 9. Teachers’ and students’ estimation on the impact of netbooks (a, b).

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Es</th>
<th>Tk</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupils are more independent in their learning (e.g., go over work again, find out more about things they are interested in)</td>
<td>71%</td>
<td>53%</td>
<td>70%</td>
<td>69%</td>
<td>77%</td>
<td>79%</td>
<td>81%</td>
</tr>
<tr>
<td>Pupils are more likely to revise/edit their work</td>
<td>56%</td>
<td>44%</td>
<td>28%</td>
<td>68%</td>
<td>56%</td>
<td>76%</td>
<td>67%</td>
</tr>
<tr>
<td>Pupils try harder in what they are learning</td>
<td>49%</td>
<td>14%</td>
<td>51%</td>
<td>50%</td>
<td>48%</td>
<td>74%</td>
<td>58%</td>
</tr>
<tr>
<td>Teachers’ average on independent learners:</td>
<td>59%</td>
<td>37%</td>
<td>50%</td>
<td>62%</td>
<td>60%</td>
<td>76%</td>
<td>69%</td>
</tr>
<tr>
<td>Schoolwork becoming more enjoyable</td>
<td>77%</td>
<td>71%</td>
<td>60%</td>
<td>86%</td>
<td>81%</td>
<td>83%</td>
<td>74%</td>
</tr>
<tr>
<td>Netbooks improve the atmosphere in class (e.g., pupils are more concentrated, there is less disruption)</td>
<td>59%</td>
<td>44%</td>
<td>56%</td>
<td>58%</td>
<td>62%</td>
<td>68%</td>
<td>72%</td>
</tr>
<tr>
<td>Teachers’ average on atmosphere and schoolwork:</td>
<td>68%</td>
<td>58%</td>
<td>58%</td>
<td>72%</td>
<td>72%</td>
<td>76%</td>
<td>73%</td>
</tr>
</tbody>
</table>

b) Students: % who agree with the statements

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Sp</th>
<th>Tr</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel more independent in my learning (e.g., go over work again, find out more about things I’m interested in)</td>
<td>56%</td>
<td>51%</td>
<td>41%</td>
<td>56%</td>
<td>58%</td>
<td>78%</td>
<td>68%</td>
</tr>
<tr>
<td>I am more likely to revise/edit my work</td>
<td>53%</td>
<td>34%</td>
<td>38%</td>
<td>56%</td>
<td>62%</td>
<td>81%</td>
<td>60%</td>
</tr>
<tr>
<td>I try harder in what I am learning</td>
<td>53%</td>
<td>30%</td>
<td>39%</td>
<td>63%</td>
<td>58%</td>
<td>80%</td>
<td>62%</td>
</tr>
<tr>
<td>Students’ average on independent learners:</td>
<td>54%</td>
<td>38%</td>
<td>39%</td>
<td>58%</td>
<td>59%</td>
<td>80%</td>
<td>63%</td>
</tr>
<tr>
<td>Schoolwork is more enjoyable</td>
<td>69%</td>
<td>66%</td>
<td>61%</td>
<td>77%</td>
<td>68%</td>
<td>84%</td>
<td>65%</td>
</tr>
<tr>
<td>It improves the atmosphere in class (e.g., students are more engaged, there is less disruption)</td>
<td>53%</td>
<td>45%</td>
<td>42%</td>
<td>54%</td>
<td>57%</td>
<td>67%</td>
<td>60%</td>
</tr>
<tr>
<td>Students’ average atmosphere and schoolwork:</td>
<td>61%</td>
<td>53%</td>
<td>52%</td>
<td>66%</td>
<td>63%</td>
<td>76%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Table 10. Diverse activities that teachers carried out to cooperate during the Netbook Pilot (a, b).

<table>
<thead>
<tr>
<th>Teachers’ co-operation during the Netbook Pilot</th>
<th>Type of activity</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Es</th>
<th>Tk</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have received support and examples from other teachers/colleagues</td>
<td>Co-ordinate</td>
<td>54%</td>
<td>49%</td>
<td>45%</td>
<td>48%</td>
<td>73%</td>
<td>55%</td>
<td>46%</td>
</tr>
<tr>
<td>Discuss and decide on the selection of teaching resources (e.g., textbooks, exercise books) that are suitable for netbooks</td>
<td>Co-ordinate</td>
<td>68%</td>
<td>58%</td>
<td>50%</td>
<td>75%</td>
<td>84%</td>
<td>71%</td>
<td>51%</td>
</tr>
<tr>
<td>Attend staff meetings to discuss the vision and mission of the school on netbooks</td>
<td>Co-ordinate</td>
<td>66%</td>
<td>67%</td>
<td>66%</td>
<td>71%</td>
<td>73%</td>
<td>61%</td>
<td>44%</td>
</tr>
<tr>
<td>Develop a school curriculum or part of it to make it more suitable for netbooks</td>
<td>Co-ordinate</td>
<td>66%</td>
<td>57%</td>
<td>43%</td>
<td>78%</td>
<td>76%</td>
<td>70%</td>
<td>65%</td>
</tr>
<tr>
<td>Exchange teaching materials for netbooks with colleagues</td>
<td>Co-ordinate</td>
<td>65%</td>
<td>39%</td>
<td>60%</td>
<td>73%</td>
<td>82%</td>
<td>66%</td>
<td>55%</td>
</tr>
<tr>
<td>Exchange and co-ordination for teaching</td>
<td>Co-ordinate</td>
<td>64%</td>
<td>54%</td>
<td>53%</td>
<td>69%</td>
<td>78%</td>
<td>65%</td>
<td>52%</td>
</tr>
<tr>
<td>a) Teachers’ average:</td>
<td>Co-ordinate</td>
<td>64%</td>
<td>54%</td>
<td>53%</td>
<td>69%</td>
<td>78%</td>
<td>65%</td>
<td>52%</td>
</tr>
<tr>
<td>to collaborate and prepare activities together with other netbook teachers in my school</td>
<td>Collaboration</td>
<td>47%</td>
<td>39%</td>
<td>38%</td>
<td>48%</td>
<td>48%</td>
<td>61%</td>
<td>33%</td>
</tr>
<tr>
<td>to collaborate and prepare activities together with other teachers in my school</td>
<td>Collaboration</td>
<td>35%</td>
<td>23%</td>
<td>34%</td>
<td>25%</td>
<td>43%</td>
<td>51%</td>
<td>26%</td>
</tr>
<tr>
<td>to collaborate and prepare activities together with other teachers at home online</td>
<td>Collaboration</td>
<td>23%</td>
<td>21%</td>
<td>19%</td>
<td>19%</td>
<td>19%</td>
<td>39%</td>
<td>13%</td>
</tr>
<tr>
<td>* to collaborate and prepare activities together with other netbook teachers in other schools in my country</td>
<td>Collaboration</td>
<td>12%</td>
<td>5%</td>
<td>5%</td>
<td>7%</td>
<td>19%</td>
<td>25%</td>
<td>4%</td>
</tr>
<tr>
<td>* Collaboration average country reports</td>
<td>Collaboration</td>
<td>29%</td>
<td>22%</td>
<td>24%</td>
<td>25%</td>
<td>32%</td>
<td>44%</td>
<td>19%</td>
</tr>
<tr>
<td>Teach jointly as a netbook team in the same class</td>
<td>Collaboration</td>
<td>42%</td>
<td>37%</td>
<td>41%</td>
<td>36%</td>
<td>48%</td>
<td>54%</td>
<td>19%</td>
</tr>
<tr>
<td>Discuss and coordinate homework practice across subjects</td>
<td>Collaboration</td>
<td>41%</td>
<td>21%</td>
<td>30%</td>
<td>35%</td>
<td>44%</td>
<td>70%</td>
<td>39%</td>
</tr>
<tr>
<td>Engage in joint activities across different classes and age groups (e.g., school projects, e-learning)</td>
<td>Collaboration</td>
<td>30%</td>
<td>15%</td>
<td>18%</td>
<td>26%</td>
<td>25%</td>
<td>61%</td>
<td>46%</td>
</tr>
<tr>
<td>Observe other teachers’ classes and provide feedback</td>
<td>Collaboration</td>
<td>25%</td>
<td>7%</td>
<td>10%</td>
<td>20%</td>
<td>17%</td>
<td>58%</td>
<td>51%</td>
</tr>
<tr>
<td>Professional collaboration</td>
<td>Collaboration</td>
<td>35%</td>
<td>23%</td>
<td>27%</td>
<td>30%</td>
<td>35%</td>
<td>56%</td>
<td>32%</td>
</tr>
<tr>
<td>b) Teachers’ average (Chart 8) * excluded because “out of school”</td>
<td>Collaboration</td>
<td>35%</td>
<td>23%</td>
<td>27%</td>
<td>30%</td>
<td>35%</td>
<td>56%</td>
<td>32%</td>
</tr>
</tbody>
</table>
Table 11. Teachers’ estimation on the impact of the netbook on learning.

<table>
<thead>
<tr>
<th>Teachers: % who strongly agree or agree with the statements</th>
<th>Pilot average</th>
<th>Fr</th>
<th>De</th>
<th>It</th>
<th>Sp</th>
<th>Tr</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupils being more motivated in school and learning</td>
<td>79%</td>
<td>71%</td>
<td>76%</td>
<td>82%</td>
<td>86%</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>Schoolwork becoming more enjoyable</td>
<td>77%</td>
<td>71%</td>
<td>60%</td>
<td>86%</td>
<td>81%</td>
<td>83%</td>
<td>74%</td>
</tr>
<tr>
<td>Netbooks improve the atmosphere in class (e.g. pupils are more concentrated, there is less disruption)</td>
<td>59%</td>
<td>44%</td>
<td>56%</td>
<td>58%</td>
<td>62%</td>
<td>68%</td>
<td>72%</td>
</tr>
<tr>
<td>Average on school atmosphere (2 above):</td>
<td>68%</td>
<td>58%</td>
<td>58%</td>
<td>72%</td>
<td>72%</td>
<td>70%</td>
<td>73%</td>
</tr>
<tr>
<td>Teacher-pupil collaboration</td>
<td>81%</td>
<td>73%</td>
<td>72%</td>
<td>90%</td>
<td>88%</td>
<td>86%</td>
<td>68%</td>
</tr>
<tr>
<td>Pupil-pupil collaboration</td>
<td>80%</td>
<td>72%</td>
<td>71%</td>
<td>88%</td>
<td>84%</td>
<td>87%</td>
<td>62%</td>
</tr>
<tr>
<td>Teacher-parent communication</td>
<td>37%</td>
<td>25%</td>
<td>18%</td>
<td>37%</td>
<td>42%</td>
<td>60%</td>
<td>26%</td>
</tr>
<tr>
<td>Average on collaboration aspects (3 above):</td>
<td>66%</td>
<td>57%</td>
<td>54%</td>
<td>72%</td>
<td>71%</td>
<td>78%</td>
<td>52%</td>
</tr>
<tr>
<td>Pupils are more independent in their learning (e.g., go over work again, find out more about things they are interested in)</td>
<td>71%</td>
<td>53%</td>
<td>70%</td>
<td>69%</td>
<td>77%</td>
<td>79%</td>
<td>81%</td>
</tr>
<tr>
<td>Pupils are more likely to revise/edit their work</td>
<td>56%</td>
<td>44%</td>
<td>28%</td>
<td>68%</td>
<td>56%</td>
<td>76%</td>
<td>67%</td>
</tr>
<tr>
<td>Pupils try harder in what they are learning</td>
<td>49%</td>
<td>14%</td>
<td>51%</td>
<td>50%</td>
<td>48%</td>
<td>74%</td>
<td>58%</td>
</tr>
<tr>
<td>Pupils understand more easily what they are learning</td>
<td>49%</td>
<td>26%</td>
<td>29%</td>
<td>65%</td>
<td>43%</td>
<td>70%</td>
<td>57%</td>
</tr>
<tr>
<td>Average on independent learner aspects (4 above):</td>
<td>56%</td>
<td>34%</td>
<td>45%</td>
<td>63%</td>
<td>56%</td>
<td>70%</td>
<td>66%</td>
</tr>
<tr>
<td>Pupils can learn at their own pace and time</td>
<td>77%</td>
<td>62%</td>
<td>77%</td>
<td>76%</td>
<td>81%</td>
<td>82%</td>
<td>77%</td>
</tr>
<tr>
<td>Pupils with good grades can excel further in their learning</td>
<td>64%</td>
<td>25%</td>
<td>70%</td>
<td>76%</td>
<td>68%</td>
<td>77%</td>
<td>55%</td>
</tr>
<tr>
<td>Pupils with average grades can excel further in their learning</td>
<td>59%</td>
<td>32%</td>
<td>60%</td>
<td>72%</td>
<td>53%</td>
<td>74%</td>
<td>54%</td>
</tr>
<tr>
<td>Pupils with special needs participate more in lessons</td>
<td>58%</td>
<td>51%</td>
<td>34%</td>
<td>71%</td>
<td>57%</td>
<td>69%</td>
<td>66%</td>
</tr>
<tr>
<td>Average on individualised learning (4 above, Chart 1)</td>
<td>65%</td>
<td>43%</td>
<td>60%</td>
<td>74%</td>
<td>65%</td>
<td>76%</td>
<td>63%</td>
</tr>
<tr>
<td>* Pupils at the risk of dropping-out re-engage with learning</td>
<td>50%</td>
<td>24%</td>
<td>69%</td>
<td>49%</td>
<td>35%</td>
<td>70%</td>
<td>52%</td>
</tr>
<tr>
<td>Average impact (country reports)</td>
<td>62%</td>
<td>39%</td>
<td>62%</td>
<td>69%</td>
<td>59%</td>
<td>74%</td>
<td>61%</td>
</tr>
<tr>
<td>My pupils take more responsibility for their work and the completion of their tasks</td>
<td>32%</td>
<td>9%</td>
<td>24%</td>
<td>31%</td>
<td>27%</td>
<td>69%</td>
<td>26%</td>
</tr>
<tr>
<td>Some change, but my pupils need to be reminded of deadlines and tasks</td>
<td>52%</td>
<td>52%</td>
<td>37%</td>
<td>61%</td>
<td>66%</td>
<td>42%</td>
<td>47%</td>
</tr>
<tr>
<td>No change, my pupils remain dependent on me to remind them to finish tasks</td>
<td>25%</td>
<td>48%</td>
<td>29%</td>
<td>12%</td>
<td>22%</td>
<td>18%</td>
<td>23%</td>
</tr>
<tr>
<td>My pupils take more responsibility for their equipment including netbooks and text books</td>
<td>30%</td>
<td>22%</td>
<td>39%</td>
<td>30%</td>
<td>26%</td>
<td>35%</td>
<td>17%</td>
</tr>
</tbody>
</table>
References


Introducing Netbook Pedagogies in Schools

Acknowledgements

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IGS Hannover-Linden
Kooperative Gesamtschule Moringen
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I.C. Birago
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I.C. San Vendemiano
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Introducing Netbook Pedagogies in schools

**Acer - European Schoolnet Educational Netbook Pilot**

Since January 2010 until the end of the school year 2011, the Acer-European Schoolnet Educational Netbook Pilot worked with 245 classes in secondary education in six European countries to help implement 1:1 pedagogies and to study the best ways to support schools and teachers in their endeavours. All in all, more than 7000 students and 1000 teachers used netbooks over the Netbook Pilot period. The Pilot explored how the introduction of netbooks and 1:1 pedagogy in schools can have an impact on the processes involved in teaching and learning, both inside and outside of school. 1:1 pedagogy highlights the fact that the learners have access to netbooks at all times, taking advantage of a blended learning approach alternating online and offline activities, as well as individual and collaborative ones.

Both Acer and European Schoolnet are glad to announce that the Netbook website and teachers’ online community (www.netbooks.eun.org) will continue to flourish even after the Netbook Pilot and will be open to any teacher interested in 1:1 pedagogy. With more than 900 members, close to 300 teacher-generated 1:1 pedagogical scenarios and a vibrant forum, the online community has proved to be indispensable for sharing good practices in netbook pedagogies.