

## Key Data on Information and Communication Technology in Schools in Europe 2004 Edition

Developing the potential of multimedia technology and the Internet for educational purposes is an essential component of European cooperation in education. Three years after publication of the report *Basic Indicators on the Incorporation of ICT into European Education Systems*, Eurydice is offering a fresh appraisal with 35 indicators.

In this edition, Eurydice information on the teaching of information and communication technology (ICT) and on teacher education is combined with empirical data collected in the international PISA and PIRLS surveys. This material helpfully sheds light on the level of computerisation, including Internet access, and on the use made of computer facilities – whether in terms of frequency or activities in the home or at school.

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### ***Widely varying levels of computerisation among countries or within individual countries***

In 2000, the level of school computerisation still appeared to vary widely from one country to the next. In most countries, the average ratio varies between 5 and 20 pupils per computer among 15-year-olds but it is over 40 in a few countries. Among the latter, Greece and Portugal have set themselves the objective of steadily lowering this ratio and the situation is changing rapidly. Everywhere, school Internet connections are always lower than the level of computerisation but are directly related to it.

Within a given country, the number of pupils per computer may vary considerably from one school to the next. This applies in particular to countries in which the level of school computerisation is relatively modest.

In a few countries in which the guidelines establish a maximum number of pupils per computer, there is very little disparity between schools. This applies to the Flemish Community of Belgium and the United Kingdom. By contrast, where the regulations advocate the installation of one special room with computer facilities per school irrespective of its size, small schools may be at an advantage, as in the case of Poland.

Both the development of school computerisation and the level of domestic computerisation are linked to GDP.

### ***Computerisation in two stages, first for staff and then pupils***

School computerisation occurs along fairly similar lines from one country to the next. In the initial stage, computer facilities are intended mainly for administrative and teaching staff. After that, they are made available to pupils.

In countries in which computerisation is less widespread, pupils may generally access computer facilities in special rooms for this purpose away from the classroom, whereas in schools in countries in which computerisation has reached a more advanced stage, the computers may be located both within classrooms and outside them (in a special room offering computer facilities or a multimedia library).

### ***Use of ICT to teach other subjects, especially in primary education***

ICT is part of the compulsory minimum curriculum of pupils virtually everywhere in Europe. In primary education, just seven countries (the Czech Republic, Italy, Latvia, Lithuania, Hungary, Slovakia and Bulgaria) have not included ICT in the compulsory curriculum. This situation is even more of an exception in secondary education.

In many countries, the amount of time set aside for ICT is flexible. Official recommendations on the approaches to be adopted are fairly similar from one country to the next. In primary education, ICT is used mainly as a tool for teaching other subjects. In secondary education and especially at upper secondary level, this approach is supplemented by the teaching of ICT as a subject in its own right.

Among the official aims of the curriculum, activities involving the use of software, information searches and communications networks for extending knowledge of various subjects are the most representative, irrespective of the level concerned in compulsory education.

### ***Children aged 9 or 10 have widespread access to a computer in the home***

Families generally make it easy for children aged 9 or 10 to access the home computer. This applies to all countries surveyed, irrespective of the level of home computerisation. The great majority of children in this age-group use computers (excluding consoles and portable equipment) to play games. The percentage of those who say they search for information and write is high however in several countries (Greece, France, Italy, Cyprus and the United Kingdom).

At primary school, fourth-year pupils say they do not use computers very often. Nearly half even consider that they use them never or almost never. Only in a few countries (in particular the United Kingdom and Iceland) do a high percentage of schoolchildren claim to use computers very regularly.

In most countries, when fourth-year primary school pupils work with ICT at school, this is mainly to write something or to search for information. These activities correspond fairly closely to the aims and recommendations in official curricula for primary education.

### ***At school, pupils in secondary education use computers more frequently than those in primary education***

Almost two-thirds of pupils aged 15 say that they use computers very regularly at school. Generally speaking, computers are used least frequently in countries in which the number of pupils per computer is high (with the exception of Bulgaria), although infrequent use is also reported by countries with a high level of computerisation (French Community of Belgium,

Germany and France), in which the majority of 15-year-old pupils say they never or almost never use computers at school. Limited computerisation does not therefore necessarily inhibit the satisfactory implementation of computer activities, and vice versa.

Although use of the Internet by 15-year-olds is not as frequent as their use of computers, general trends in both cases are much the same. Frequency of Internet use is especially high in five countries (Denmark, Austria, Finland, Sweden and Iceland).

***Training teachers for ICT: training institutions are granted considerable freedom in determining their curricular provision***

During their initial teacher education, teachers in primary and secondary education in most countries acquire at least basic expertise in the use of ICT for education purposes.

Irrespective of whether or not initial training for ICT is compulsory, institutions for teacher education are largely free to determine the content of this training and the amount of time devoted to it in the curriculum. A minimum number of hours is officially recommended in the French Community of Belgium, Spain, Lithuania, Luxembourg, Malta, Austria, Sweden and Iceland.

The acquisition or upgrading of ICT skills is encouraged in in-service teacher training. National programmes (of variable length but generally lasting at least two years) encourage this type of training for teachers at the primary and secondary levels of education.

***Specialist teachers of ICT in secondary education***

In secondary education, specialist teachers are generally responsible for lessons in ICT, regardless of the approach advocated in the curriculum. Only in Poland and Romania does this occur in primary education.

These specialists have in general received initial education lasting four or five years at university level. In many countries, fully qualified teachers are also able to extend their skills in this field and thereby acquire a specialist qualification.



## Background note

### Key Data on Information and Communication Technology in Schools in Europe 2004 Edition

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Information for which Eurydice is the source relate to the situation in 30 European countries in 2002/03.

The PISA 2000 international survey conducted under the auspices of the Organisation for Economic Cooperation and Development (OECD) in 32 countries, relates to the 1999/2000 reference year and covers 26 countries in the Eurydice Network.

The PIRLS international survey conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA) in 2001 relates to the 2000/01 school year and covers 19 countries in the Eurydice Network.

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