

# Education

9





## Introduction

Education, vocational training and lifelong learning play a vital role in the economic and social strategy of the European Union. The relaunched Lisbon process, implemented by the 'Education and training 2010' programme, cannot be completed without efficient use of resources, improvements in the quality of education and training systems and implementation of a coherent lifelong learning strategy at national level. Securing education and lifelong learning opportunities in every region and for every inhabitant, wherever they live, is one of the cornerstones of the national strategies to achieve this goal. Eurostat's regional statistics on enrolment in education, educational attainment and participation in lifelong learning make it possible to measure progress at regional level and monitor regions lagging behind.

Comparable regional data on enrolment in education from 1998 onwards are available from Eurostat's website, while data on educational attainment and on participation in lifelong learning are available for the period since 1999.

The Eurostat website contains region-by-region information on the total number of enrolments by level of education and sex, and by age and sex, plus indicators relating enrolments in education to the total population. Data on enrolments in education are generally available for the 15 'old' Member States for the period since 1998 and for the 12 'new' Member States plus Norway since 2000 or 2001. Information on the educational attainment of the population and on participation in lifelong learning is available for all the Member States and also for Norway.

## Students in tertiary education

'Tertiary education' means levels of education that are offered by universities, vocational universities, institutes of technology and other institutions that award academic degrees or professional certificates. Access to tertiary-level courses typically requires successful completion of an upper-secondary and/or post-secondary non-tertiary level programme.

Tertiary-level education can be classified on the basis of its purpose:

- ISCED <sup>(1)</sup> level 5A is, for the most part, theoretically based and is intended to provide adequate

qualifications for entry into advanced research programmes and professions with high skills requirements;

- ISCED level 5B is more practical, technical and employment oriented;
- ISCED level 6 (PhD-like studies) leads to an advanced research qualification.

Currently several goals and benchmarks for higher education have to be achieved in the EU. Amongst these, the most relevant aims are to increase the number of mathematics, science and technology graduates, to increase the number of Erasmus students, to raise more investment in higher education and, finally, to foster the mobility of students across Europe.

To give further pointers to the mobility of students, a tertiary education indicator is presented here. In 2008, the number of students in tertiary education in the EU-27 countries stood at nearly 19 million.

Map 9.1 shows the number of students who were enrolled in tertiary education (ISCED levels 5 and 6) in 2008 (2007/08 academic year) as a percentage of the corresponding regional population aged 20 to 24. This indicator is a function of the number of students in the region and of the number of residents aged 20 to 24 in the same region and gives an idea of how attractive the region is to tertiary students. Actually, since this indicator is based on data on the area where the students are studying, and not the area where they come from or live, it is likely that some of the students are not resident in the region where they are studying. Hence, regions which show high values for this indicator host big universities or other tertiary education institutions and, as a consequence, attract large numbers of students from outside the region.

Some of the factors that have to be explored when interpreting this indicator are related to the age-group structures of the population within regions and to the corresponding structures of the tertiary education system between regions. In spite of these limitations, the indicator gives a rough picture of the concentration or spread of tertiary education institutions across regions.

This indicator is high in regions such as Praha (Czech Republic), Wien (Austria), Lisboa (Portugal), București - Ilfov (Romania), Bratislavský kraj (Slovakia), Brussels, Brabant Wallon and Oost-Vlaanderen (Belgium), Zahodna Slovenija

<sup>(1)</sup> ISCED: International Standard Classification of Education.

(Slovenia), Hovedstaden (the region surrounding the capital København in Denmark), Övre Norrland (Sweden), Groningen (the Netherlands), Małopolskie (Poland), Közép-Magyarország (Hungary), Oslo og Akershus and Trøndelag (Norway), regions in the centre of Italy and most of Greece and Finland, because most of these regions are in fact around capital cities. Relatively few regions have a tertiary-level student population below 30 % of the 20- to 24-years age group.

Together with Map 9.1, Figure 9.1 gives an overview of the percentage of regions presenting different performance levels for this indicator. Regions showing 100 % of the indicator host big tertiary institutions and, as a consequence, attract large numbers of students from outside the region. As can be seen in this graph, when roughly 35 % of the regions have been considered, the proportion of the population aged 20 to 24 enrolled in tertiary education is about 60 %, whereas 20 % of regions have less than 40 % of this section of the population in tertiary education.

## Students aged 17 in education

Compulsory education, along with the age when compulsory education ends, varies greatly between the EU Member States. In most countries, compulsory education ends at the age of 15 or 16, which is typically the end of lower-secondary education. Moreover, by the age of 17 it is possible to have finished secondary education in some countries, whereas in others pupils might have just started upper-secondary level. In spite of this, at the age of 17 most young people in the European Union are still in education.

At the age of 17, young people are faced with the choice of whether to remain in education, go into training or look for a job. Even if compulsory education ends before 17, over the last decade young people have become more likely to continue with their education.

Map 9.2 depicts students aged 17 (at all levels of education) as a percentage of the corresponding age group in each region. The highest figures for this indicator are in Sweden, Finland, Poland and other regions spread out across many states in the north of Europe, the United Kingdom, Iceland and Denmark. Looking at the candidate countries, Greece, Portugal, parts of Spain and parts of Italy, the indicator shows that in these regions the percentage of 17-year-olds who are

still in education is lower than in others. Almost everywhere in Europe this indicator gives a result of more than 75 %. That means that, for one reason or another, the younger generation are still in the education system even after the compulsory schooling age.

## Participation of 4-year-olds in education

Learning begins at birth. The period from birth to the start of primary education is a critical formative stage for the growth and development of children. The learning outcomes and the knowledge and skills acquired during primary education are stronger when children learn and develop appropriately in the years preceding regular schooling.

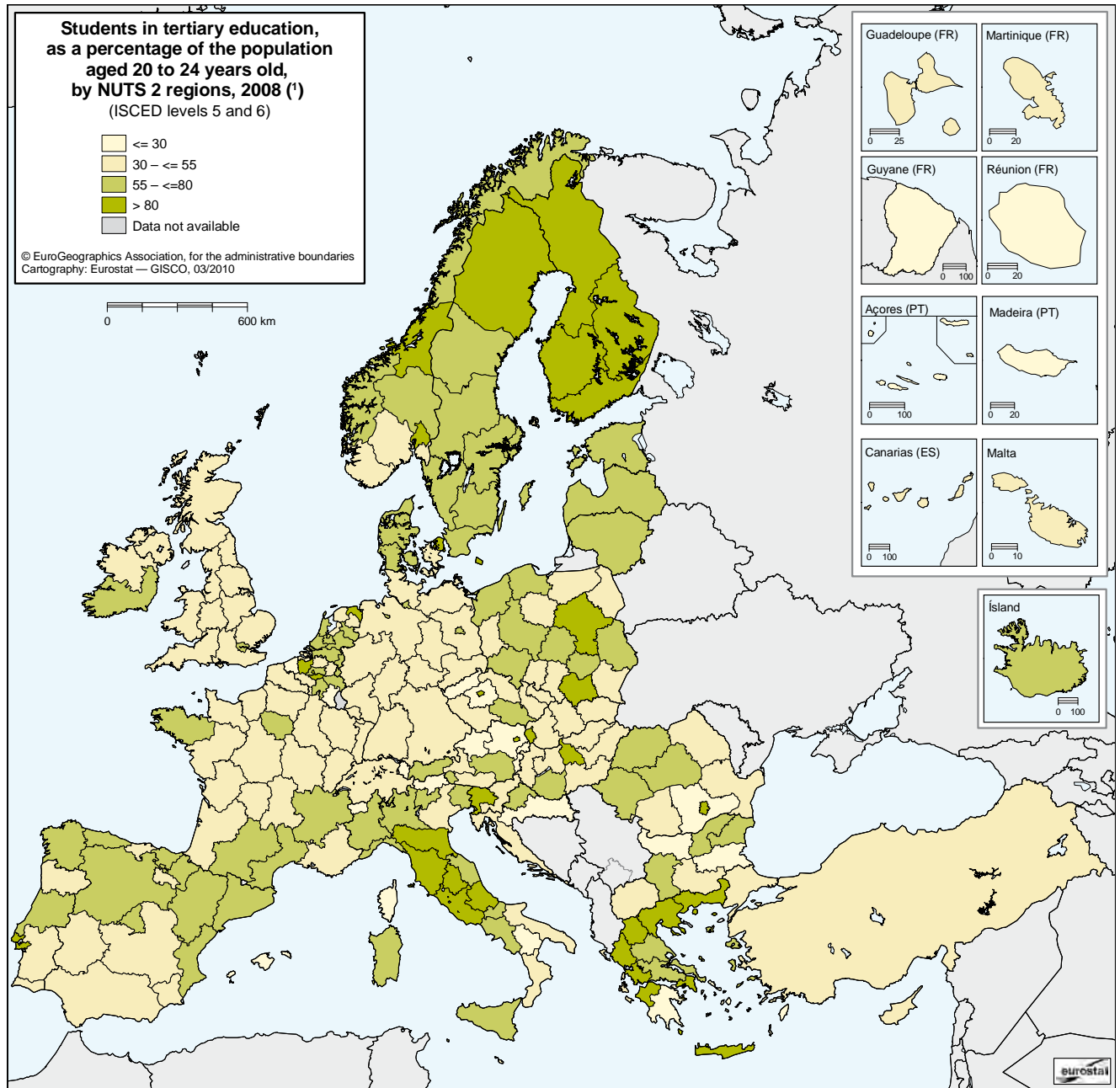
The purpose of pre-primary education is to prepare children physically, emotionally, socially and mentally to enter grade 1 of primary school, giving them the ability and skills to enter the first level of the education system. This preparation is considered the foundation for further psychological development.

To bear out this theory, in December 2008 the European Commission proposed a new benchmark, with the aim that 90 % of 4-year-olds should participate in pre-primary education by 2020. The aim of this proposal is to underpin progress towards the target set at the 2002 Barcelona summit of increasing participation in pre-primary education to 90 % of all children between 3 years of age and the beginning of compulsory education.

The indicator shown here reflects participation in early childhood education by NUTS 2 region, by measuring the percentage of 4-year-olds who are in either pre-primary or primary school. By far the majority of 4-year-olds attend pre-primary school (non-compulsory). A 4-year-old child can be enrolled either in pre-primary or in primary school. The data highlight that most 4-year-olds attend pre-primary school. Ireland and the United Kingdom are the only countries where a significant proportion of 4-year-olds are in primary education.

At the age of 4 most children in the European Union are therefore in pre-primary education, which is generally available from at least 3 to 4 years of age in the EU Member States. Enrolment

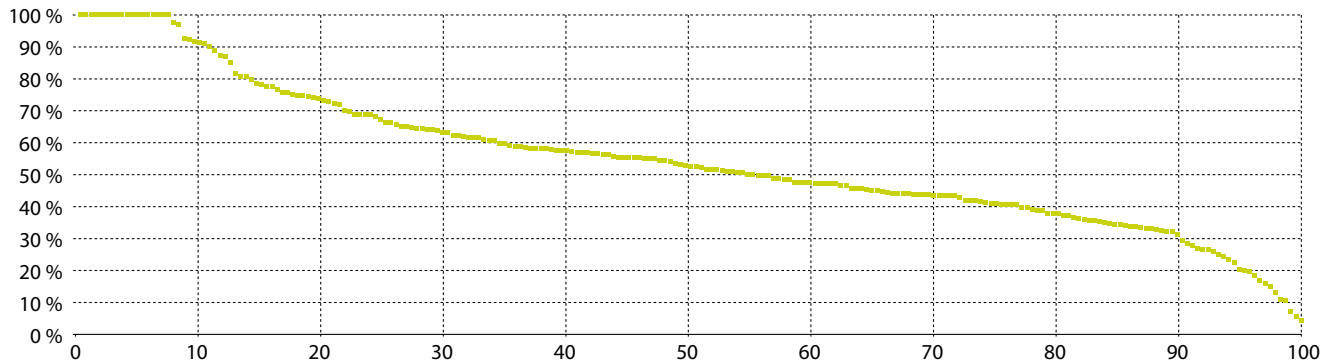
**Map 9.1:** Students in tertiary education, as a percentage of the population aged 20 to 24 years old, by NUTS 2 regions, 2008 <sup>(1)</sup> (ISCED levels 5 and 6)



<sup>(1)</sup> Data covers enrolments at regional level in school year 2007/08; Malta, 2007; Turkey and Switzerland, national level; Germany and United Kingdom, by NUTS 1 regions.

Source: Eurostat (tgs00094).

**Figure 9.1:** Students in tertiary education, as a percentage of the population aged 20 to 24 years old, by NUTS 2 regions, 2008 (1)  
(ISCED levels 5 and 6)



(1) Data covers enrolments at regional level in school year 2007/08; Malta, 2007; Turkey and Switzerland, national level; Germany and United Kingdom, by NUTS 1 regions.

Source: Eurostat (tgs00094).

in pre-primary education is almost always voluntary. Nevertheless, many countries have full participation rates.

As can be seen from Map 9.3, in countries such as Belgium, Denmark, France, Germany, Iceland, Italy, Luxembourg, Malta, the Netherlands, Norway and Spain almost all 4-year-olds are in education. By contrast, in Croatia, Greece, Ireland, the former Yugoslav Republic of Macedonia, Poland, Switzerland, Turkey and in most regions of Finland fewer than 50 % of 4-year-olds are enrolled.

## Pupils in primary or lower-secondary education

In most European countries primary education (ISCED level 1) is the first stage of compulsory education. It is preceded by pre-school or nursery education and is followed by secondary education. The major goals of primary education are to attain basic literacy and numeracy and to lay the foundations in science, mathematics, history, geography and other subjects.

Lower-secondary education (ISCED level 2) generally continues the basic programmes from primary level, although teaching is typically more subject-focused and often given by more specialised teachers who give classes in their field. Lower-secondary education can be 'terminal' (i.e. prepare students directly for working life) and/or 'preparatory' (i.e. prepare students for upper-secondary education). This level usually consists of two to six years of schooling.

Map 9.4 shows the number of pupils in primary and lower-secondary education (ISCED levels 1 and 2) as a percentage of the total population at regional level.

The highest rates are in regions such as the Départements d'outre-mer (France), Madeira (Portugal), Flevoland (the Netherlands), Ciudad Autónoma de Melilla and Ciudad Autónoma de Ceuta (Spain), Prov. Luxembourg (Belgium), Norway, Ireland, Malta, Turkey and Iceland. It must be pointed out that this indicator depends strictly on the age structure of the population. Actually, the higher the percentage of young population, the higher the number of pupils concerned. In fact, primary and lower-secondary education are compulsory almost everywhere in Europe. Consequently, roughly 100 % of the relevant population are in education.

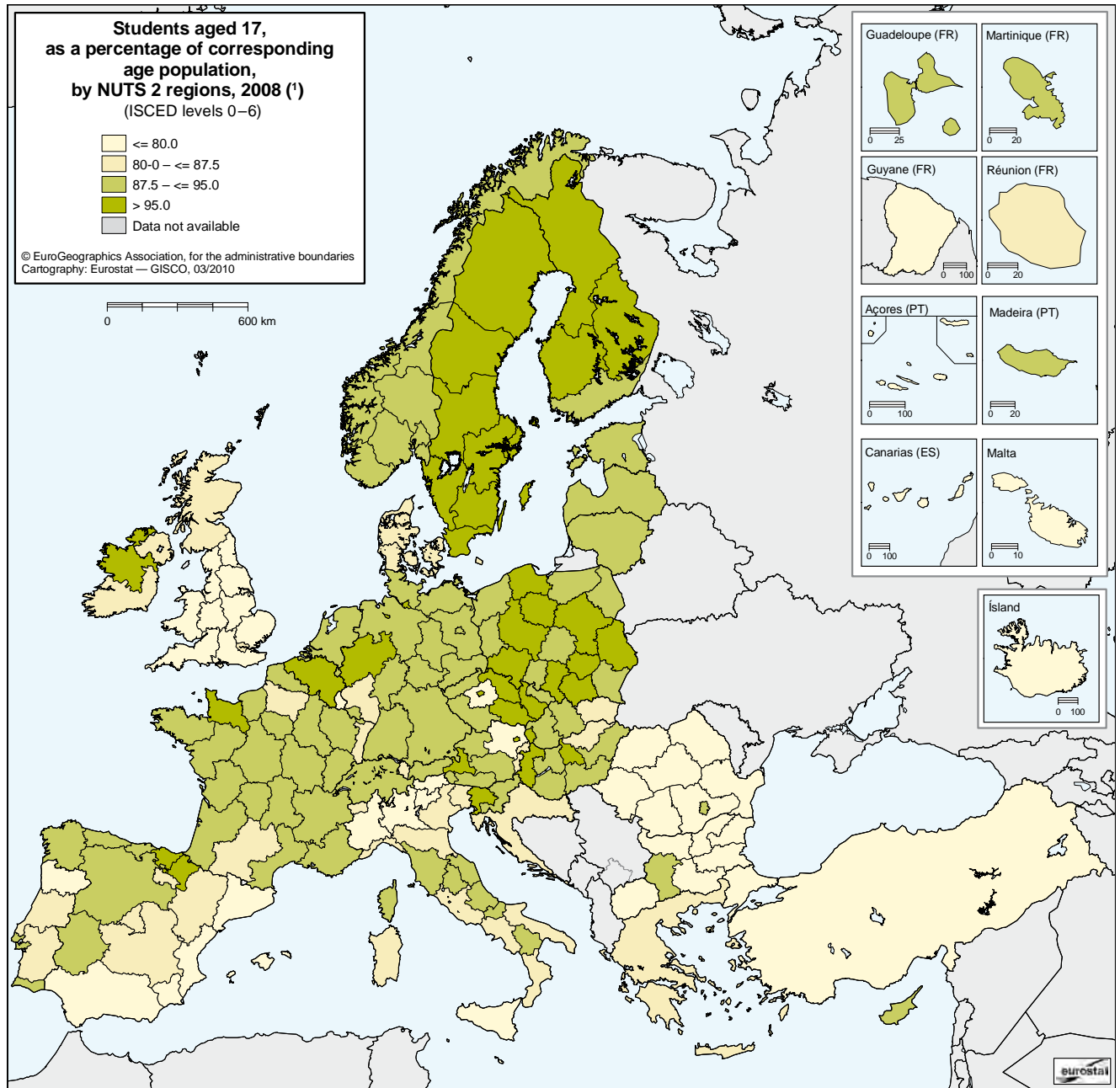
To compare regions from a different perspective and provide another representation of the phenomena, Figure 9.2 presents the top 10 and bottom 10 regions where the indicator displayed in Map 9.4 has the highest and the lowest values.

## Tertiary educational attainment

The proportion of the population aged 25 to 64 who have successfully completed university or similar (tertiary-level) education is shown in Map 9.5. It displays a similar pattern to Map 9.1. In most countries the highest proportions of tertiary-level attainment are found in the same regions as the students in tertiary education, i.e. where both the tertiary education



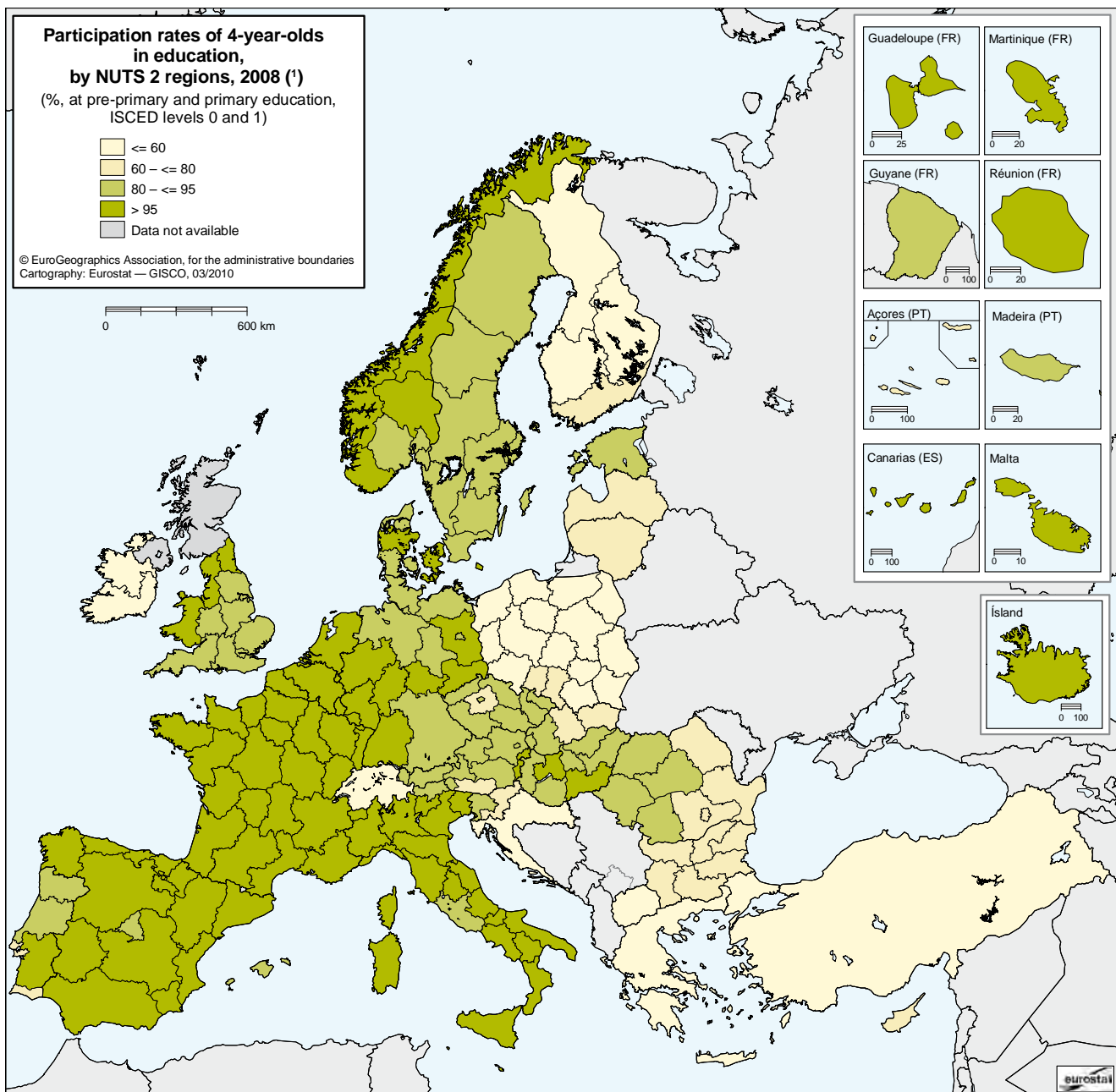
**Map 9.2:** Students aged 17, as a percentage of corresponding age population, by NUTS 2 regions, 2008 <sup>(1)</sup>  
(ISCED levels 0–6)



<sup>(1)</sup> Malta, 2007; Belgium, Greece, Netherlands, Croatia, Turkey and Switzerland, national level; Germany and United Kingdom, by NUTS 1 regions.

Source: Eurostat (tgs00091).

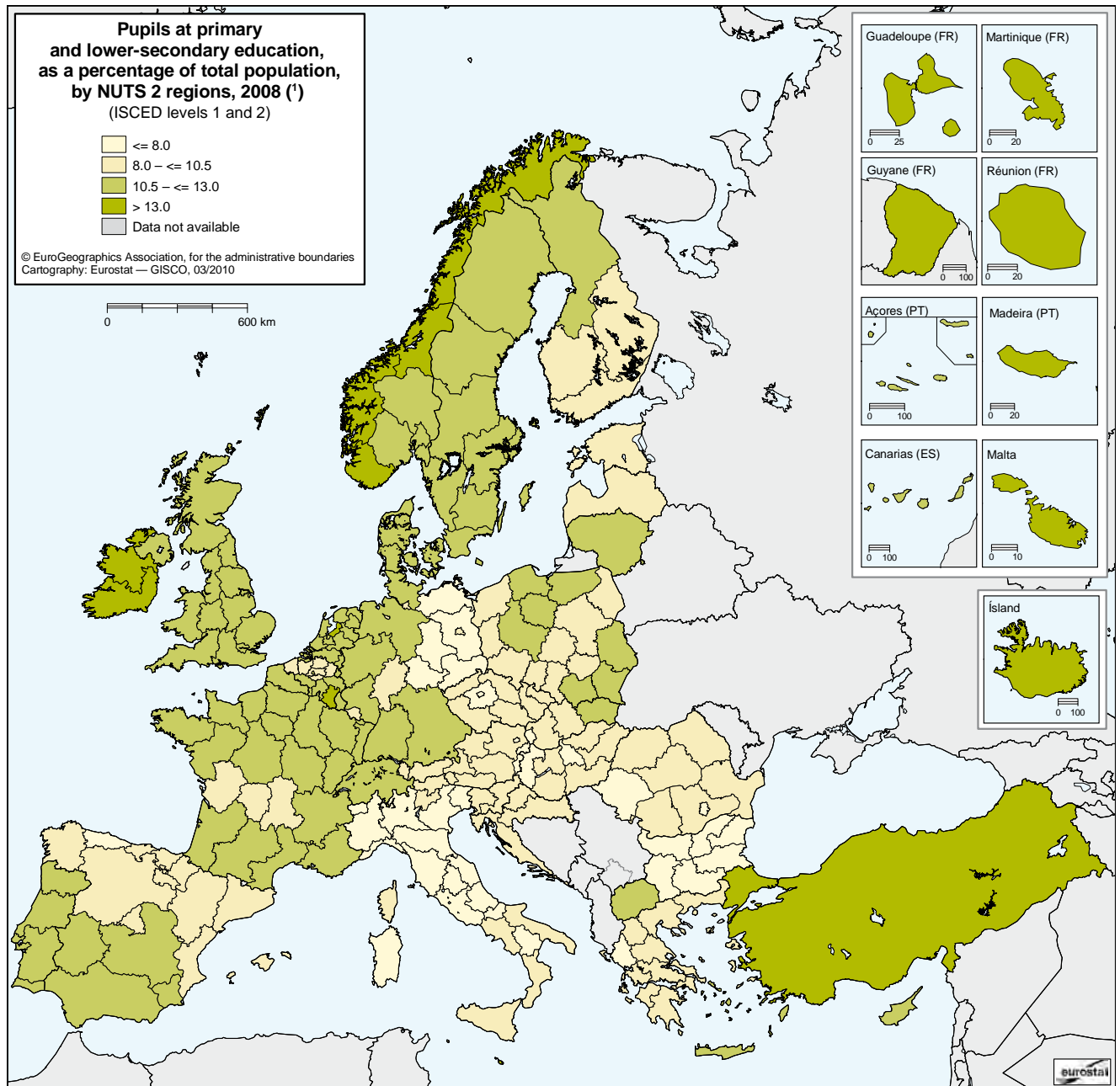
**Map 9.3:** Participation rates of 4-year-olds in education, by NUTS 2 regions, 2008 <sup>(1)</sup>  
 (% at pre-primary and primary education, ISCED levels 0 and 1)



<sup>(1)</sup> United Kingdom and Malta, 2007; Belgium, Greece, Netherlands, Croatia, Turkey and Switzerland, national level; Germany and United Kingdom, by NUTS 1 regions.

Source: Eurostat ([tgs00092](https://ec.europa.eu/eurostat/tgm/table.do?tab=table)).

**Map 9.4:** Pupils at primary and lower-secondary education, as a percentage of total population, by NUTS 2 regions, 2008 <sup>(1)</sup>  
(ISCED levels 1 and 2)

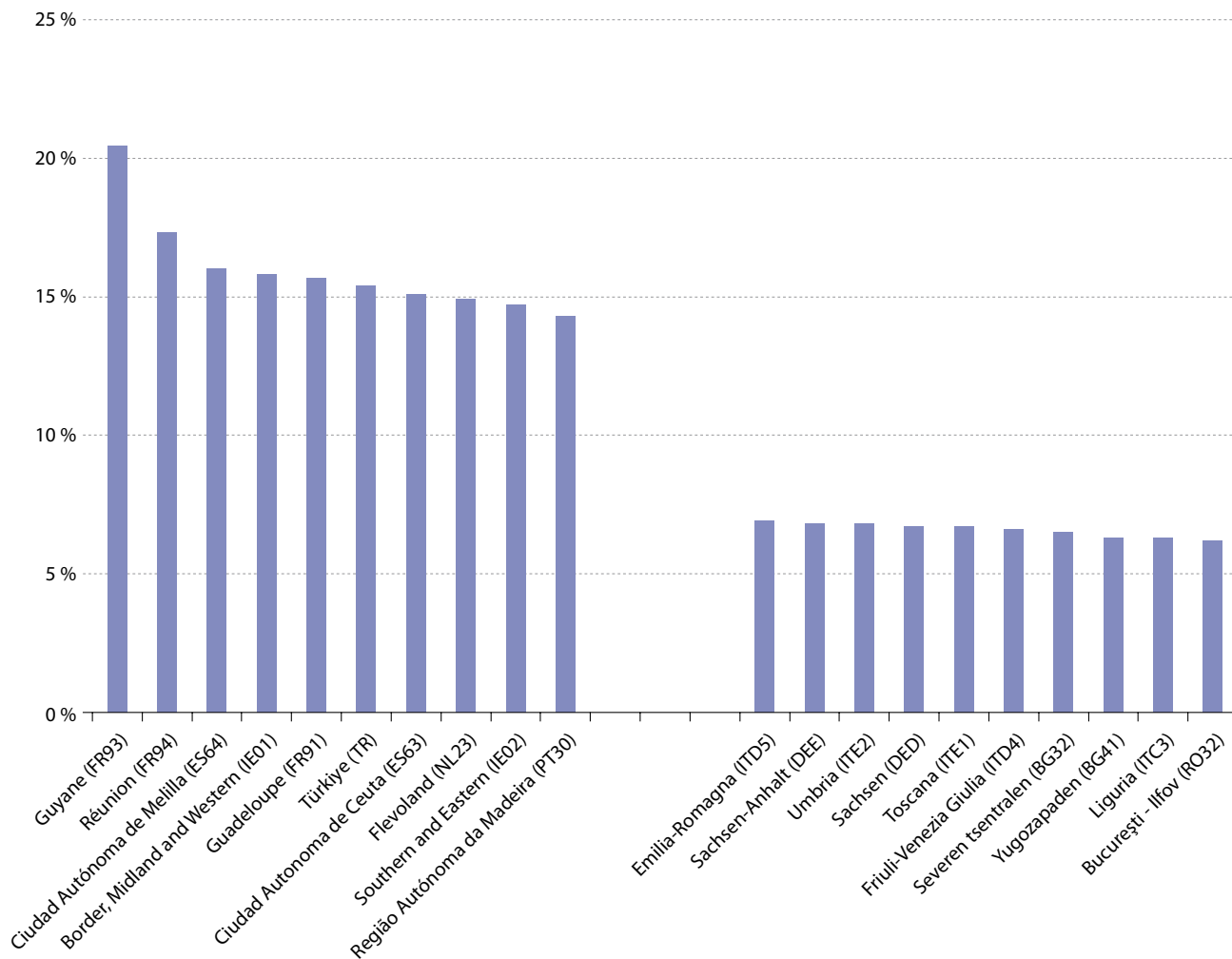


<sup>(1)</sup> Malta, 2007; Turkey and Switzerland, national level; Germany and United Kingdom, by NUTS 1 regions.

Source: Eurostat (tgs00079).



**Figure 9.2:** Pupils at primary and lower-secondary education, as a percentage of total population, top 10 regions and bottom 10 regions, by NUTS 2 regions, 2008 <sup>(1)</sup>  
(ISCED levels 1 and 2)



■ Pupils at primary and lower-secondary education as a percentage of total population

<sup>(1)</sup> Malta, 2007; Turkey and Switzerland, national level; Germany and United Kingdom, by NUTS 1 regions.

Source: Eurostat ([tgs00079](https://ec.europa.eu/eurostat/tgm/table.do?tab=table)).



institutions and the largest enterprises and institutions and their suppliers are located. The demographic profile of a region also has some influence on educational attainment, as younger generations tend to achieve higher levels than older generations. In 2008 only 26 regions in the EU recorded a proportion of persons with higher education above 35 %. These include large cities such as Brussels, London, Paris, Helsinki, Stockholm and Madrid plus Utrecht in the Netherlands. Oslo (Norway) and Geneva and Zürich (Switzerland) also fall into this category. In EU Member States such as Ireland, Sweden, Finland, the Netherlands, Belgium and Germany educational attainment levels are generally high across the whole country. The regions with the lowest percentages of people with tertiary education are largely concentrated in the rural parts of nine EU countries, in marked contrast to their larger cities. This is the case in Portugal and Romania in particular, and also in Croatia, Turkey and, to a lesser extent, in Bulgaria, the Czech Republic, Greece, Italy, Hungary, Poland and Slovakia. This also applies to some islands such as Sardegna and Sicilia (Italy), Açores and Madeira (Portugal) and Malta.

### Lifelong learning

Continuously refreshing the skills of the labour force by means of lifelong learning has repeatedly been underlined in EU policies following up the Lisbon objectives. This is reflected in the EU's 'Education and training 2010' programme and in the European employment strategy, which emphasises the need for comprehensive lifelong learning strategies to keep workers continuously adaptable and employable. Adult learning can be measured in the Labour Force Survey by specific

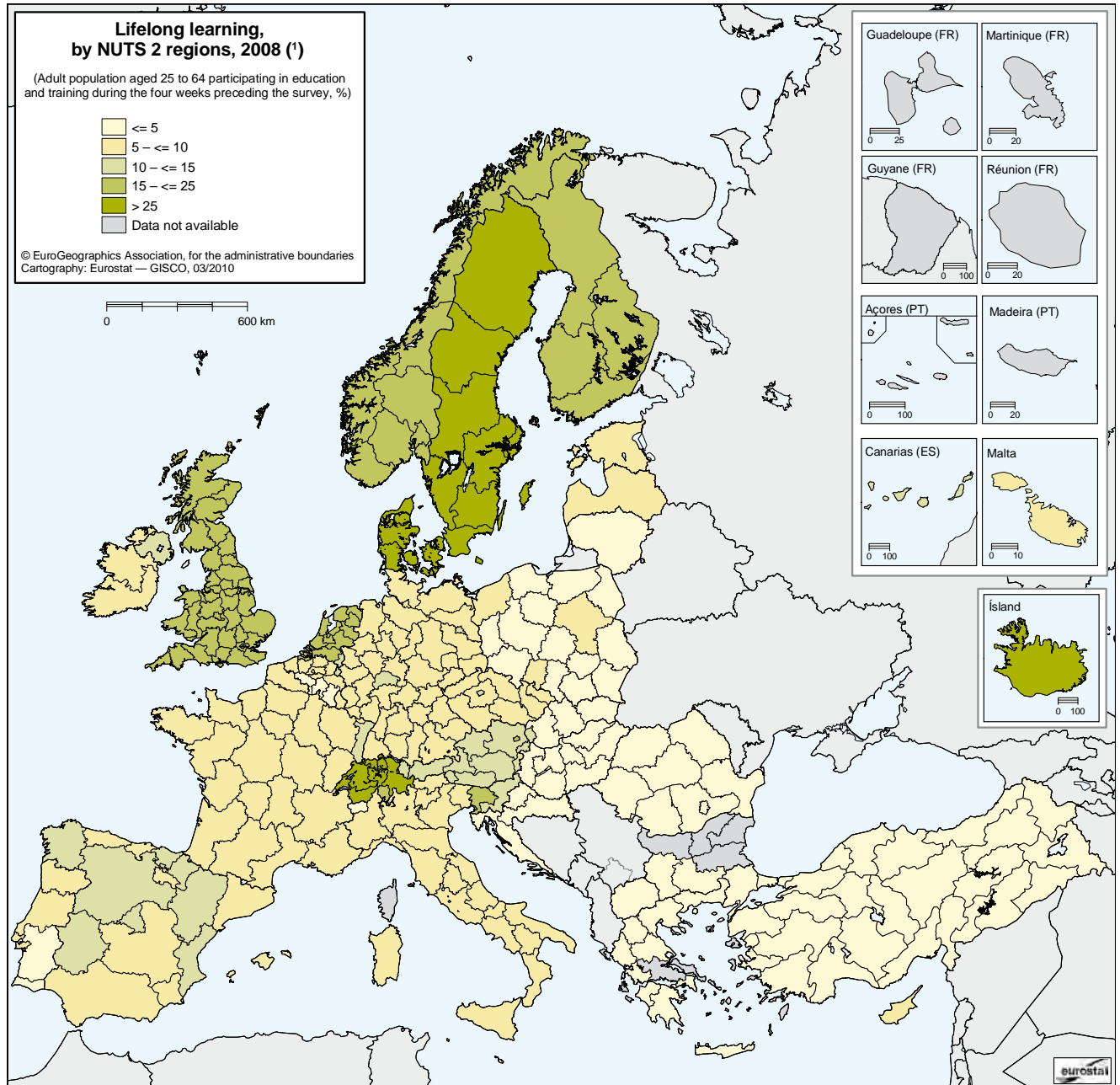
questions on participation in education or training activities during the four weeks preceding the survey. The data concern the 25–64 age group for all education or vocational training, whether or not relevant to the participants' current or future employment. As Map 9.6 shows, participation in education and training shows a largely national profile. In fact, this is the education indicator showing the smallest regional variation compared with the others discussed earlier in this chapter. Participation is high in every region of Denmark, the Netherlands, Slovenia, Finland, Sweden and the United Kingdom and also in Iceland, Norway and Switzerland. Within countries, the highest rates of participation in education and training are often found around the largest cities, which are usually also the regions with the highest levels of educational attainment (see previous section) and where the range of education and training offered is widest and continuing vocational training activities are most frequent (e.g. in large enterprises). On the other hand, EU Member States on the fringes of the continent, such as Greece, Hungary, Malta, Poland, Portugal, Romania and Slovakia, generally have low participation rates in education and training for the 25–64 age group, as do Croatia and Turkey.

### Conclusion

The examples given above are intended merely to highlight a few of the many possible ways of analysing education and lifelong learning in the regions of the EU and should not be considered a detailed analysis. However, Eurostat hopes that they will encourage readers to probe deeper into all the data on education available free of charge on the Eurostat website and to make many further interesting discoveries.



**Map 9.6: Lifelong learning, by NUTS 2 regions, 2008 <sup>(1)</sup>**  
 (% of the adult population aged 25 to 64 participating in education and training during the four weeks preceding the survey)



<sup>(1)</sup> Yuzhen tsentralen (BG42), Dytiki Makedonia (GR13), Peloponnisos (GR25), Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Valle d'Aosta/Vallée d'Aoste (ITC2), Åland (FI20) and Croatia data lack reliability due to small sample size; Portugal and Sweden, provisional data.

Source: Eurostat ([trng\\_lfse04](#)).

## Methodological notes

The maps are presented at NUTS 2 level, except the educational enrolment indicators for Germany and the United Kingdom, where data are available at NUTS 1 level only. In Croatia, Switzerland and Turkey no data on enrolments by age are available at regional level. Consequently, only national figures have been shown for these countries.

As the structure of education systems varies widely from one country to another, a framework for assembling, compiling and presenting both national and international education statistics and indicators is a prerequisite for international comparability. The International Standard Classification of Education (ISCED) provides the basic classification for collecting data on education. ISCED-97, the current version of the classification introduced in 1997, is built to classify each educational programme by field of education and by level.

ISCED-97 presents standard concepts, definitions and classifications. A full description of ISCED-97 is available on the Unesco Institute of Statistics website ([http://www.uis.unesco.org/ev.php?ID=3813\\_201&ID2=DO\\_TOPIC](http://www.uis.unesco.org/ev.php?ID=3813_201&ID2=DO_TOPIC)).

Qualitative information about school systems in the EU Member States is organised and disseminated by Eurydice (<http://www.eurydice.org>), for example on compulsory school attendance ages and numerous issues relating to organisation of school life in the Member States (decision-making, curricula, school hours, etc.).

The statistics on enrolments in education include all regular education programmes and all adult education with content similar to regular education programmes or leading to qualifications similar to the corresponding regular programmes. Apprenticeship programmes are included, except those which are entirely work-based and which are not supervised by any formal education authority. The data sources for Maps 9.1 to 9.4 are two specific Eurostat tables which form part of the 'UOE' (UIS-UNESCO, OECD and Eurostat) data collection on education systems. Information about the UOE data collection can be found at:

[http://circa.europa.eu/Public/irc/dsis/edtcslibrary?l=/public/unesco\\_collection&vm=detailed&sb=Title](http://circa.europa.eu/Public/irc/dsis/edtcslibrary?l=/public/unesco_collection&vm=detailed&sb=Title).

The statistics on educational attainment and on participation in lifelong learning are based on the EU Labour Force Survey (LFS), which is a quarterly sample survey. The indicators refer to the annual average of the quarterly data for 2007. The educational attainment level reported is based on ISCED-97. Lifelong learning includes participation in any kind of education and training activities during the four weeks prior to the survey.