Education at a Glance

OECD Indicators 2002

Annex 3: Sources, methods and technical notes

CHAPTER A: THE OUTPUT OF EDUCATIONAL INSTITUTIONS AND THE IMPACT OF LEARNING

INDICATOR A1: Current upper secondary graduation rates and attainment of the adult population

Table A1.1

Methodology

In order to calculate gross graduation rates, countries identified the age at which graduation typically occurs. The graduates themselves, however, could be of any age. To estimate gross graduation rates, the number of graduates is divided by the population at the typical graduation age (Annex 1). In many countries, defining a typical age of graduation is difficult because ages of graduates vary. Typical ages of graduation are shown in Annex 1.

The ***unduplicated count of all ISCED 3 graduates*** gives the number of persons who graduate in the reference period from any ISCED 3 programme **for the first time**, i.e., students who have not obtained an ISCED 3 (A, B or C) qualification in **previous** reference periods. For example, students who graduated from ISCED 3A programmes in the period of reference but obtained a short ISCED 3C graduation in an earlier year should (correctly) be reported as ISCED 3A graduates, but must be excluded from the unduplicated count of graduates in column 2 of Table C2.2. Similar cases may occur in the reporting of vocational and general programmes.

Notes on specific countries

Czech Republic: The low upper secondary graduation rate is due to a change in lower secondary rules in 1995/6. It became mandatory to complete lower secondary education in lower secondary schools (previously students were able to complete lower secondary education in upper secondary schools).

Luxembourg: A significant proportion of the youth cohort study in neighbouring countries at the ISCED 3 level.

Spain: The length of secondary programmes was recently extended, therefore upper secondary graduation rates are lower in 2000.

Turkey: Open education faculties are excluded.

Table A1.3

Methodology

Please see notes for Table A1.1.

INDICATOR A2: Current tertiary graduation and survival rates and attainment of the adult population

Table A2.1

Methodology

- **Calculation of the country mean for medium and long tertiary-type A programmes**

Countries which included the graduates of medium tertiary-type A programmes among the graduates of long programmes (*x*-code for short programmes) are counted as zero in the calculation of the country mean for medium programmes. In a similar manner, the countries using an *x*-code for long programmes, caused by inclusion of long programmes in the category for short programmes, are counted as zero in the country average for long programmes. This is necessary in order to ensure that the country averages for short programmes and long programmes add up to the correct country average for all first-stage university programmes.

- **Duration categories**

Tertiary-type A programmes can be sub-classified by the theoretical cumulative duration of programmes. For initial programmes at tertiary level, the cumulative theoretical duration is simply the theoretical full-time equivalent duration of those programmes from the beginning of Level 5. For second programmes, cumulative duration is calculated by adding the minimum entrance requirements of the programme *(i.e,.* full-time equivalent years of prerequisite tertiary education) to the full-time equivalent duration of the programme. For degrees or qualifications where the full-time equivalent duration is unknown *(i.e.*, courses of study designed explicitly for flexible or part-time study), cumulative duration is calculated on the basis of the duration of more traditional degree or qualification programmes with a similar level of educational content. The following duration categories are included in ISCED-97:

- Short: 2 to less than 3 years.
- Medium: 3 to less than 5 years.
- Long: 5 to 6 years.
- Very long: more than 6 years.

As “short” programmes would not meet the minimum duration requirement for classification at ISCED 5A, this category is only appropriate for intermediate programmes in the national qualification and degree structure (see below). That is, programmes of less than three years’ duration must be a component or a stage of a longer programme in order to be classified at level 5A. Individuals who complete these short programmes would not be counted as 5A graduates, however.

Typical ages of graduation are shown in Annex 1.

- **Notes on specific countries**

Czech Republic: All Bachelor's programmes are now classified as ISCED5A (according to Czech law), hence the increase of ISCED 5A graduates.

Finland: ISCED 5B programmes are being abolished, hence the increase of ISCED 5A graduates.

Iceland: There is an increase in the number of ISCED 5A graduates mainly due to reclassification of certain education programmes.

- **Table A2.2**

- **Notes on specific countries**

Australia and the United States: The survival rates calculated using the standard OECD methodology are significantly higher than those calculated in national studies.

Belgium (Flemish Community): Social advancement education is not included.

France: Does not include all tertiary graduates included in Table A2.1, only those where new entrants data are available.

United Kingdom: Excludes foreign students.

INDICATOR A3: Educational attainment of the population and the labour force

- **General notes**

Methodology

The most important change between ISCED-97 and ISCED-76 is the introduction of a multi-dimensional classification framework, allowing for the alignment of the educational content of programmes from different countries using multiple classification criteria (table 1). These dimensions include: 1) the type of subsequent education or destination to which the programme leads; 2) the programme orientation (whether it be general education or pre-vocational education or vocational

education); 3) the programme duration (for the ISCED Levels 3, 4 and 5, where programmes that vary widely in duration exist); and 4) position in the national degree and qualification structure. In ISCED-76, there was no such provision. For detailed notes see glossary and the OECD publication *Classifying Educational Programmes, Manual for ISCED-97 Implementation in OECD Countries, Edition 1999.*

Table 1 in annex3-A3.xls "Description of ISCED-97 levels" Education at a Glance 2002 - Annex3 - Chapter A - Table 1. Description of ISCED-97 levels, classification criteria, and sub-categories (xls, 96 Ko, English) Edit

Interpretation

In order to classify national educational attainment levels straddling two or more ISCED-97 levels, a simple rule is used consisting of attributing the programme to ISCED-97 level where most of the national educational activities are concentrated.

Table 2 comprises for each level of ISCED-97 the national programmes that are included in the respective indicators.

Annex3 - Chapter A - Table 2: Standardised presentation of national ISCED-97 mappings

Sources

Annex3 – Chapter A – Table 3: Sources

- **Notes on specific countries**

France: There is a clear distinction in France between the ISCED 3C short level (National level V, first level of qualification equivalent to CAP-BEP) and the higher levels which group together 3C long, 3B and 3A programmes (national level IV, second level of qualification, the general, technological, and professional Baccalauréats). For France therefore, students who have successfully completed secondary education and those who have a level of qualification corresponding to a short ISCED 3C programme are considered to have completed the ISCED3 level. Intermediate ISCED 5A programmes (5AI, duration of 2 years) are grouped with 5B, according to the comparable duration of the programmes (see Table above).

Netherlands: In 1999 data, ISCED 4 programs were included in ISCED 3 programs (incorrectly included in 5A/6 in Education at a Glance 2001). In 2000 data, ISCED 4 programs are submitted as a separate category. In 2000 data, ISCED 3C short data are included in ISCED 3C data, due to problems with the coding of 3C short programs - especially with the distinction of longer and shorter programs as highest level attained. A reliable estimate of the proportion of ISCED 3C short programs that meet the requirement for an upper secondary level attainment at ISCED 3 is not available at the moment.

United Kingdom: United Kingdom attainment data at upper secondary level (ISCED 3) include a sizeable proportion of persons (about 7 per cent of the population) whose highest level of attainment will in general have been reached at age 16. Although the programmes which they have completed do not formally satisfy the duration criterion for the completion of ISCED level 3, they can lead to a qualification (5 A-C grades in GCSEs) that the United Kingdom considers to be at the same attainment

level as that conferred by completion of a number of programmes which do satisfy the ISCED criterion. In other words, the usual ISCED classification criteria have been relaxed for this group, for reasons of consistency with the national qualification structure.

United Sates: Intermediate ISCED 5A programmes (5AI, duration of 2 years) are grouped with 5B, according to the comparable duration of the programmes (see Table above).

INDICATOR A4: Graduates by field of study

Classification

The fields of education used follow the revised ISCED classification by field of education. For definitions and instructions refer to the ISCED Classification (UNESCO, 1997). The classification is in accordance with the fields of training defined in the *Fields of Training – Manual* (EUROSTAT, 1999).

■ Notes on specific countries

Finland: ISCED 5B programmes are being abolished.

Indicators A5-A7 and Indicators A9-A10

Indicators A5-A7 and A9-A10 are derived from the PISA 2000 assessment of knowledge and skills, undertaken by the OECD in 2000. For further information see also *Knowledge and Skills for Life – First results from PISA 2000* (OECD, 2001).

■ The PISA concept of "yield" and the definition of the PISA target population

PISA 2000 provides an assessment of the cumulative yield of education and learning at a point at which most young adults are still enrolled in initial education.

A major challenge for an international survey is to operationalise such a concept in ways that guarantee the international comparability of national target populations.

Differences between countries in the nature and extent of pre-primary education and care, the age of entry to formal schooling, and the institutional structure of educational systems do not allow the definition of internationally comparable grade levels of schooling. Consequently, international comparisons of educational performance typically define their populations with reference to a target age. Some previous international assessments have defined their target population on the basis of the grade level that provide maximum coverage of a particular age cohort. A disadvantage of this approach is that slight variations in the age distribution of students across grade levels often lead to the selection of different target grades in different countries, or between education systems within countries, raising serious questions about the comparability of results across, and at times within, countries. In addition, because not all students of the desired age are usually represented in grade-based samples, there may be a more serious potential bias in the results if the unrepresented students

are typically enrolled in the next higher grade in some countries and the next lower grade in others. This would exclude students with potentially higher levels of performance in the former countries and students with potentially lower levels of performance in the latter.

In order to address this problem, PISA uses an age-based definition for its target population, *i.e.* a definition that is not tied to the institutional structures of national education systems: PISA assessed students who were aged between 15 years and 3 (complete) months and 16 years and 2 (complete) months at the beginning of the assessment period and who were enrolled in an educational institution, regardless of the grade levels or type of institution in which they were enrolled, and regardless of whether they were in full-time or part-time education (15-year-olds enrolled in Grade 6 or lower were excluded from PISA but, among the countries participating in PISA 2000, such students only exist in significant numbers in Brazil). Educational institutions are generally referred to as ***schools*** in this publication, although some educational institutions (in particular some types of vocational education establishments) may not be termed schools in certain countries. As expected from this definition, the average age of students across OECD countries was 15 years and 8 months years, a value which varied by less than 0.2 years between participating countries).

As a result of this population definition, PISA 2000 makes statements about the knowledge and skills of a group of individuals who were born within a comparable reference period, but who may have undergone different educational experiences both within and outside schools. In PISA, these knowledge and skills are referred to as the ***yield*** of education at an age that is common across countries. Depending on countries' policies on school entry and promotion, these students may be distributed over a narrower or a wider range of grades. Furthermore, in some countries, students in PISA's target population are split between different education systems, tracks or streams.

If a country's scale scores in reading, scientific or mathematical literacy are significantly higher than those in another country, it cannot automatically be inferred that the schools or particular parts of the education system in the first country are more effective than those in the second. However, one can legitimately conclude that the cumulative impact of learning experiences in the first country, starting in early childhood and up to the age of 15 and embracing experiences both in school and at home, have resulted in higher outcomes in the literacy domains that PISA measures.

The PISA target population did not include residents attending schools in a foreign country.

To accommodate countries that desired grade-based results for the purpose of national analyses, PISA 2000 provided an international option to supplement age-based sampling with grade-based sampling.

■ Population coverage

All countries attempted to maximise the coverage of 15-year-olds enrolled in education in their national samples, including students enrolled in special educational institutions. As a result, PISA 2000 reached standards of population coverage that are unprecedented in international surveys of this kind.

The sampling standards used in PISA permitted countries to exclude up to a total of 5 per cent of the relevant population either by excluding schools or by excluding students within schools. All but three countries achieved the required coverage of at least 95 per cent of the national desired target population, and half of countries achieved 98 per cent or more. The ceiling for population exclusions

of 5 per cent ensures that potential bias resulting from exclusions is likely to remain within one standard error of sampling.

Exclusions within the above limits include:

- *At the school level*: *i)* schools which were geographically inaccessible or where the administration of the PISA assessment was not considered feasible; and *ii)* schools that provided teaching only for students in the categories defined under "within-school exclusions", such as schools for the blind. The percentage of 15-year-olds enrolled in such schools had to be less than 2.5 per cent of the nationally desired target population. The magnitude, nature and justification of school-level exclusions is documented in the *PISA 2000 Technical Report*.

- *At the student level*: *i)* students who were considered in the professional opinion of the school principal or of other qualified staff members, to be educable mentally retarded or who had been defined as such through psychological tests (including students who were emotionally or mentally unable to follow the general instructions given in PISA); *ii)* students who were permanently and physically disabled in such a way that they could not perform in the PISA assessment situation (functionally disabled students who could respond were to be included in the assessment); and *iii)* non-native language speakers with less than one year of instruction in the language of the assessment. Students could not be excluded solely because of normal discipline problems. The percentage of 15-year-olds excluded within schools had to be less than 2.5 per cent of the ***nationally desired target population***.

Annex 3 – Chapter A – Table 4: The PISA target populations and samples

Table 4 describes the target population of the countries participating in PISA 2000. Further information on the target population and the implementation of PISA sampling standards can be found in the *PISA 2000 Technical Report*.

- **Column 1** shows the total number of 15-year-olds according to 2000 national population registers.

- **Column 2** shows the number of 15-year-olds enrolled in schools (as defined above), which is referred to as the ***eligible population***.

- **Column 3** shows the national desired target population. As part of the school-level exclusions, countries were allowed to exclude up to 0.5 per cent of students *a priori* from the eligible population, essentially for practical reasons. The following a priory exclusions exceed this limit but were agreed with the PISA Consortium: **Canada** excluded 1.17 per cent of the eligible population, of which 0.73 per cent accounted for schools on Federal Indian reservations and 0.43 per cent were in the Yukon, Northwest, and Nunuvuk territories. In the case of France, the eligible population included students in the Territoires d'Outre-Mer, but because countries were not required to assess students in outlying territories not subject to the national education systems, it was permissible to exclude these students. French students in outlying *départements* were, as required, included in PISA 2000. **Ireland** excluded 1.61 per cent of the eligible population. This covered 1.15 per cent of students enrolled in schools not aided by the Department of Education and Science, 0.36 per cent in very small schools,

and 0.12 per cent in "designated disadvantaged schools". **Japan** excluded 4.0 per cent of the eligible population, of which 1.7 per cent were students educated by mail and students in "other small streams (Bekka, Koto-senmon-gakko)", and 2.3 per cent were in part-time education ('Teiji-sei"). **Mexico** excluded 2.3 per cent of its eligible population in geographically remote schools. Among the non-OECD countries, **Brazil** excluded 15-year-olds enrolled in grades 1 to 6 which accounted for 16 per cent of 15-year-olds enrolled in Brazil. This exclusion was legitimate because such students are not part of the PISA target population. Subtracting the students excluded *a priori* from the eligible population results in the national desired target population in Column 3.

– **Column 4** shows the number of students enrolled in schools that were excluded from the national desired target population.

– **Column 5** shows the size of the national desired target population after subtracting the students enrolled in excluded schools. This is obtained by subtracting Column 4 from Column 3.

– **Column 6** shows the percentage of students enrolled in excluded schools. This is obtained by dividing Column 4 by Column 3.

– **Column 7** shows the ***number of students participating in PISA 2000***. Note that this number does not account for 15-year-olds assessed as part of additional national options. These national options account for an additional 82105 15-year-old students across all countries.

– **Column 8** shows the ***weighted number of participating students***, *i.e*., the number of students in the nationally defined target population that the PISA sample represents.

– Each country attempted to maximise the coverage of PISA's target population within the sampled schools. In the case of each sampled school, all eligible students, namely those 15 years of age, regardless of grade, were first listed. Sampled students who were to be excluded had still to be included in the sampling documentation, and a list drawn up stating the reason for their exclusion. **Column 9** indicates the number of ***excluded students,*** *i.e*. students who fell into one of the categories specified above. **Column 10** indicates the ***weighted number of excluded students***, *i.e*., the overall number of students in the nationally defined target population represented by the number of students excluded from the sample.

– **Column 11** shows the ***percentage of students excluded within schools.*** This is calculated as the weighted number of excluded students (Column 10) divided by the weighted number of excluded and participating students (Column 8 plus Column 10).

– **Column 12** shows the ***overall exclusion rate*** which represents the weighted percentage of the national desired target population excluded from PISA either through school-level exclusions or through the exclusion of students within schools. It is obtained by multiplying the percentage of school-level exclusions (Column 6) by 100, minus the percentage of students excluded within schools (Column 11) and adding the percentage of students excluded within schools (Column 11) to the result.

– **Column 13** presents an ***index of the extent to which the national desired target population is covered by the PISA sample***. The index is expressed in per cent of the national desired target population covered. Luxembourg, Poland and Brazil are the only countries in which less than 95 per cent of the population that PISA seeks to cover is represented by the PISA samples. In the case of **Poland**, the exclusion rate is 10 per cent. This includes the 6.7 per cent of 15-year-olds enrolled in primary schools. The performance of these students in the PISA assessments can be expected to be lower than the performance of 15-year-olds in secondary schools, and this exclusion may imply that the performance of Polish students on the combined reading literacy scale is overestimated by two rank-order positions and on the scientific literacy scale by about three rank-order positions. No rank-order shifts are expected on the mathematical literacy scale. **Luxembourg** has an exclusion rate of 9.1 per cent, due largely to students instructed in languages other than the languages of assessment in Luxembourg. Permissible exclusions included 28 students with special needs; 297 students attending the European School; 32 students attending the American International School; 45 students attending other schools not under the authority of the Ministry of Education; and 14 students attending small schools. It is not expected that the exclusions in Luxembourg overestimate its rank-order position on the PISA scales. Among non-OECD countries, in **Brazil**, the school-level exclusion rate is 18 per cent but much of this is explained by 15-year-olds enrolled in Grade 5 and 6 who do not belong to the PISA target population. No rank order shifts are expected of the exclusions in Brazil. For further information see the *PISA 2000 Technical Report*.

– **Column 14** presents an ***index of the extent to which 15-year-olds enrolled in schools are covered by the PISA sample***. The index measures the overall proportion of the national enrolled population that is covered by the non-excluded portion of the student sample. The index takes into account both school-level and student-level exclusions. Values close to 100 indicate that the PISA sample represents the entire education system as defined for PISA 2000. The index is the weighted number of participating students (Column 9) divided by the weighted number of participating and excluded students (Columns 9 plus Column 11), times the nationally defined target population (Column 5) divided by the national desired target population (times 100).

Sampling procedures and response rates

The accuracy of any survey results depends on the quality of the information on which national samples are based as well as on the sampling procedures. Quality standards, procedures, instruments and verification mechanisms were developed for PISA that ensured that national samples yielded comparable data and that the results could be compared with confidence.

Most PISA samples were designed as two-stage stratified samples (where countries applied different sampling designs, these are documented in the *PISA 2000 Technical Report*). The first stage consisted of sampling individual schools in which 15-year-old students were enrolled. Schools were sampled systematically with probabilities proportional to size, the measure of size being a function of the estimated number of eligible (15-year-old) students enrolled. A minimum of 150 schools were selected in each country (where this number existed), although the requirements for national analyses often required a somewhat larger sample. As the schools were sampled, replacement schools were simultaneously identified, in case a sampled school chose not to participate in PISA 2000.

In the case of **Iceland**, **Liechtenstein** and **Luxembourg**, all schools and all eligible students within schools were included in the sample. However, since not all students in the PISA samples were assessed in mathematical and scientific literacy, these national samples represent a complete census only in respect of the assessment of reading literacy, and a partial census of the assessment of mathematical and scientific literacy.

Experts from the PISA Consortium monitored the sample selection process in each participating country.

The second stage of the selection process sampled students within sampled schools. Once schools were selected, a list of each sampled school's 15-year-old students was prepared. From this list, 35 students were then selected with equal probability (all 15-year-old students were selected if fewer than 35 were enrolled).

Data quality standards in PISA required minimum participation rates for schools as well as for students. These standards were established to minimise the potential for response biases. In the case of countries meeting these standards, it is likely that any bias resulting from non-response will be negligible, *i.e.* typically smaller than the sampling error.

A minimum response rate of 85 per cent was required for the schools initially selected. Where the initial response rate of schools was between 65 and 85 per cent, however, an acceptable school response rate could still be achieved through the use of replacement schools. This procedure brought with it a risk of increased response bias. Participating countries were, therefore, encouraged to persuade as many of the schools in the original sample as possible to participate. Schools with a student participation rate between 25 and 50 per cent were not regarded as participating schools, but data from these schools were included in the database and contributed to the various estimations. Data from schools with a student participation rate of less than 25 per cent were excluded from the database.

PISA 2000 also required a minimum participation rate of 80 per cent of students within participating schools (original sample and replacement). This minimum participation rate had to be met at the national level, not necessarily by each participating school. Make-up sessions were required in schools in which too few students had participated in the original assessment sessions. Student participation rates were calculated over all participating schools, whether original sample or replacement schools, and from the participation of students in both the original assessment and any make-up sessions. A student who did not participate in the first assessment session was not regarded as a participant but was included in the international database and contributed to the statistics presented in this publication if he or she participated in the second assessment session and provided at least a description of his or her father's or mother's occupation.

Table 5 shows the response rates for students and schools, before and after replacement.

Annex 3 – Chapter A – Table 5: Response rates

Column 1 shows the ***weighted participation rate of schools before replacement.*** This is obtained by dividing Column 2 by Column 3. The Netherlands, the United Kingdom and the United States did not meet PISA's requirements for response rates before replacement. In the **United Kingdom,** the initial response rate fell short of the requirements by 3.7 per cent and in the **United States** by 8.6 per cent. Both countries provided extensive evidence to the PISA Consortium that permitted an assessment of the expected performance of non-participating schools. On the basis of this evidence, PISA's Technical Advisory Group determined that the impact of these deviations on the assessment results was negligible. The results from these countries were included in all analyses. The initial response rate for the **Netherlands** was only 27 per cent. As a result, the PISA Consortium initiated supplementary analyses that confirmed that the data from the Netherlands might be sufficiently reliable and could be used in some relational analyses. Despite this conclusion, the response rate was too low to give

confidence that the sample results reflect those for the national population reliably, with the level of accuracy and precision required in PISA 2000. Assuming negligible to moderate levels of bias due to non-response, the rank-order position of the Netherlands may be expected, with 95 per cent confidence, to lie between 2nd and 14th among countries on the combined reading literacy scale, between 1st and 4th on the mathematical literacy scale, and between 3rd and 14th on the scientific literacy scale (for further details see the *PISA 2000 Technical Report*). Mean performance scores for the Netherlands can, therefore, not be compared with those from other countries. In tables where the focus is on the comparison of mean scores, the Netherlands has been excluded. Where the performance of sub-groups is shown, only the relative differences in performance between the relevant sub-groups within the Netherlands should be considered, and the sub-group means should not be compared with those from other countries.

- **Column 2** shows the ***weighted number of responding schools before school replacement*** (weighted by student enrolment)

- **Column 3** shows the ***weighted number of sampled schools before school replacement*** (including both responding and nonresponding schools).

- **Column 4** shows the ***weighted participation rate of schools after replacement.*** This is obtained by dividing Column 5 by Column 6.

- **Column 5** shows the ***weighted number of responding schools after school replacement*** (weighted by student enrolment).

- **Column 6** shows the ***weighted number of schools sampled after school replacement*** (including both responding and nonresponding schools).

- **Column 7** shows the ***weighted student participation rate after replacement.*** This is obtained by dividing Column 8 by Column 9.

- **Column 8** shows the ***weighted number of students assessed***.

- **Column 9** shows the ***weighted number of students sampled*** (including both students that were assessed and students who were absent on the day of the assessment).

- **Column 10** shows the ***unweighted number of students assessed***.

- **Column 11** shows the ***unweighted number of students sampled*** (including both students that were assessed and students who were absent on the day of the assessment).

Standard errors, significance tests and multiple comparisons

The statistics in this report represent ***estimates*** of national performance based on samples of students rather than values that could be calculated if every student in every country had answered every question. Consequently, it is important to have measures of the degree of uncertainty of the estimates. In PISA 2000, each estimate has an associated degree of uncertainty, which is expressed through a ***standard error***. The use of ***confidence intervals*** provides a way to make inferences about the

population means and proportions in a manner that reflects the uncertainty associated with the sample estimates. From an observed sample statistic it can, under the assumption of a normal distribution, be inferred that the corresponding population result would lie within the confidence interval in 95 out of 100 replications of the measurement on different samples drawn from the same population.

In many cases, readers are primarily interested in whether a given value in a particular country is different from a second value in the same or another country, *e.g.*, whether females in a country perform better than males in the same country. In the tables and charts used in this report, differences are labelled as ***statistically significant*** when a difference of that size, or larger, would be observed less than 5 per cent of the time, if there was actually no difference in corresponding population values. Similarly, the risk of reporting as significant if there is, in fact, no correlation between to measures is contained at 5 per cent.

Although the probability that a particular difference will falsely be declared to be statistically significant is low (5 per cent) in each single comparison, the probability of making such an error increases when several comparisons are made simultaneously.

It is possible to make an adjustment for this which reduces to 5 per cent the maximum probability that differences will be falsely declared as statistically significant at least once among all the comparisons that are made. Such an adjustment, based on the Bonferroni method, has been incorporated into the multiple comparison since the likely interest of readers in those contexts is to compare a country's performance with that of all other countries.

For all other tables and charts readers should note that, if there were no real differences on a given measure, then the ***multiple comparison*** in conjunction with a 5 per cent significance level, would erroneously identify differences on 0.05 times the number of comparisons made, occasions. For example, even though the significance tests applied in PISA for identifying gender differences ensure that, for each country, the likelihood of identifying a gender difference erroneously is less than 5 per cent, a comparison showing differences for 27 countries would, on average, identify 1.4 cases (0.05 times 27) with significant gender differences, even if there were no real gender difference in any of the countries. The same applies for other statistics for which significance tests have been undertaken in this publication, such as correlations and regression coefficients.

Development of the PISA assessment instruments

The development of the PISA 2000 assessment instruments was an interactive process between the PISA Consortium, the various expert committees, OECD governments and national experts. A panel of international experts led, in close consultation with participating countries, the identification of the range of skills and competencies that were, in the respective assessment domains, considered to be crucial for an individual's capacity to fully participate in and contribute to a successful modern society. A description of the assessment domains – the assessment framework – was then used by participating countries, and other test development professionals, as they contributed assessment materials.

The Main Study included 37 Reading Units with 141 items (counting different parts of questions as separate items). The stimulus for 14 of these units came from national contributions, the PISA Consortium was the source of the stimulus material for 13 units, and 10 units came from the International Adult Literacy Survey. The Main Study instruments also included 16 Mathematics Units (32 Items) and 14 Science Units (35 Items).

Five item types were used in the PISA assessment instruments:

- ***Multiple-choice items***: these items required students to circle a letter to indicate one choice among four or five alternatives, each of which might be a number, a word, a phrase or a sentence. They were scored dichotomously.

- ***Complex multiple-choice items***: in these items, the student made a series of choices, usually binary. Students indicated their answer by circling a word or short phrase (for example *yes* or *no*) for each point. These items were scored dichotomously for each choice, yielding the possibility of full or partial credit for the whole item.

- ***Closed constructed-response items***: these items required students to construct their own responses, there being a limited range of acceptable answers. Most of these items were scored dichotomously with a few items included in the marking process.

- ***Short response items***: as in the closed constructed-response items, students were to provide a brief answer, but there was a wide range of possible answers. These items were hand-marked, thus allowing for dichotomous as well as partial credit.

- ***Open constructed-response items***: in these items, students constructed a longer response, allowing for the possibility of a broad range of divergent, individual responses and differing viewpoints. These items usually asked students to relate information or ideas in the stimulus text to their own experience or opinions, with the acceptability depending less on the position taken by the student than on the ability to use what they had read when justifying or explaining that position. Partial credit was often permitted for partially correct or less sophisticated answers, and all of these items were marked by hand.

For further information on the development of the PISA assessment instruments and the PISA assessment design, see the *PISA 2000 Technical Report*.

INDICATOR A11: Labour force participation by level of educational attainment

General notes

See Annex 3, notes on Indicator A3.

INDICATOR A12: Expected years in education, employment and non-employment between the ages of 15 and 29

■ General notes

Methods and definitions

The most frequent source is the Labour Force Survey (see Indicator A3). This data request expands the request on labour force status by completed level of education (ISCED-97) and aims at describing the transition process of youngsters aged 15 to 29 years from school to work.

Data refer to the first quarter of each year comprising the following months: January, February, March.

The work status refers to the International Labor Office definition of employment, unemployment and not in the labour force. The type of employment refers to full-time or part-time employment based on a threshold defintion of 30-usual-hour cut off on the main job. Full-time workers are those working usually 30 hours or more on their main job.

The school status is understood in terms of Education or/and training currently being received in the regular educational system, which can be during the previous four weeks (including the survey reference week) or a shorter period. If such question does not exist in the national labour force survey, the "Main activity question" have been used to fill the schooling status.

Work study programs are combinations of work and study periods where both aspects are parts of an integrated, formal education / training activity (examples are the "dual system" in Germany, "apprentissage" or "formation en alternance" in France and Belgium, internship or co-operative education in Canada, Apprenticeship in Ireland, Youth Training in the United Kingdom… Vocational education/training occurs not only in school settings but also in a working environment. Sometimes students or trainees are paid, sometimes not. There is a strong relationship between the job and the courses / training.

The ISCED level refers to the ISCED mapping used to code the LFS (See Indicator A3). For those in education, this refers to the level of education of the program attended. For those not in education, this refers to the completed level of education

■ Notes on specific countries

Sources

Canada: Students attending all schools includes primary, secondary, college, CEGEP, university and other schools.

United Kingdom: The work study programmes definition includes:

- Government employment or training schemes (Youth training programme, Training for work, Action for Community Employment, Job Skills, Natinoal ytaineeship),

- those on Newdeal scheme, working for an employer in public or private sector, working for the voluntary sector, working for an environmental task force, other type of Newdeal scheme involving practical training (practical training, at college, temporarily away from project/college),

- those on the following government employment or training schemes: in England/Wales on a scheme run by a Training & Enterprise Council, in Scotland on a scheme run by a Local Enterprise Company,

- training course for a qualification in nursing, physiotherapy or a similar medical subject,

- enrolled on a University 'sandwich' course - work in industry included in course,

- teacher training course,

- post Graduate Certificate in Education,

- anyone on a recognised Trade Apprenticeship not included in any of the above schemes.

INDICATOR A13: The returns to education: Private and social rates of return to education and their determinants

■ Data sources for the calculation of internal rates of return

Earnings data have been obtained from national sources and refer to male and female full-time workers. They are generally available for five-year age intervals, and the most recent data are from either 1999 or 2000.

For the *United States*, earnings data are from the CPS Annual Demographic Survey, March 2000. They refer to 1999 annual earnings by educational attainment, by age for men and women 18 years old and over who worked full time year round. The educational categories are defined as "not high school graduate" for lower secondary, "graduate" for upper-secondary, and "total college" for tertiary education.

For *Japan*, earnings data are from the Ministry of Health, Labour and Welfare, June 1999. They refer to 1999 gross monthly earnings by educational attainment by age for men and women 18 years old and over who worked full time year round. These earnings data do not include bonuses. However, as they are proportional to the monthly wage, they do not affect the calculation. The educational categories are defined as lower secondary, upper-secondary and "junior college and university" for tertiary education. This latest category was aggregated using the weighted average of people in each educational category.

For *Germany*, earnings data are derived from an unweighted sample of the German Socio-Economic Panel Study (GSOEP). They refer to 1998 average annual earnings by educational attainment, by age for men and women who worked full time year round. The educational categories are defined as

"between ten and 13 years of education" for lower secondary, "between 13 and 17 years of education" for upper-secondary and "superior or equal to 17 years of education" for tertiary education.

For *France*, earnings data are from the Enquête-Emploi from INSEE. They refer to 2000 average and median monthly earnings by educational attainment, by age for men and women who worked full time year round. The educational categories are defined as "enseignement secondaire inférieur" for lower secondary, "enseignement secondaire supérieur et post-secondaire" for upper-secondary and "enseignement supérieur" for tertiary education.

For *Italy*, earnings data are from the Survey of Italian Households' income and wealth from Banca d'Italia. They refer to 1998 annual post-tax earnings by educational attainment, by age for men and women who worked full time year round. The educational categories are defined as "middle school" for lower secondary, "high school" for upper-secondary and "university degree" for tertiary education.

For *Canada*, earnings data are from the Labour Force Survey, Statistics Canada. They refer to 2000 annual average earnings by educational attainment, by age for men and women who worked full time year round. The educational categories are defined as "études secondaires complétées et études post-secondaires partielles" for lower secondary, "certificat ou diplôme d'études post-secondaires" for upper-secondary and "grade universitaire, baccalauréat, maîtrise ou doctorat" for tertiary education. These categories were aggregated using the weighted average of people in each educational category.

For the *United Kingdom*, earnings data are from the Labour Force Survey, Office for National Statistics United Kingdom. They refer to 2000 average weekly earnings by educational attainment, by age, 16 years old and over for men and women who worked full time. The educational categories are defined as "no qualification, secondary education up to the age of 14" for lower secondary, "GCSE A to C or equivalent and GCE A level or equivalent" for upper-secondary and "higher education and degree or equivalent" for tertiary education. These categories were aggregated using the weighted average of people in each educational category.

For *Sweden*, earnings data are from Statistics Sweden. They refer to 1999 annual average earnings by educational attainment, by age for men and women who worked full time. The educational categories are defined as "level 2, nine-year compulsory school" for lower secondary, "level 3-4, upper-secondary school, two years or shorter and upper-secondary school, three years" for upper-secondary and "level 5, 6 and 7, tertiary education, shorter than three years, tertiary education three years or longer and postgraduate education" for tertiary education. These categories were aggregated using the weighted average of people in each educational category.

For *the Netherlands*, earnings data are from Statistics Netherlands. They refer to 1997 yearly earnings of full-time employees by gender, age group and education level. The educational categories are defined as "MAVO+VBO" for lower secondary, "HAVO/VWO+MBO" for upper-secondary and "HBO+WO" for tertiary education. These categories are aggregated using the weighted average of people in each educational category.

For *Denmark*, earnings data are from Denmarks Statistics. They refer to 1999 income from wages and salaries for full-time employees by gender, age and educational level. The educational categories are defined as "basic school including lower secondary" for lower secondary, "upper-secondary, vocational secondary and post-secondary not tertiary" for upper-secondary and "medium long tertiary and long tertiary" for tertiary education. These categories were aggregated using the weighted average of people in each educational category.

The unemployment rates by education and age come from Education at a Glance and refer to 1999.

The labour productivity growth rate used in the calculation is set equal to the average rate in ECO's medium-term reference scenario for 2002-06.

The theoretical length of studies is taken from OECD (1999b), Classifying Educational Programmes, Manual for ISCED-97 Implementation in OECD Countries. For tertiary studies, the weighted average theoretical length of the different programmes are used (e.g. master and professional degrees), the weights being the share of students in the different programmes.

The private cost of tertiary education is computed as the average total cost per full-time student multiplied by the share of private funds in total tertiary education spending. The data on total cost per full-time student and the share of private spending in total spending comes from Education at a Glance (see OECD, 2001b) and refer to the year 1998 (which is scaled up by the GDP price deflator to get 1999 values).

The data on student loans and grants are derived from details of such systems from national sources. The maximum length of the associated repayment schedule has been used for the calculation.

The income tax rates and the social security contributions paid by employers come from DAFFE's tax data files and refer to 1999.

The calculation of private internal rates of return

The internal rate of return in real terms is the discount rate (δ) that equalises the future flows of real benefits (B) and real costs (C) associated with investment in upper-secondary (s) or tertiary (u) education, *i.e.*

$$\sum_{t=a}^{a+l}(1+\delta)^{-(t-a)} \times C^{s,u}(t) = \sum_{t=a+l+1}^{64}(1+\delta)^{-(t-a)} \times B^{s,u}(t)$$

where t is age, a is the typical age at the start of upper-secondary (tertiary) education and l is the theoretical length of upper-secondary (tertiary) education. The benefits are assumed to last until the age of 64.

The costs of tertiary education are defined as

$$C^{u}(t) = \left[1-\tau\left(E^{s}(t)\right)\right]\times\left[1-ur^{s}(t)\right]\times E^{s}(t)\times(1+g)^{(t-a)} + F^{u}(t)\times(1+g)^{(t-a)} - S(t)$$

where τ is the average tax rate for base-year earnings of a single person with upper-secondary education at age t ($E^{s}(t)$), $ur^{s}(t)$ is the unemployment rate for people with upper-secondary education at age t, g is the growth rate of labour productivity in the economy as a whole, $F^{u}(t)$ is the annual private cost of tertiary education, and $S(t)$ is student grants and loans at age t. The scaling factor at the end of the first term of the right-hand side of the equation is there to obtain future earnings by the scaling up of base-year earnings with the productivity growth rate for the economy as a whole. The costs of upper-secondary education are similarly defined.

The benefits of tertiary education are defined as

$$B(t) = \left(1-\tau\left(E^{u}(t)\right)\right)\times\left(1-ur^{u}\right)\times E^{u}(t)\times(1+g)^{(t-a)}$$

$$-\left(1-\tau\left(E^{s}(t)\right)\right)\times\left(1-ur^{s}\right)\times E^{s}(t)\times(1+g)^{(t-a)}-R(t)$$

where *R(t)* is the repayment of loans, if any. According to this equation, the benefits are equal to the difference between post-tax earnings adjusted for unemployment risk for tertiary and upper-secondary educated persons minus the repayment of student support. The benefits of upper-secondary education are similarly defined.

These estimations have several important limitations. They assume stability in the wage premia through the life cycle and are based on average earnings and costs. In practice, there can be considerable variation in rates of return for different fields of study or particular social groups. The rate-of-return calculations do not incorporate unemployment benefits or other social and personal benefits. Differences in retirement incomes for different educational groups are not included in the estimates and they do not take into account broader social benefits flowing from investment in education such as better health or lower crime. Finally, there are no private tuition costs included in upper-secondary education.

The calculation of social internal rates of return

As in the case of the private internal rate of return, the social rate of return is the discount rate that equalises future costs and benefits:

$$\sum_{t=a}^{a+l}(1+\delta)^{-(t-a)}\times SC^{s,u}(t)=\sum_{t=a+l+1}^{64}(1+\delta)^{-(t-a)}\times SB^{s,u}(t)$$

where *SC* and *SB* are social costs and social benefits, respectively, and other variables are defined as in Box 2.1.

The social cost of tertiary education is the opportunity cost of lost output and the direct total cost of providing such education

$$SC^{u}(t)=\left[1-ur^{s}(t)\right]\times\left[E+ST\right]^{s}(t)\times(1+g)^{(t-a)}+\left[F+G\right]^{u}(t)\times(1+g)^{(t-a)}$$

where ST^{s} is employers' social security contributions for workers with upper-secondary education and *G* is the annual public cost (i.e. excluding private fees) of tertiary education. Compared to the private costs, the social costs exclude taxes and student grants and loans as these items involve transfers between individuals. The opportunity cost is also expanded to include all labour costs and the direct costs include the public subsidies involved in tertiary education.

The social benefits of tertiary education are defined as

$$SB(t)=\left(1-ur^{u}\right)\times\left[E+ST\right]^{u}(t)\times(1+g)^{(t-a)}-\left(1-ur^{s}\right)\times\left[E+ST\right]^{s}(t)\times(1+g)^{(t-a)}$$

As compared to the private benefits, taxes and repayment of loans are excluded from the social benefit formula for the reasons discussed above and productivity is proxied by total labour costs.

CHAPTER B: FINANCIAL AND HUMAN RESOURCES INVESTED IN EDUCATION

INDICATOR B1: Educational expenditure per student

See also notes on Indicator B1.

■ General notes

Methodology

- **Reference period**

Adjustments were made for countries in which the financial year and the school year do not coincide. In order to match the enrolment data with the financial year 1999, a weighted average of the enrolment data for the academic years 1998/99 and 1999/00 was calculated. The data were weighted in accordance with the proportion of each school year that fell within the financial year 1999 (see Annex 2).

- **Estimation of expenditure per tertiary student over the duration of studies.**

Two alternative methods were employed to calculate the average duration of tertiary studies: the approximation formula and the chain method. For both methods, it should be noted that the result does not give the average duration needed for a student to graduate since all students participating in tertiary education are taken into account, including drop-outs. Hence, the figure can be interpreted as the average length of time for which students stay in tertiary education until they either graduate or drop out. However, in the case of countries with low drop-out rates (see Indicator A2), the result can serve as a good proxy for duration until graduation.

The estimates of cumulative expenditure on education over the average duration of tertiary studies were obtained by multiplying annual expenditure per student by an estimate of the average duration of tertiary studies.

Using the **approximation formula**, the latter estimate was approximated by the rate of turnover of the existing stock of enrolments, obtained from the ratio of flow data (entrants and leavers) to the corresponding numbers of students enrolled. The formula $D = (S_{t-1} + S_t)/(Z_t+A_t)$ was used for this calculation, where S_t is the number of students enrolled at the end of year *t*, S_{t-1} is the number of students at the beginning of year *t* (approximated by the number of students enrolled at the end of the preceding school year), Z_t is the number of students who are in their first year of study in year *t*, and A_t is the number of leavers in school year *t* (approximated by $S_{t-1} + Z_t - S_t$). Full-time equivalents were used to estimate enrolments. The number of entrants to full-time programmes was used to estimate the inflow. All participants were included, even those who might not obtain a degree.

The estimate is based on a number of simplifying assumptions: first, it is assumed that transition rates are constant over time. Second, expenditure in the current reference year is assumed to be typical of the total duration of studies.

Using the **chain method**, the duration of study is defined as the sum of the probabilities, for each year of study, that a student who has entered tertiary education will still be enrolled in that year of study. The duration is therefore defined as $D = \sum_{i=1}^{10} q_i$, where q_i is the probability that a student will reach the *i*-th year of study, *i.e.*, the proportion of individuals in the *i*-th year of study relative to those studying in the first year *i*-1 years before. With the chain method all conditional probabilities are derived from data for two adjacent years, the reference year and the preceding year. Given the number of students *s* in year *i* of study in year *t* and the number of students in year *i*-1 of study in year *t*-1, the transition rates can be calculated for each year of study as $a_{i,t}=s_{i,t}/s_{i-1,t-1}$. The transition rates give, for each year of study, the probability that a student in year *i*-1 will continue studying in year *i*. The product of all transition rates 1 to *I* gives the probability, for year *i* of study, that a student who started *i*-1 years before will still be enrolled in year *i* of study. Finally, the sum of all conditional probabilities gives an estimate of the average duration of tertiary education. Expenditure in the current reference year is assumed to be typical of the total duration of studies.

■ Notes on specific countries

Coverage

See also notes on Indicator B2.

Australia: Previously, university enrolments included some students in overseas campuses. These have been excluded, starting with EAG 2001. This correction affects the number of tertiary students, and consequently the expenditure per student, by 2.8 per cent. Enrolment data for the Vocational Education and Training sector are now based on AQF data rather than stream data, so that there will be breaks in series at ISCED 2, 3, 4 and 5B.

United Kingdom: Upper secondary vocational students are excluded from the calculation of expenditure per student, as they were counted on a "whole year" rather than on a "snapshot" basis.

- **Estimation of the duration of tertiary education calculated using the chain method**

Canada: The 6th year of study includes the 7th, 8th, 9th and 10th years of study.

Germany: The model for the calculation of the average duration of tertiary studies was modified. Students beyond the 10th year of study were not taken fully into consideration. Students in the 10th year of study or beyond amounted to around 10 per cent of total enrolment in the academic year 1994/5. The reported duration is a lower boundary of total duration and probably underestimated. In general, non-university tertiary education has a duration of 2 years, but part-time courses take up to 4 years.

Germany and **Italy:** No distinction is made between part-time and full-time studies at the university level. However, for expenditure over the duration of studies the effect balances out, since reporting part-time students as full-time students leads both to an underestimate of annual expenditure and to an overestimate of duration of studies.

Greece: The 5th year of tertiary-type B study includes the 6th year and beyond. The 7th year of tertiary-type A and advanced research programmes includes the 8th year and beyond. This leads to an underestimate of duration.

Hungary: Distribution is estimated between ISCED levels 1,2,3.

Iceland: Data were partly estimated, as students in programmes at level 5A (2nd degree) and level 6 are often not signed up for thesis credits until the thesis is completed. Data were therefore adjusted to correct for consequent overestimating of the number of part-time students and underestimating of full-time equivalents.

Ireland: Full-time education only.

Korea: The maximum duration of non-university education is 3 years. The 6th and 8th years and beyond of university education are included in the 7th year of study.

United Kingdom: The chain method was amended slightly in order to use the available UK data. Average durations were calculated separately using the chain method for each of the main types of course at tertiary level. To take account of the fact that many students go on to take a further course after their initial course, these figures were then combined according to the numbers of students following each of the main pathways at tertiary level. The total average durations shown for university and all tertiary levels are therefore weighted averages of the individual average durations of each type of course. Coverage excludes those studying in further education institutions, though these account for less than 10 per cent of all students at the tertiary level.

Interpretation

Switzerland: Expenditure per student is very high at the university level. This is mainly due to the structure of the university system: a high number of universities in relation to the size of the country (partly due to the three language regions), the small size of some universities, a wide range of provision at each university, and relatively low student/teaching staff ratios. Furthermore, teachers' salaries at university level are comparatively high. Advanced research programmes are not included in tertiary education.

Sources

2000 UNESCO/OECD/EUROSTAT (UOE) data collection on education statistics. National sources are:

Australia: Department of Employment, Education, Training and Youth Affairs, Higher Education Division, Canberra; Australian Bureau of Statistics, "Expenditure on Education Finance" collection; in the case of regional government expenditure, state government data (for public institutions) and school

data (for private institutions) were used; "Collection of National Financial Data on Vocational Education and Training"; New South Wales Technical and Further Education, unpublished data.

Austria: Austrian Central Statistical Office, Vienna.

Belgium: Flemish Community: Ministry of the Flemish Community, Education Department, Brussels; French Community: Ministry of the French Community, Education, Research and Training Department, Brussels; German Community: Ministry of the German-speaking Community, Eupen.

Canada: Statistics Canada, Ottawa.

Czech Republic: Closing account of the Government of the Czech Republic; regular survey of the Institute for Information on Education; unpublished information from the Ministry of Education, Youth and Sports and the Ministry of Agriculture.

Denmark: Ministry of Education, Department of Economic Affairs, Copenhagen.

Finland: Statistics Finland, Helsinki.

France: Ministry of National Education, Higher Education and Research, Directorate of Evaluation and Planning, Paris.

Germany: Federal Office of Statistics, Wiesbaden.

Greece: Ministry of National Education and Religious Affairs, Directorate of Investment Planning and Operational Research, Athens.

Hungary: Ministry of Culture and Education, Ministry of Finance, Central Statistical Office, Budapest.

Iceland: National Economics Institute, Reykjavik.

Ireland: Department of Education, Statistics Section, Dublin.

Italy: National Institute of Statistics (ISTAT), Rome; Ministry of Public Education, Statistical Service, Rome.

Japan: Ministry of Education, Science, Sports and Culture, Research and Statistics Planning Division, Tokyo.

Korea: Korean Educational Development Institute, Educational Information Research Centre, Seoul.

Mexico: Secretariat of Public Education.

Netherlands: Central Bureau for Statistics, Department for Statistics of Education, Voorburg; Ministry of Education and Science, Zoetermeer.

New Zealand: Ministry of Education, Wellington.

Norway: Statistical Central Office, Division for Population, Education and Regional Conditions, Kongsvinger; The Royal Norwegian Ministry of Education, Research and Church Affairs, Oslo.

Poland: Central Statistical Office, Republic of Poland, Warsaw.

Portugal: Ministry of Education, Office of Research and Planning, Department of Programming, Lisbon.

Spain: National Institute of Statistics, Sub-directorate General of Social Research and Statistics, Madrid; Ministry of Education, Planning and Statistical Office, Madrid; Ministry of Labour, Madrid.

Sweden: Swedish National Agency for Education (*Skolverket*), Stockholm; Swedish National Agency for Higher Education (*Hogskoleverket*); Statistics Sweden, Örebro.

Switzerland: Federal Statistical Office, Berne.

Turkey: Ministry of National Education and Higher Education Council, Final financial record.

United Kingdom: Department for Education and Skills, Darlington.

United States: Department of Education, Office of Educational Research and Improvement, National Centre for Education Statistics, Washington, D.C.

INDICATOR B2: Expenditure on educational institutions relative to Gross Domestic Product

■ General notes

Methodology

- **Changes in GDP in comparison with earlier editions**

The theoretical framework underpinning the calculation of GDP has been provided for many years by the United Nations' publication *A System of National Accounts*, which was released in 1968. An updated version was released in 1993 (commonly referred to as SNA93).

Statistics on educational expenditure relate to the financial year 1998. For countries where GDP is not reported for the same reference period as data on educational finance, GDP is estimated as: w_{t-1} (GDP_{t-1}) + w_t (GDP_t), where w_t and w_{t-1} are the weights for the respective portions of the two reference periods for GDP which fall within the educational financial year. Adjustments were made for **Canada, Japan, the United Kingdom and the United States** (see Annex 2)**.**

- **Calculation of estimates in Charts B2.3 (A), (B) and (C)**

Charts B2.3 (A), (B) and (C) show shifts in educational expenditure that would be expected if participation by children in a country's education were at the OECD average level. The expected enrolment for a given country is calculated as follows: let *POP(i,k)* be the population in country *i* at age *k* and let *AER(k,l)* be the OECD average enrolment rate at age *k* at level of education *l*. The expected enrolment is then calculated as

$$EE(i) = \sum_{k=5}^{29} POP(i,k) * AER(k,l) .$$

The expected difference in expenditure for country *I* at level *l*, as shown in Charts B2.3(A), (B) and (C), is calculated as *EX(i,l)*(EE(i,l)/RE(i,l))-EX(i,l)*, with *RE(i,l)* representing the observed enrolment at level *l* in country *i*. The OECD average enrolment rate is calculated using data from countries for which enrolment data by single year of age are available. EX (*i,l)* represents the expenditure relative to GDP for country *i* at level *l*.

- **Calculation of index in Table B2.2**

Table B2.2 shows the changes in expenditure on educational services between 1995 and 1999. All expenditure reported for 1995 was expressed in 1999 constant dollars, adjusted to the price level of 1999 using the GDP deflator (see Annex 2).

■ Notes on specific countries

Coverage

Australia: Starting with EAG 2001, data on educational finance are reported on an academic/calendar year basis and not on a financial year (from July to June) basis, which was used in previous editions. The financial data for 1999 are not comparable with data from previous finance returns. The major reasons for differences between the 1998 and 1999 finance data are the introduction of accrual accounting in the government school sector, the attribution of expenditure on transport subsidies to institutional spending rather than being classified as government grants to households, changes to methodologies in attributing expenditure in the government school sector between ISCED 2 and ISCED 3; and using the Australian Qualification Framework rather than 'stream' in the Vocational Education and Training sector to allocate students to ISCED levels. The 1995 data were compiled using the same methodology.

Austria: Expenditure on R&D in the tertiary sector is partially excluded. Some expenditure by public institutions other than the Ministry of Education is excluded (social insurance bodies, chambers of trade and crafts, and federal funds - *Sozialversicherungsträger, Kammern, Bundesfonds*).

Belgium: Expenditure on retirement by central government is excluded. Research expenditure has been tuned with the DSTI-data, so it now includes all the R&D expenditure (HERD). Also the cost of the administration has been included this year. The expenditure of the local government is based on real expenditure instead of estimated data. The expenditure of households is based on a new survey,

which gives us much more detail and precision (only net expenditure was put in the tables). Notes on Belgium apply equally to the **Flemish Community of Belgium.**

Canada : In comparison to EAG 2001, there is a large difference in private post-secondary education expenditures. The reason is a methodological one. A new estimate of private post-secondary expenditures, derived from the National Accounts area at Statistics Canada has been implemented in EAG 2002. This new estimate is significantly higher than the previous estimates.

Czech Republic: Data from the Ministries of Justice, Defence and Internal Affairs are not included.

Denmark: The allocation of expenditure on early childhood, primary and lower secondary education is estimated on the basis of the corresponding enrolments. Expenditure on pre-primary education includes some expenditure on day care. Day care activities are fully integrated into the school day and not costed separately. It is debatable whether this expenditure should be classified as educational or not. While Denmark includes this expenditure, **Finland** and **Sweden** exclude expenditure on similar programmes.

Finland: The coverage of expenditure on pre-primary education has changed considerably in comparison with previous editions. Estimated kindergarten expenditure on day care and child care for 3 to 6-year-olds is excluded. This change in reporting also applies to the trend data presented here. Expenditure on apprenticeship training is included for the first time.

Government transfers and payments to private entities, except financial aid to students, are excluded. Funds from foreign sources are excluded. Local government expenditure also contains private expenditure.

France: All expenditure excludes overseas departments (*départements d'outre mer*, DOM). Gross domestic product and total public expenditure were adjusted accordingly.

Germany: Expenditure on the following programmes is not included in total expenditure: training of trainee civil servants in public service; colleges of nursing; agricultural training centres; and public and private expenditure on institutions providing ancillary services at the tertiary level (*Studentenwerk*). Payments by private households and other private entities to government-dependent institutions are excluded.

Greece: Expenditure on early childhood education is included in expenditure on primary education.

Japan: Expenditure on special training colleges, "miscellaneous schools" and educational administration are not allocated by level.

Korea: Expenditure on R&D in tertiary education institutions is excluded with the exception of R&D funded by the Ministry of Education. Expenditure on educational programmes provided by ministries other than the Ministry of Education is excluded (KAIST, Police College, College of External Affairs, Tax Officers' College and Military Academy).

Netherlands: Figures, as shown in the chapter B of EAG2002, are influenced to a considerable degree by three changes in the Dutch FINANCE data submission for the year 1999, made by Statistics Netherlands. These changes (which were discussed during the 2nd Finance Comparability Study visit), compared to 1998, are:

- A lower proportion of public subsidies are attributed to 'public grants attributable for tuition fees to educational institutions' and by consequence more to public grants NOT attributable for tuition fees to educational institutions. This new division is based on the calculation standards in our student grant system. As a consequence the net private expenditure to all educational institutions is considerably higher compared to EAG2001.
- Private expenditure on R&D (3e geldstroom onderzoek) is included. As a consequence, the total educational expenditure on tertiary institutions is higher, also the private expenditure to tertiary institutions is considerably higher compared to EAG2001.
- A substantial part of student loans in the Netherlands are loans that will be converted into grants when students pass their exams. We estimate the conversion rate of these so called 'prestatiebeurzen' (performance grants) at more than 90%. In the 1998 data, these loans/performance grants were reported as student loans. In the 1999 data these loans/performance grants are reported as grants. As a consequence the proportion of loans in the total public expenditure is lower in EAG 2002.

Portugal: Regional and local transfers to the private sector are not included. Local direct expenditure on educational institutions is not included.

Turkey: Regional direct expenditure on educational institutions is not included.

United States: Funds for major federal R&D centres administered by universities are excluded. Pre-primary education only includes pre-primary classes in public and private primary schools. It excludes independent private schools, which provide a large part of pre-primary education.

Interpretation

Denmark: Data on expenditure at the tertiary level include all expenditure on R&D at the tertiary level in EAG 2001 and 2002. Comparisons with previous editions cannot be made due to significant underestimation of expenditure in previous editions.

Finland: Programmes of tertiary-type B are being abolished. The last intake to 5B programmes was in autumn 1998. Expenditure on 5B programmes is hence decreasing. At the same time, polytechnic education (tertiary-type A) is rapidly growing, as is also expenditure on 5A programmes.

Sources

See Indicator B1.

INDICATOR B3: Total public expenditure on education

- **Changes in total public expenditure in comparison with earlier editions**

The theoretical framework underpinning the calculation of total public expenditure has been provided for many years by the United Nations' publication *A System of National Accounts*, which was released in 1968. An updated version was released in 1993 (commonly referred to as SNA93). Notes on specific countries

See notes on Indicator B2.

Finland: Public expenditure on educational institutions includes some private expenditure.

INDICATOR B4: Relative proportions of public and private investment in educational institutions

Notes on specific countries

See notes on Indicator B2.

INDICATOR B5: Support for students and households through public subsidies

Notes on specific countries

See notes on Indicator B2.

Canada, Denmark and Germany: Subsidies in kind, such as free or reduced-price travel on public transport systems, is excluded.

Czech Republic: Some scholarships awarded by central government are included in direct payments to educational institutions.

Ireland: Students in tertiary education benefit from subsidised travel on the bus and rail systems, which are owned and funded by the State. The expenditure involved in this subsidy is currently unknown. Students in tertiary colleges and universities can make use of limited on-campus medical facilities funded both from central (exchequer) grants and from registration fees paid by the students themselves. The level of government funding in this area is not known.

Switzerland: Fees for health insurance are publicly subsidised for students from low-income backgrounds. These subsidies amount to several tens of millions of Swiss francs but are excluded.

INDICATOR B6: Expenditure on institutions by service category and by resource category

See also notes on Indicators B1 and B2.

Notes on specific countries

Coverage of ancillary services

Expenditure by educational institutions on ancillary services, such as student meals, boarding and housing on campus and student transportation should include fees paid by students and families for those services. However, countries have uneven coverage of private spending on ancillary services. While a number of countries exclude private spending on ancillary services, Australia, France, Hungary, Spain, Turkey and the United States provide information on private spending on ancillary services.

Ireland: Ancillary services at the primary to post-secondary non-tertiary level include only school transport.

R&D coverage

Canada: Sponsored research is currently being reported in the UOE data collection without overhead costs. Total expenditure on R&D is therefore underestimated.

France: Expenditure on R&D excludes all funds specifically allocated to R&D, such as subsidies, contracts and special funds. These are included in the OECD/DSTI reporting and account for approx. 0.2 per cent of GDP, or 50 per cent of total expenditure on R&D.

Ireland: Some expenditure on R&D, which is reported to DSTI, is excluded from UOE reporting (16.5 million IEP). This accounts for approx. 10 per cent of all expenditure on tertiary R&D, and for 2 per cent of total expenditure on ISCED 5 and 6.

Mexico: Expenditure on separately funded or separately budgeted research only.

Netherlands: Spending on R&D in tertiary education by private non-profit organisations, business enterprises and abroad is excluded (*derde geldstroom*). This accounts for 26 per cent of all spending on R&D, or 0.08 per cent of GDP.

Notes on distribution of current and capital expenditure

Canada: Current expenditure in independent private institutions at ISCED 5B includes capital expenditure.

Hungary: The significant decrease in government support for capital expenditure in tertiary education can be attributed to the fact that substantial investments were made in the previous year, 1997.

Italy: In comparison with previous editions, educational expenditure by resource category shows a lower percentage of staff compensation (for teaching and non-teaching staff) and a higher percentage of other current expenditure. This is due to the introduction of a new tax, “IRAP”, and to the concurrent abolition of some additions to gross salaries.

Japan: Expenditure on part-time employees is included in current expenditure other than compensation of personnel.

Sweden: School and university buildings are rented. Payments for rent are included in current expenditure.

Sources

See Indicator B1.

CHAPTER C: ACCESS TO EDUCATION, PARTICIPATION AND PROGRESSION

INDICATOR C1: School expectancy and enrolment rates

■ General notes

Methodology

- **Reference dates**

Statistics that relate participation data to population data are published for the reference date that was used by national authorities for these statistics. The assumption is made that age references in the enrolment data refer to 1 January of the reference year. For **Australia**, 30 June is used as the reference date for both enrolments and population data. For **Japan**, 1 October is used as the reference date for ages.

The dates or periods at which students, educational staff and educational institutions were counted have not been provided to the Secretariat by all countries. Some countries collect these statistics through surveys or administrative records at the beginning of the school year while others collect them during the school year, and yet others at the end of the school year or at multiple points during the school year. It should be noted that differences in the reference dates between, for example, enrolment data and population data can lead to errors in calculation (*e.g.*, net enrolment rates exceeding 100 per cent) where there is a significant decrease or increase over time in any of the variables involved. If the reference date for students' ages used in the enrolment data differs from the reference date for the population data (usually 1 January of the reference year), this can be a further source of error in enrolment rates.

Sources: *For OECD countries see Indicator B1.*

Table C1.1

Methodology

School expectancy (in years) under current conditions excludes all education for children younger than five years. It includes adult persons of all ages who are enrolled in formal education. School expectancy is calculated by adding the net enrolment rates for each single year of age. Data by single year of age are not available for ages 30 and above. For persons aged 30 to 39, enrolment rates were estimated on the basis of five-year age bands, and for persons 40 and over, enrolment rates were estimated on the basis of the cohort size of 39 year-olds.

Notes on specific countries

Australia: Students participating in Open Learning Courses and two private universities are excluded. Pre-primary enrolment is not included when males and females are reported separately. It is assumed that the overwhelming majority at the pre-primary level would be in full-time education. University enrolments now exclude all students in overseas campuses. There are breaks in series in ISCED 2, 3, 4 and 5B enrolments in the Vocational Education and Training sector, which are now based on AQF data rather than stream data.

Austria: For upper secondary, post-secondary non-tertiary and tertiary-type B education the age group 25 to 29 years could not be broken down by single year of age. Age distribution for tertiary-type B education (ISCED 5B) is estimated. Enrolments of auxiliary nurses in training programmes were included for the first time, adding 1000 enrolments to upper secondary education (ISCED 3).

Belgium: Data concerning entrepreneurship training courses (ISCED 4B part-time education) and apprenticeship training courses (ISCED 3 full-time education) are *not included* for the Flemish Community. Data for independent private institutions are *not available.* Since institutions of this type are not very numerous, data for all types of institution are only slightly underestimated. There is no longer a distinction between public and private institutions in tertiary-type A and B 'hogescholen' and full-time and part-time university education (ISCED 5A and 6).

Finland: Data on full-time students include both full-time and part-time enrolments. Students are not classified into full-time and part-time students on the basis of their study activities. Enrolment at ISCED 0 non-school establishments (children's day care centres and kindergartens: 95 per cent) is estimated. The estimate is based on information supplied by individual municipalities to Statistics Finland and information from the National Research and Development Centre for Welfare and Health.

Germany: Students pursuing doctoral studies (ISCED 6) are not obliged to register at university and it is not possible to estimate their number.

Hungary: The distribution of students aged 26 to 29 and 31 to 40 by single year is estimated for tertiary-type A and advanced research programmes. The age distribution for tertiary-type B students has been estimated from the age distribution for tertiary-type A education.

Ireland: Nursing students who follow a type of dual training, with education and training taking place in hospitals only, are *excluded*. Most but not all adult education is excluded. Adult education includes

part-time studies at ISCED 3 and 5 undertaken by persons returning to education after an interruption of some years. Most pre-primary enrolments are *included* because data are not collected from many privately owned pre-schools. Coverage of part-time enrolment data is uneven. Many part-time students in independent private colleges at ISCED levels 3 and 5 have been *excluded*. Only full-session part-time students (doing courses lasting approximately the full year) have been *included* in the data.

Italy: Age distribution is not available for advanced research programmes.

Japan: Estimates are provided for enrolment by age in primary and secondary education on the assumption that all students at the same grade are of the same age. Part-time enrolment at the upper secondary level includes students in correspondence courses at upper secondary schools. A part-time student equals one full-time equivalent at this level. Part-time students at the tertiary level include students studying by correspondence (including the University of the Air) and persons attending any type of college. A part-time student again equals one full-time equivalent. Special Training Colleges (general courses) and Miscellaneous Schools (there is no entrance requirement for these schools/courses) are not allocated by level.

Spain: Under the new education system, lower secondary education has been increased from 2 years to 4 years and upper secondary education has been decreased from 4 years to 2 years.

Turkey: Data for under 5-year-olds are included in pre-primary education.

Table C1.2

Notes on specific countries

Belgium, France and Iceland: The enrolment rates for 3 to 4-year-olds exceed 100 per cent. This is due to the fact that a large number of children below the age of 3 are enrolled in formal education and are included in Table C1.2 (between 15 and 25 per cent of the total number of children enrolled under the age of 4).

Japan and Portugal: Net enrolment rates exceed 100 for some ages because there are different reference dates for school enrolment and demographic data.

Spain: Net enrolment rates exceed 100 in some cases. The reason lies partly in the nature of the population forecasts by the National Institute of Statistics, and partly in a possible over-reporting of enrolments by schools.

United Kingdom: Data cover enrolments in schools only. Therefore enrolments for 3 to 4 year-olds are underestimated.

Chile: Data exclude participation in tertiary education.

Egypt: Data exclude participation in post-secondary and tertiary education.

Jamaica: Data exclude participation in tertiary education.

Jordan: Data exclude participation in tertiary education.

Paraguay: Data exclude participation in upper-secondary vocational programmes and tertiary type 5A/6 education.

Tunisia: Data exclude participation in tertiary education.

Zimbabwe: Data exclude participation in tertiary education.

INDICATOR C2: Entry to and expected years in tertiary education and participation in secondary education

Table C2.1

Methodology

- **Calculation of net entry rates**

The net entry rates given in Table C3.1 represent the proportion of persons of a synthetic age cohort who enter a certain level of tertiary education at one point during their lives. The net entry rate is defined as the sum of net entry rates for single ages. The total net entry rate is therefore the sum of the proportions of new entrants to tertiary-type A and B aged *i* to the total population aged *i*, at all ages. Since data by single year are only available for ages 15 to 29, the net entry rates for older students are estimated from data for 5-year age bands.

- **Calculation of gross entry rates**

In the case where no data on new entrants by age were provided gross entry rates are calculated. Gross entry rates are the ratio of all entrants, regardless of their age, to the size of the population at the typical age of entry. Gross entry rates are more easily influenced by differences in the size of population by single year of age. Taking into account the effect of changing cohort sizes, all gross rates presented here were tested for possible error. The error is well below five percentage points.

- **Calculation of age at the 25th, 50th and 75th percentiles**

The ages given for the 25th, 50th and 75th percentiles are linear approximations from data by single year of age. The *i*-th percentile is calculated as follows: let age *k* be the age at which less than *i* per cent of new entrants are younger than *k* years of age and more than *i* per cent are younger than *k*+1. If *P(<k)* is the percentage of new entrants aged less than *k* and *P(k)* the percentage of new entrants aged *k*, then the age at the *i*-th percentile is k + (i-P(<k) / (P(k).

■ **Notes on specific countries**

Czech Republic: Only new entrants to full-time education are included for tertiary-type A programmes.

Hungary: The age distribution for part-time students is estimated, and the age distribution of full-time students is estimated on 1999 data

Turkey: Excludes open university faculties.

■ **Table C2.2**

Methodology

- **Change in total tertiary enrolment**

The change in total tertiary enrolment is expressed as an index, the base year of which is 1995 (100). The number of tertiary students in 2000 is therefore expressed as a percentage of the number of tertiary students in 1995. The impact of demographic change on total enrolment is calculated by applying the enrolment rates measured in 1995 to the population data for 2000: population change was taken into account while enrolment rates by single year of age were kept constant at the 1995 level. The impact of changing enrolment rates is calculated by applying the enrolment rates measured in 2000 to the population data for 1995, i.e., the enrolment rates by single year of age for 2000 are multiplied by the population by single year of age for 1995 to obtain the total number of students that could be expected if the population had been constant since 1995.

■ **Notes on specific countries**

Germany: Excludes advanced research programmes.

Hungary: See comment for Table C2.1.

■ **Tables C2.3 and C2.4**

Classification

Educational institutions are classified as either public or private according to whether a public agency or a private entity has the ultimate power to make decisions concerning the institution's affairs. The extent to which an institution receives its funding from public or private sources does *not* determine the classification status of the institution. An institution is classified as ***private*** if it is controlled and managed by a non-governmental organisation (*e.g.*, a Church, a Trade Union or a business enterprise), or if its Governing Board consists mostly of members not selected by a public agency. The terms "***government-dependent***" and "***independent***" refer only to the degree of a private institution's dependence on funding from government sources; they do not refer to the degree of government

direction or regulation. A government-dependent private institution is one that receives more than 50 per cent of its core funding from government agencies. An independent private institution is one that receives less than 50 per cent of its core funding from government agencies.

- **Table C2.5**

- **Notes on specific countries**

Sweden: The figures specified "by programme destination" do not add up to 100%: Adult education at ISCED level 3 can not be classified according to destination.

INDICATOR C4: Participation in continuing education and training in the adult population

- **Notes on specific countries**

Sources

Portugal: Data reported on job-related training is not comparable.

Sweden: Data reported on job-related training is not comparable.

Annex 3 – Chapter C – Table 4.1: Sources on national household surveys on adult education and training (Indicator C4)

Annex 3 – Chapter C – Table 4.2: Participation of the population of 25 to 64-year-olds in job-related continuing education and training

INDICATOR C5: Education and work of the youth population

- **General notes**

Sources

See notes on indicator A12.

INDICATOR C6: The situation of the youth population with low levels of education

General notes

The target group is defined as follow: persons 20-24 years old which are not enrolled in education nor in a work study program and have not attained a diploma in upper secondary education (ISCED 3)

Sources

See notes on indicator A12.

CHAPTER D: THE LEARNING ENVIRONMENT AND ORGANISATION OF SCHOOLS

INDICATOR D1: Total intended instruction time in classroom settings in the formal education system for students 9 to 14 years of age

General notes

Methodology

Tables D1.3a and 1.3b.

List of possible subjects under the headings used in Indicator D1:

Reading, writing, and literature: reading and writing, (and literature) in the mother tongue, reading and writing (and literature) in the language of instruction, reading and writing in the tongue of the country (region) as a second language (for non natives), language studies, public speaking, literature.

Mathematics: mathematics, mathematics with statistics, geometry, algebra, etc.

Science: science, physics, physical science, chemistry, biology, human biology, environmental science, agriculture/horticulture/forestry.

Social studies: social studies, community studies, contemporary studies, economics, environmental studies, geography, history, humanities, legal studies, studies of the own country, social sciences, ethical thinking, philosophy.

Modern foreign languages: foreign languages.

Technology: orientation in technology, including information technology, computer studies, construction/surveying, electronics, graphics and design, keyboard skills, word processing, workshop technology / design technology

Arts: arts, music, visual arts, practical art, drama, performance music, photography, drawing, creative handicraft, creative needlework.

Physical education: physical education, gymnastics, dance, health

Religion: religion, history of religions, religion culture, ethics

Practical and vocational skills: vocational skills (preparation for specific occupation), technics, domestic science, accountancy, business studies, career education, clothing and textiles, driving, home economics, polytechnic courses, secretarial studies, tourism and hospitality, sloyd (handicraft).

Other: Subjects that cannot be classified under one of the above headings.

- **Notes on specific countries**

- **Tables D1.1, D1.2a and D1.2b**

Coverage

Czech Republic:

As geography includes science issues, 25 per cent of geography lessons were added to the science subject area and 75 per cent to the social studies subject area.

Greece:

For students aged 10 and 11 years, *Other* includes the subject “Civic Education” (one hour per week). For students aged 12, 13 and 14 years, *Other* includes the subjects Ancient Greek Literature (Grade 7: four hours per week, Grade 8: four hours per week, Grade 9: four hours per week), Civil Education (Grade 9: two hours per week) and Domestic Economics (Grade 7: one hour per week, Grade 8: two hours per week).

Hungary:

The large difference between the 9 to 11 and 12 to 14 age groups is due to the fact that schools in the 6th grade follow the 1978 curricula, while schools in the 7th and 8th grades follow the new curricula (National Core Curricula). There are fewer compulsory lessons in the National Core Curricula compared to the 1978 curricula.

This year, geography is defined as part of social studies. Last year, this subject was included in science.

Ireland:

The curriculum for primary schools is an integrated curriculum and envisages an integrated learning experience for children. The learning experiences organised for children should facilitate cross-curricular activity. To assist schools in planning the implementation of the curriculum, a time framework is suggested that allocates a minimum time to each of the curriculum areas. There should be four hours and ten minutes per day. A period of two hours per week of 'Discretionary Time' is allowed in order to accommodate different school needs and circumstances, and to provide for the differing aptitudes and abilities of the pupils. This is included under 'Compulsory Flexible Curriculum'.

Time allocation is based on the following weekly framework for a 36.6-week school year in primary education: English (4 hours), Irish (3.5 hours), Mathematics 3 hours), Social, Environment and Scientific Education (3 hours), Social, Personal and Health Education (0.5 hours), Physical Education (1 hour), Arts Education (3 hours), Discretionary Curriculum time (1 hour), Religious Education (2.5 hours), Assembly Time (1.6 hours), Roll Call (0.8 hours) and Small Breaks (0.8 hours).

All curriculum in primary education is obligatory for all pupils except those with special educational needs. Children are granted exemption from Religious Instruction at the request of their parents or guardians. The figures on Social Studies include time for Science. 'Other' (primary education) includes Social, Personal and Health Education, Assembly Time, Roll Call and Small Breaks.

The Curriculum for the 12 to 14 year age group (lower secondary education) consists of compulsory subjects and approved subjects. The compulsory subjects are Irish, English, Mathematics and Social Studies (includes History, Geography, and Civic, Social and Political Education). In TablesD1.2a and D1.2b, the total compulsory part of the curriculum includes English and Irish, Mathematics and Social Studies (History, Geography, and Civics, Social and Political Education). Students must also take two subjects from the following list of approved subjects: Latin, Greek, Spanish, Italian, French, German, Science, Technology, Home Economics, Music, Art/Craft/Design, Materials Technology, Metalwork, Technical Graphics, Business Studies, Typewriting and Environment. In practice, most schools offer and take three rather than two of the above list of approved subjects. Because most students take Science and at least one foreign language from the list of approved subjects, these two subjects have been entered in the data as compulsory subjects and the third subject taken by most students has been entered under non-compulsory curriculum. It is intended that Religion and Physical Education should form part of the curriculum in all schools. While there are some differences between the core subjects provided in the different types of lower secondary schools, all schools require pupils to take Irish and English. There are no regulations governing the precise amount of time to be spent each year on teaching the individual subjects of the curriculum.

Japan:

In lower secondary education, modern foreign languages are elective but almost all the students learn one language. Arts are divided into arts and music. 'Other' includes Moral Education and Special Activities.

Netherlands:

The duration of one classroom session may vary in primary education (i.e., students aged 9 to 11 years).

New Zealand:

Modern foreign languages are not compulsory at any level and includes community languages as well as international languages. Time spent on these languages is included in the Reading, writing and literature time.

Norway:

'Other' includes Music, Domestic Science/Home Economics, Class council and Students' council.

In the compulsory flexible curriculum, pupils may choose a second foreign language or practical project work. Schools may consider a part of the compulsory core curriculum to be compulsory flexible. This comprises 38 lessons for students 10, 11 and 12 years of age, and 14 lessons for students aged 13 and 14 years.

Portugal:

Technology includes visual and technology education, which are taught by two different teachers. In Religion, students (and their families) may choose either this area or another, called 'Personal and Social Development'.

The flexible curriculum is 3 hours per week and students may choose a second foreign language, Technology or Music over 34 school weeks or 10 per cent of instruction time. The non-compulsory curriculum includes activities such as clubs (European club, Health club, sports, arts, technology), however it is not possible to estimate the number of hours that school allocates for the development of such activities.

Scotland:

In primary schools, 15 per cent of instruction time is allocated to Environmental Studies, which refers to Science, Social subjects (History, Modern Studies etc.), Technical Education and Home Economics. Fifteen per cent of instruction time is allocated to 'Expressive Arts', which refers to Music, Art, Physical education and Drama. Fifteen per cent of instruction time is allocated to Religion, which includes religious and moral education, personal and social development and health education. In lower secondary education, the grouping of subjects is the same, although proportions differ.

Spain:

In primary education, Science and Social studies are considered as one subject, with the objective being that students become aware and learn about their natural and social environment and context. It is assumed that an equivalent amount of time is devoted to each of these subjects, so the total time was sub-divided into two equal parts.

Students can choose 'Religion' or 'Socio-cultural activities' in primary education, and 'Religion' or 'Society, Culture and Religion' in lower secondary education. Although the subject matter is optional,

the time to be devoted to one of the two is compulsory, so it has been included in the compulsory flexible curriculum. For 13 and 14-year-old students, a certain number of hours per year are allocated for optional subjects. These subjects vary from one school to another.

Switzerland:

Data refer to teachers in public education.

Interpretation

Australia:

Data are not available on total non-compulsory curriculum in some States/Territories, but many schools provide more than the compulsory flexible curriculum. The above non-compulsory curriculum estimate should be taken as a minimum. The main change from last year is that many States and Territories have moved to an outcomes-based system, and therefore the flexible part of the curriculum has increased, while the compulsory core subject times have decreased.

Belgium (Flemish Community):

In the Flemish Community of Belgium, the government prescribes the attainment targets that must be strived for and reached by the majority of pupils in the level and the discipline they are in. The teaching methods, the curricula and the timetables are the responsibility of the organizing bodies of the schools. The curricula, however, have to include the (subject-related) attainment targets whilst timetables in secondary education must respect a basic training composed of a certain number of general subjects. This part of the study package, the common part, is equal for all pupils of the same year. From the 2nd grade (pupils 14 years old) the common part is equal for all pupils of the same year of general, technical, artistic and vocational secondary education. Next to that, pupils can select several specific subjects, depending on line of study; this is the optional part.

For the grade in which the majority of the students are 12 years-of-age, instruction time refers to first-year A (and not first-year B). For the grade in which the majority of students are 13 years-of-age, instruction time refers to the second year, not the vocational preparatory year. Data on the curriculum in upper secondary education could not be provided. Pupils must select a direction of study within general, technical, artistic or vocational secondary education from the 2nd grade. The maximum total intended curriculum in technical, artistic and vocational secondary education is 1074 hours. The maximum total intended curriculum per year in general secondary education is 955 hours (see Table D1.1).

Czech Republic:

In Czech Republic, pupils in primary education can attend schools with three different types of curricula. In lower secondary education (up to grade 9), students can attend two types of schools with four different curricula. More than 80 per cent of students in grades 6 to 8 and approximately 75 per cent in grade 9 attend the *Zakladni skola* curriculum. Although the school principal decides on the number of lessons per subject per grade; minimum figures per subject per week for grades 6 to 9 together (i.e., for lower secondary education), number of compulsory elected lessons per week for

grades 7 to 9 together (i.e., flexible part of compulsory curriculum), and the total minimum number of lessons per week (i.e., total compulsory curriculum) for each grade are specified in the *Zakladni skola*.

Denmark:

The minimum number of lessons for each grade is regulated by law, but not the number of lessons for each subject, which is decided at the municipal level. The breakdown of figures in the table follows the national guidelines for the distribution of lessons.

Finland:

National regulations specify only the minimum number of lessons to be devoted to specific subjects. It is not specified at what grade levels the various subjects are to be introduced nor are there upper limits of the number of lessons for any subject. The distribution of lesson hours for various students can therefore differ between different schools and even within the same school. The flexibility of the distribution of lesson hours allows teachers to develop programs in accordance with the specific characteristics of the school and its students.

In lower secondary education (upper level of the comprehensive school), over the compulsory minimum lessons students have a total of 90 lessons per school year of which minimum 70 should be further spent on the compulsory subjects and maximum 20 can be spent on other, non-compulsory (elective) subjects. In addition to the lessons, students receive study and career counselling.

New Zealand:

The range of times reported by schools varies considerably. For example, the range of times given for English for students aged 9 to 11 years was from 3 hours and 20 minutes to 10 hours. The national curriculum is specified through seven learning area statements. State and state integrated schools are required to provide programmes of learning based on the statements for all students in years 1 to 10. However how the schools do this is not prescribed either in terms of time allocations or programme/timetable arrangements.

Portugal:

For students 9 years of age in primary education, the curriculum does not specify the amount of hours per week allocated to each area; it only indicates the total amount of hours per week, i.e., 25-hour curriculum areas include Physical education, music, drama and plastic education; Environment studies; Portuguese language; Mathematics; Religion or Personal and Social Development. Teachers may allocate the time for each subject area according to the characteristics and the development of the work in each class up to a total amount of 25 hours per week.

Scotland:

The organisation of the school day - such as the number of periods of instruction time and the length of those periods - is at the discretion of each school. For example, a school day which is made up of 5 periods of 60 minutes duration would have 25 hours instruction time per week, while a school day comprising 8 periods of 40 minutes per day would have 26 hours 40 minutes instruction time per week.

The curriculum in Scotland is not prescribed by statute and the responsibility for the management and delivery of the curriculum belongs to education authorities and head teachers. However, guidance is provided by the Scottish Executive Education Department and Learning and Teaching Scotland, which seek to ensure that the curriculum secures breadth, balance, continuity and progression for all pupils.

Spain:

The government of each Autonomous Community states the curriculum for that Community. This must necessarily include the compulsory curriculum prescribed by the central government, which is 55 per cent of the school time for those Communities with a second official language and 65 per cent for the rest. The main differences between the Communities relates to the mother-tongue language. For those Communities with their own language, twice as much time is devoted to the mother-tongue language (half for the Spanish and half for the Community language).

Methodology:

Australia:

Where data for States are unknown, they have been assumed to equal New South Wales (Western Australia in the case of South Australia). Most Australian States and Territories are now focussed on outcomes, not inputs, so these data are indicative only. Classroom session times usually differ between States and Territories, and between individual schools within States and Territories. Curriculum information is therefore given in hours, as it is not possible to combine and weight States and Territories without standardising the session duration between them.

Czech Republic:

Intended instruction time was computed by weighting figures for each curriculum by student enrolments, and then multiplying the minimum number of lessons per grade by the weight of the subject area in total lower secondary curriculum. Extremely small values for some subject areas appear when these subjects are included only in curricula with few enrolments.

Finland:

Data are calculated on the basis of the Council of State resolution on minimum hours per week. This document indicates the total number of lessons per week over the primary and the lower secondary years respectively. The figures for any grade are calculated as annual averages calculated from the total.

Modern foreign languages include also ‘second national language’, i.e. students who have a mother tongue other than Finnish (e.g. Swedish) learn Finnish as a ‘second national (domestic) language’ and vice versa, Finnish students learn Swedish as a ‘second national (domestic) language’. The instruction methods are those used in foreign language teaching.

Students are taught a non-domestic foreign language as a compulsory elective subject (students can choose which language they study).

Besides compulsory foreign language in primary education there is also a non compulsory foreign language. The study of those foreign languages can start in any grade at the primary level. In Table D1.2 the total number of hours available for students in the non compulsory foreign language at the primary level is attributed to the 9 to 12 year cohorts.

Greece:

Intended instruction time was computed by multiplying the number of teaching hours for lessons per week by the number of teaching weeks.

Ireland:

In primary education, the duration of one lesson may vary. The figures are based on number of hours instead of number of lessons. A *pro forma* value of one hour has been entered as the length of one classroom session.

In lower secondary education, the allocation of instruction time represents an estimation of what is the general practice in schools. The yearly figures are calculated with reference to the Rules and Programme for Secondary Schools and on an estimate of their application in a typical school of 700/800 students. The flexible compulsory part of the curriculum is calculated by assuming that all schools offer two additional subjects from the list of approved subjects and allocate four teaching periods of 40 minutes to each of these subjects.

Spain:

All figures represent averages of the number of hours per year devoted to each subject in each Autonomous Community in 1999-2000, weighted by the number of students in each Community for each level of education to which the grade refers (data on the number of students by grade are not available). Time devoted to breaks, festivities and holidays has been deducted.

Sweden:

Intended instruction time per year for each school subject is not regulated nationally and the duration of one classroom session may vary. It is decided locally. Thus, intended instruction time for students aged 9 to 14 has been estimated by dividing the total number of hours per required school subject over the nine years of compulsory education. This may mean that the intended instruction time for certain school subjects may be overestimated in some age groups and underestimated in others. Another consequence is that total intended instruction time might be underestimated, especially for ages 12 to 14, as instruction time for students 7 to 9 years of age.

Sources

Australia:

New South Wales policy; Victorian schools' annual reports; Education Queensland; the Education Act 1999 (WA); data from South Australia obtained from schools; the Tasmanian education department; the "Common Curriculum Statement" (NT Board of Studies, 1998); and Australian Capital Territory policy documents and telephone survey. Sources include actual and published data; individual school

collections; surveys; calculations based on recommended minimums provided in policy documents; and document searches.

School year: 2000 (except South Australia and the Northern Territory (1999) and the Australian Capital Territory (2001).

Austria:

Law or policy document based on law.

School year: 1998-1999.

Belgium (Flemish Community):

Decrees and resolutions. Data on lower secondary education are based on the lesson tables of subsidised private (catholic) education (i.e., government dependent private education).

School year: 1999-2000.

Belgium (French Community):

Circulaire ministérielle A/99/14 du 31 /O5/99.

School year: 1999-2000.

Czech Republic:

Curriculum specification documents, National statistics (data on enrolments).

School year: 1999-2000.

Denmark:

Act on the *folkeskole*.

Finland:

Council of State resolution on minimum hours per week

School year: 1999-2000.

France:

Law or policy document based on law.

School year: 1999-2000.

Germany:

Law or policy document based on law (data based on formal arrangements) (1999) and national statistics school year (1999/2000).

School year: 1999-2000.

Greece:

Law or policy document (data based on formal arrangements).

School year: 1999-2000.

Hungary:

Weekly curricula for primary schools (1998) *M_vel_dési Közlöny*. 9. sz; National Curriculum 1978; Public Education Act 1993; The Amendment of the Public Education Act 1996.

School year: 1999-2000.

Iceland:

Reference year: 1999-2000.

Source: Regulation on Lessons in Compulsory School 437/1996.

Methodology: Number of lessons per week x 35 weeks.

Ireland:

Official circulars.

School year: 1999-2000.

Italy:

Law or policy document based on law. For primary education: D.P.R. 104/1985 "Programmi didattici per la scuola primaria" and L. 148/1990 "Riforma dell'ordinamento scuola elementare".

School year: 1999-2000.

Japan:

Shogakko-Gakushu-Shido-Yoryo (The Course of Study in Elementary Schools 1989), and Chugakko-Gakushu-Shido-Yoryo (The Course of Study in Lower Secondary Schools 1989), Ministry of Education, Science, Sports and Culture.

School year: 1999.

Korea:

Primary School Curriculum (Ministry of Education, 1995) and Middle School Curriculum (Ministry of Education, 1992).

School year: 2000.

Mexico:

Secretaría de Educación Pública, Normas de inscripción, reinscripción, regularización y certificación para escuelas primarias oficiales y particulares incorporadas al sistema educativo nacional periodo escolar 2000-20001, Agosto 2000, México.

Secretaría de Educación Pública, Normas de inscripción, reinscripción, regularización y certificación para escuelas secundarias oficiales y particulares incorporadas al sistema educativo nacional periodo escolar 2000-20001, Agosto 2000, México.

School year: 1999-2000.

Netherlands:

Primary education is based on empirical data (PRIMA cohort) and lower secondary education is based on law (WVO).

School year: 1999-2000.

New Zealand:

Report of the Committee on Length of School Day and School Year.

School year: 1998.

Norway:

National Curriculum.

School year: 1999.

Portugal:

Law or policy document: i) Despacho 10320/99 - Organization of the school year ii) Decreto-Lei 286/89 - Basic and Secondary Education National Curriculum

School year: 1999-2000.

Scotland:

School year: 1999-2000.

Spain:

Official regulations of the Autonomous Communities regarding instruction time in primary and lower secondary education (published in the respective official bulletins). The publication date is different in each Autonomous Community.

School year: 1999-2000.

Sweden:

Law or policy document based on law (data on formal arrangements).

School year: 2001.

Switzerland:

Law or policy document based on law: Lehrkräfte 1998/99, Bundesambt für Statistik, LCH Dachverband Schweizer Lehrerinnen und Lehrer

School year: 1998-1999.

Turkey:

Regulations of Primary Education Institutions, 1992; Lesson Table of Primary Schools, 1999.

School year: 1999-2000.

- **Table D1.2:**

Interpretation

Hungary:

The difference between 1996 and 2000 data can be partly explained by the fact that geography was put into a different category in the two years.

Italy:

Some data are missing due to a change in the age of reference for 12 to 14-year-olds between 1996 and 2000.

Spain

In 1996, 13 and 14-year-olds were in the last two years of primary education. The new education system was implemented in 2000, meaning that students at this age were in the 1st and 2nd grade of lower secondary education. Thus, new subject matter was added to the curriculum, causing a reduction in time devoted to mother tongue, foreign languages, maths and science.

INDICATOR D2: Average class size and ratio of students to teaching staff

Notes on specific countries

Coverage

Table D2.1.

Iceland: Multi-grade classes are included in the calculation of average class size.

Table D2.2.

Belgium: In the case of personnel working in "hogescholenonderwijs" it is not possible to make a distinction between type A and type B programmes. However, all "hogescholenonderwijs" personnel are included in the total for higher education.

Finland: Upper secondary education *includes* teachers in all vocational and technical programmes. Teachers at post-secondary non-tertiary and tertiary-type B levels (ISCED 4 and 5B), and teachers in vocational programmes at tertiary-type A level (ISCED 5A), are included in upper secondary education.

Germany: As data on the work-based element of combined school and work-based programmes are not available, the number of students in combined school and work-based programmes is converted using a factor of 0.4 in the calculation of the ratio of students to teaching staff.

Data on advanced research programmes (ISCED 6) are not included in Table D2.2.

Ireland: Programmes at lower secondary, upper secondary and post-secondary non-tertiary levels are generally provided in the same institutions (i.e., secondary schools) and are taught by personnel who teach at more than one level and in many cases at all three levels. It is therefore not feasible to provide a breakdown for teachers by level of education. Thus, the distribution of teachers by age group in lower secondary education *includes* teachers in upper secondary and post-secondary non-tertiary education.

Italy: Teaching staff *excludes* teachers working in regional vocational education (Formazione professionale regionale) and those in tertiary type-B private institutions.

United Kingdom: Students to teaching staff ratios at upper secondary level only refer to upper secondary general education. Upper secondary vocational (further education) student data are based on a "whole-year count" (of students enrolled at any point in the year). Students enrolled for only part of the year, on "short courses" lasting a few weeks or months, are included in the further education student count. Including these students would distort calculations of students to teaching staff ratios at secondary level

INDICATOR D6: Salaries of teachers in public primary and secondary schools

- **Notes on specific countries**

- **Tables D6.1 and D6.2**

Australia:

Sources: The sources were New South Wales policy; Teaching Service Orders and Teachers' (Victorian Government Schools) Conditions of Employment Award 1995; Education Queensland; Western Australia: Government School Teachers' and School Administrators' Certified Agreement 1998; South Australia Award (salary steps); Tasmania 2000 award; 2001 Teacher of Exemplary Practice Handbook, 1998 School Policy Handbook; Northern Territory Department of Education and Australian Capital Territory Certified Agreements.

Methodology: The methodologies used included actual data; reference to Certified Agreements; Awards files; document searches & information provided by Human Resources Services; and data as printed.

Reference year: 2000 school year (excepting Northern Territory and Australian Capital Territory, for which the reference school year is 2001).

Austria:

Sources: Staff and salary legislation on teachers (BeamtenDienstrechtsgesetz; Landeslehrer-Dienstrechtsgesetz; Gehaltsgesetz).

Coverage: All teachers employed by the Federation *(Bund)* or the *Länder*. Teachers employed by the *Länder* are compulsory school teachers.

Belgium (Flemish Community):

Sources: Budget and Data Management Division, Ministry of the Flemish Community

Reference year: School year 1999-2000 (01/01/2000).

Belgium (French Community):

Sources: Service général de l'Informatique et des statistiques.

Reference year: School year 1999-2000 (01/01/2000).

Czech Republic:

Source: Government decree.

Reference year: School year 1999-2000.

Denmark

Sources: Collective agreements with teacher-unions.

Coverage: Data on salaries include the teacher's contribution to the pension fund, but not the employer's contribution to the pension fund. This is a change from Education at a Glance 2001 and it is therefore not possible to compare data from previous editions of Education at a Glance with this edition. Data do not include the individual awarded part of the salaries (increments). The local cost of living allowance is included with the highest rate.

Reference year: School year 1999-2000.

Finland

Source: Statistics Finland.

Reference year: 2000.

France

Nature of sources: Law and policy documents based on law, national statistics.

Reference year: School year 1999-2000.

Germany

Nature of sources: Law and policy documents based on law, national statistics.

Reference year: School year 1999-2000.

Greece

Source: Salary Reforming Law 2470/1997.

Reference year: Fiscal Year 1999 (1/1-31/12/99).

Hungary

Sources: Act on Public Employees 1992; Public Education Act 1993; Government Decree 138/1992; National Labour Centre of the Ministry of Economic Affairs database.

Methodology: Annual statistical survey on individual earnings, carried out in May each year.

Coverage: The survey covers all institutions in the public sector excluding armed forces. As the overwhelming majority of public educational institutions belongs to municipalities, the data collection covers nearly 100 per cent of teachers in the public sector. Data in Table D6.1 refer to the average values of teachers' salaries and include additional bonuses.

Reference year: May 2000.

Ireland

Sources: Official circulars.

Reference year: School year 1999-2000.

Italy

Sources: C.C.N.L. Comparto Scuola and CCNL Integrativo Comparto Cuola.

Reference year: School year 1999-2000.

Iceland

Reference year: 1999

Source: Wage contract between the Teachers' trade Union of Iceland and municipalities and the state, 1998-2000

Japan

Sources: Ippanshoku no shokuin no kyuyo ni kansuru houritsu (Law on salary of public official).

Reference year: 1999.

Korea

Sources: The presidential degree of public servant compensation and allowance, 2) the reference for compilation of the national budget.

Reference year: 2000 (School year: January 1 2000 to February 28 2001).

Mexico

Sources: Teacher salaries were calculated on information from the Ministry of Public Education (Secretaría de Educación Pública) and the National Teachers' Union (Sindicato Nacional de Trabajadores de la Educación).

Reference year: 1999-2000.

Methodology: The data refer to teacher salaries in May 1999.

Netherlands

Source: CAO 98.

Nature of the source: Formal arrangements.

Reference year: School year 1999-2000.

Norway

Sources: Agreements between the Ministry of Education and the Teachers' unions.

Reference year: 1999.

Comment: Norway has increased minimum teacher training requirements from 3 years to 4 year between 1996 and 2000.

New Zealand

Sources: National collective employment contracts.

Methodology: Values are the average of the applicable salary and allowance rates in the years 1999 & 2000. Progression is on an annual basis subject to competent performance, so a teacher would be expected to progress one step each year. Entry points differ according to the level of qualification upon entry into the service. In addition, the maximum step teachers can attain is also dependent upon their qualifications. Data report the number of salary steps between the entry point on the teachers' base salary scale for a minimum qualified teacher and the maximum step of that scale (step 13) however a minimum trained teacher with no permanent units can only progress to step 10. Therefore the 10 years reported assumes a teacher with minimum qualifications who holds permanent units. The number of years it takes a teacher to progress to the maximum salary step is, in practice, dependent upon their qualifications. A teacher with a Bachelors' degree would take seven years to progress to the top of the base scale, a four-year Degree would take six years, and five-year Masters' Degree or better would take five years. In addition, teachers who hold permanent units are entitled to progress to the top of the base scale irrespective of their qualifications.

Reference year: School year 1999-2000.

Portugal

Sources: Ministry of Education, Education Finance Department; Teachers' Career Statute; Collective Work Contract.

Methodology: i) gross annual salary: 5 months 1999 + 9 months 2000; ii) maximum additional bonus = maximum school director bonus.

Reference year: School year 1999-2000.

Scotland

Source: 'Scheme of Salaries and Conditions of Service' document.

Reference year: School year 1999-2000.

Spain

Sources: For public education salaries: official salary tables provided by the financial educational services from all the Autonomous Communities. For private government dependent education salaries: the salary scales included in the Revision for 1999 of the III National Collective Labour Agreement for private government dependent schools (published in the National Official Bulletin of April 9th, 1999).

Methodology: For the salaries in public education, the average teachers' salaries for Spain have been calculated as weighted means of the salaries in the different Autonomous Communities according to the number of teachers in each Community by level of education. For private institutions, the salaries were directly calculated from the tables in the Revision for 1999 of the III National Collective Labour Agreement for private government dependent schools (published in the National Official Bulletin of April 9th, 1999).

Reference year: 1999.

Sweden

Sources: Official statistics on salaries.

Methodology: Since 1996, teachers in Sweden have been awarded individual salaries based upon collective agreements. There are no statutory salaries. All figures are therefore based on average salaries. As statistics are not available according to years of service, figures for salaries of teachers with 15 years of experience refer to the average salaries of teachers who are older than 45 years of age. Breakdown by level of education is estimated. Figures for primary and lower secondary education are averages of salaries for teachers in primary and lower secondary education added, according to the difficulty in classifying teachers by level of education.

Reference date: October 1999.

Switzerland:

Sources: Lehrkräfte 1998/99, Bundesambt für Statistik; LCH Dachverband Schweizer Lehrerinnen und Lehrer.

Nature of sources: Law or policy document based on law; national statistics (data on populations).

Coverage: Teachers in public education.

Reference year: 1998-1999.

■ Table D6.3.

Methodology

Australia: A weighted Australia estimate was manually calculated using teacher numbers in each State/Territory secondary school system to weight the estimate. If half or more of the teachers, as measured by their State/Territory of origin, answered "yes" to a question, the Australia estimate was considered to be "yes". The methodology used by States and Territories included actual data; reference to Certified Agreements; document searches and information provided by Workforce Planning areas.

Interpretation

Australia:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Teachers with higher than minimum qualifications have a higher base salary.

Management responsibilities in addition to teaching duties: Remuneration may take the form of an additional allowance or a promotion.

Holding a higher than minimum level of teacher certification or training obtained during professional life: Remuneration varies by State.

Special tasks: One State/Territory which answered "no" to this criterion stated: "Teachers do not receive direct payment for training student teachers, however the school receives additional funds to be spent on the professional development of teachers."

Teaching in a disadvantaged, remote or high cost area: In some, if not most or all cases, this allowance applies to only a small proportion of the teachers in a State/Territory.

Belgium (Flemish Community):

Other: The Flemish Community decided not to include the "haard- en standplaatsvergoeding" ("home and local allowance") in the gross salaries. These allowances are awarded under certain conditions if the index-linked gross salary does not exceed a fixed sum. Only the index-linked gross salaries of teachers in pre-primary, primary and lower secondary education at the beginning of their teaching

careers are below the fixed sum. Consequently, only those teachers receive a "haard- en standplaatsvergoeding". Depending on the family situation, the minimum allowance is 8.850 BEF, whereas the maximum allowance amounts to 17.700 BEF (January 2000).

Belgium (French Community):

Other: The French Community provides young teachers with a supplementary allowance (allowance of home or residence) according to their family situation, provided that this gross income does not pass a fixed sum.

Czech Republic:

Management responsibilities in addition to teaching duties: This bonus is awarded to deputy school principal. Law states the range of the amount of this bonus.

Teaching students with special educational needs: This bonus is paid to teachers of special classes within regular schools.

Teaching more classes or hours than required by full-time contract: Law states the amount of this bonus.

Age: The head teacher decides if a single bonus is awarded to a teacher when he/she reaches 50 years-of-age or retires.

Denmark:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Some of the additional bonuses of this type are awarded in accordance with national agreements between teacher organisations and the Danish Association of Municipalities and the Ministry of Finance. Others are given in accordance with local agreements at the school-level.

Reaching high scores in the qualification examination: Some of the additional bonuses of this type are awarded in accordance with national agreements between teacher organisations and the Danish Association of Municipalities and the Ministry of Finance. Others are given in accordance with local agreements at the school-level.

Management responsibilities in addition to teaching duties: Teachers' teaching hours will be reduced and sometimes an extra payment over the period of work will be given for serving as a member of the school-management team.

Teaching more classes or hours than required by full-time contract: Conditions are regulated in collective agreements with the teacher unions.

Notes: Teachers' teaching hours will be reduced over the period of work will be given for serving as an educational guidance officer. In accordance with some of the national agreements, older teachers (aged 60) will have a reduced number of teaching hours, without reduction in annual wage.

England:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Starting teachers with a 2.2 class Honours degree or above commence on point 2 of the pay scale.

Management responsibilities in addition to teaching duties: Separate pay scales exist for head teachers and deputy heads.

Holding a higher than minimum level of teacher certification or training obtained during professional life: Teachers can apply for a position as an Advanced Skills Teacher. Teachers are assessed against national standards by an independent assessor and, if successful, are put on a different pay scale. At present, only a few hundred teachers are on the AST scale.

Outstanding performance in teaching: Extra points on the scale are awarded for excellent teaching performance.

Teaching courses in a particular field: Schools have discretion to give extra points on the pay scale for recruitment and retention. This might include payment for teachers in shortage subjects.

Teaching students with special educational needs: Extra points on the scale are awarded to special needs teachers.

Special activities: Schools can make unspecified payments for 'out-of-school' learning activities.

Teaching in a disadvantaged, remote or high cost area: Extra allowances are payable to those who work in London. Schools have discretion to give extra points on the pay scale for recruitment and retention.

France:

Management responsibilities in addition to teaching duties: Every teacher in pre-primary and primary education with extra management responsibilities earns adjustments to their base salary.

Teaching more classes or hours than required by full-time contract (e.g., overtime compensation): Teachers in secondary education who teach more hours than the legal requirement receive money for "supplementary hours".

Special activities : A teacher who leads a club can receive, if the principal decides it, additional bonuses.

Special tasks: Bonuses are awarded to teachers who participate in the training of a trainee-teacher.

Teaching in a disadvantaged, remote or high cost area (location allowance): A teacher who works in a school situated in a "ZEP/REP" (*zone d'éducation prioritaire*) receives special bonuses.

Family status: A teacher who has one or more children receives a special bonus, depending on the number of children.

Germany:

Management responsibilities in addition to teaching duties: Teachers with management responsibilities can enter a higher salary group.

Family status: Family allowance is included in the salary. The family allowance varies according to the salary group and the family circumstances of the civil servant (e.g., married and widowed civil servants without children fall under level 1, while married and widowed teachers with one child fall under level 2).

Age: The basic salary depends on the salary group and the seniority grade. The seniority grade is based on the age of the teacher at the time that he/she became a civil servant, with the teacher's training period also being taken into account.

Note: Teachers are entitled to have a reduction in the number of periods for performing certain duties, such as administrative work in the case of head teachers or their deputies. The number of periods is also reduced for members of staff carrying out special tasks, such as teacher training, preparation of timetables and running of libraries.

Greece:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: All teachers must have acquired a university degree, with the exception of some categories of teachers in Technological and Vocational Schools (ISCED 3) in which they may have degrees from Technological Education Establishments (ISCED 5B). There is a salary adjustment for teachers with a master's degree or Ph.D. If a teacher has a master's degree s/he takes an additional benefit of 120.000 drs/year and if s/he has a Ph.D degree s/he takes 216.000 drs/year.

Special tasks: Teachers receive additional bonuses for teaching seminars or training programmes, depending on the time and the subject.

Teaching in a disadvantaged, remote or high cost area (location allowance): There are three categories of location allowances for teachers in Greece. (a) Disadvantaged regions of category B : 108.000 drs/year (b) Disadvantaged regions of category A : 144.000 drs/year and (c) Disadvantaged and borderland regions : 240.000 drs/year.

Family status: Teachers receive additional bonuses, depending on marital status and the number of children: marriage 144.000 drs/year, first child 72.000 drs/year, second child 72.000 drs/year, third child 144.000 drs/year, forth child 192.000 drs/year and above the fifth child 300.000 drs/year.

Hungary:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: As a general rule, school principals decide about additional bonuses. However, the local authorities ensure the sum of money for the adjustments within the framework defined by the central budget.

Successful completion of professional development activities: Participation in in-service training is compulsory for teachers once every seven years. Teachers who have met this requirement can increase by one category in the salary scale a year earlier.

Outstanding performance in teaching: This additional bonus is awarded monthly (and infrequently annually).

Teaching courses in a particular field: This additional bonus is awarded monthly.

Special activities: This additional bonus is awarded monthly.

Special tasks: This additional bonus is awarded monthly.

Iceland:

Teaching students with special educational needs: Teachers receive additional bonuses for each special needs student taught.

Ireland:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: An allowance is paid automatically on certification of qualification.

Management responsibilities in addition to teaching duties: The appointment of the teacher carrying the additional responsibility is made by the school, but the award of an allowance is made by the national authority following notification by the school authorities.

Teaching in a disadvantaged, remote or high cost area (location allowance): An allowance is paid for teaching in an Irish-speaking area or on an island.

Other: Long-service increments are paid to teachers who have served a number of years at the top of the salary scale and who have not received a post of responsibility or other promotional post.

Japan:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: An allowance of 200 yen per day is allocated to chief teachers, who are in charge of management.

Teaching students with special educational needs: This allowance is allocated to teachers who are in charge of special classes or who work in Special Education Schools (about 6 per cent of salary).

Teaching more classes or hours than required by full-time contract: A special allowance is paid to all teachers (about 4 per cent of total salary) for overtime work.

Special activities: This allowance is allocated to teachers who take emergency work in case of disaster (3,200 yen/time).

Teaching in a disadvantaged, remote or high cost area (location allowance): Allowances are paid to teachers living in areas with a high cost of living; to teachers who commute from a distance of over 2 km; and to teachers who work in schools in remote areas (the amount of the allowance depends on school grade).

Family status: This allowance is allocated to teachers with dependants.

Other: An additional salary is paid to all teachers, which is equivalent to 4.95 months' salary. An allowance is available for teachers who take posts in a city that is more than 60 km from home; a housing allowance is provided to teachers if their rent is more than 12,000 yen; an allowance is allocated to the teachers of multi-grade classes (2 grades: 290 yen per day, 3 grades: 350 yen per day); four per cent of a teachers' salary is awarded to teachers in compulsory education; and an allowance is provided to teachers on day and night duty.

Mexico:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Teachers receive additional bonuses for academic level, or the maximum level of studies attained by the teacher, and seniority, or the years of performance in the Basic Education teaching service.

Reaching high scores in the qualification examination: This corresponds to the knowledge required by the teacher to perform his/her duties. It is evaluated by means of an instrument designed and applied by educational authorities.

Successful completion of professional development activities: Teachers are awarded additional bonuses for professional performance, which refers to the set of daily actions and functions performed by the teacher.

Holding a higher than minimum level of teacher certification or training obtained during professional life: Additional bonuses are provided for completing modernisation courses and professional development, which are run at state and national levels.

Outstanding performance in teaching: Bonuses to teachers are based on evaluations of learning achievement of students in the class or subject.

Teaching in a disadvantaged, remote or high cost area (location allowance): Teachers working in areas of low development are awarded additional bonuses.

Other: Remuneration are provided for teachers involved in educational support, which refers to the research, updating and material preparation activities that contribute to improving the teaching-learning process and procedures.

Netherlands:

Teaching students with special educational needs: These teachers are placed on a higher salary scale.

New Zealand:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Higher starting salaries are available to teachers with higher than the minimum required level of teacher training qualification.

Holding an educational qualification in multiple subjects: Teachers holding multiple qualifications (under-graduate degrees) enter the teaching service on a higher starting salary.

Management responsibilities in addition to teaching duties: Teachers with management responsibilities typically receive one or more Units (valued at an average of $2,625 p.a. in 1999/2000) on a permanent or fixed-term basis, dependent upon the nature of the responsibility. Higher Duties Allowances are payable when management duties are undertaken in a reliving/temporary capacity.

Holding a higher than minimum level of teacher certification or training obtained during professional life: Teachers who improve their qualifications may be entitled to progress to a higher qualifications maximum salary. Teachers in upper secondary education can receive the Service Increment Allowance ($1578 p.a.) under some circumstances if they have improved their qualifications since entering the service.

Teaching courses in a particular field: Teachers of an approved Maori language immersion programme are entitled to the Maori Immersion Teacher Allowance ($1,500 p.a.). Teachers of specific subjects may also receive Units on the basis of recruitment and/or retention as determined by the individual school.

Teaching students with special educational needs: Designated teachers of students with special educational needs may receive the Special Duties Increment Allowance at the value of one salary step (variable) or $995 p.a. when the teacher is at their qualifications maximum.

Special activities: Teachers may be awarded one or more Units (valued at an average of $2,625 p.a. in 1999/2000), typically on a fixed-term basis for the duration of the additional responsibility/special activity

Special tasks: The Associate Teacher Allowance is payable to teachers who assist student teachers during their practicum: $3.19 per hour in upper secondary education or $51.60 per week (pre-primary education). Secondary teachers employed as careers advisers may receive the Careers Adviser Allowance ($1,054 p.a.) unless they hold a Unit. A Bus Controller's Allowance ($3.72 per day +$1.30 per additional route controlled in Primary, $3.61 and $$1.26 in Secondary) is available to teachers who are responsible for controlling school transport.

Teaching in a disadvantaged, remote or high cost area (location allowance): Primary teachers can receive an Isolation Allowance (up to $3,032 p.a.), depending on the distance of the school from a population centre. Primary teachers may also receive the Staffing Incentive Allowance ($995 p.a.) on the basis of location.

Other: Teachers in approved schools that demonstrate difficulties in filling teaching positions may receive the Staffing Incentive Allowance ($995 p.a. in primary education and $966 p.a. in secondary education). Teachers in Normal or Model Schools (i.e., primary schools that have a relationship to a specific teacher--training provider) are eligible for the Normal School Allowance $1,636 p.a.

Norway:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Teachers can gain one or more increments.

Management responsibilities in addition to teaching duties: Teachers may gain one or more increments and obtain a reduction in working hours.

Holding a higher than minimum level of teacher certification or training obtained during professional life: Teachers may gain one or more increments.

Teaching more classes or hours than required by full-time contract: Teachers are paid at an hourly rate.

Special tasks: Teachers who are training student teachers are given a reduction in teaching hours.

Teaching in a disadvantaged, remote or high cost area (location allowance): Teachers in certain areas, particularly in northern Norway, receive a fixed amount in addition to their salary.

Other: Teachers may gain one or more increments and have reduced working hours.

Portugal:

Successful completion of professional development activities: Teachers must complete a certain amount of professional development credits in order to progress in their careers.

Management responsibilities in addition to teaching duties: Principals receive an increase in salary for the duration of the period, while heads of curriculum departments, class co-ordinators and tutors receive a reduction of their teaching time. The school makes the decision regarding the reduction of teaching time for middle managers.

Holding a higher than minimum level of teacher certification or training obtained during professional life: In addition to the requirement of a university degree (4 to 5 years of study), a master's degree (2 to 3 years of study) adds a bonus corresponding to four years of career progression; a doctorate adds a bonus corresponding to 6 years of career progression.

Outstanding performance in teaching: After 15 years of teaching and after receiving an appraisal of "good" by the school, teachers may apply for a special appraisal of their *curriculum vitae* and receive an increase of two years in their career progression, although this rarely occurs.

Teaching students with special educational needs: Teachers holding a certified qualification in special needs teaching receive an increase in salary when teaching. Beyond that, teachers holding a special certificate in areas such as school management or special needs teaching receive a one-year bonus in career progression for every four years of professional activity that is directly related to the area of specialisation, up to a maximum of three years.

Teaching more classes or hours than required by full-time contract: Teachers are paid extra for the classes/hours taught beyond teachers' statutory working time. In general, this situation occurs due to the difference between individual teaching load and the curriculum hours to teach.

Special tasks: Teachers teaching trainee teachers receive a salary increase and a reduction in teaching time.

Family status: Family status is not specific to teachers, but corresponds to a social allowance to every family with children.

Scotland:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Only graduates are eligible to enter the teaching profession. Local education authorities, as employers, are responsible for carrying out a salary review prior to placement on the common scale. This review takes into account age, qualifications and relevant experience, and determines which point on the scale a teacher should be placed. Any teacher who possesses a qualification above the minimum entry requirements, such as an Honours degree, is automatically placed on the entry point for Honours graduates within the common scale. This would, however, be the only occasion that a teacher's salary would be increased beyond the base salary level to reflect additional qualifications.

Management responsibilities in addition to teaching duties: Teaching staff who assume management responsibilities would normally do so through promotion. This would then place the individual on a different salary scale within the promoted structure.

Teaching in a disadvantaged, remote or high cost area (location allowance): Within the Scheme of Salaries and Conditions of Service document for teachers employed in education authority schools, there is provision for such allowances to be made in respect of remote schools (£774 per annum or £1,449 per annum) and distant islands (i.e., any of the Orkney Islands, of the Shetland Islands, or of the Outer Hebrides and the islands of Colonsay, Tiree, Coll, Muck, Eigg, Rhum, Canna and Soay - £1,263 per annum). These allowances will be updated on 1 April in any year on the basis of the Average Earnings Index. The determination and exact circumstances in which such allowances would be deemed appropriate is the responsibility of the local authority concerned.

Sweden:

In Sweden, teachers are awarded individual salaries and there is no fixed salary scale. Additional bonuses in the true sense of the concept are difficult to isolate because of the individual setting of salaries. Thus, most of the criteria could be used in the individual setting of salaries.

Turkey:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: A teacher who holds a Maters' or PhD qualification from any department of the faculty of education is placed on the upper degree of the first-year salary scale. In addition, teachers with a master's degree are awarded an additional 25 per cent per teaching hour if they teach additional hours, and an extra 40 per cent per teaching hour for teachers with a PhD.

Management responsibilities in addition to teaching duties: Teachers in vocational programmes in upper secondary education acting as heads of department receive additional bonuses.

Outstanding performance in teaching: Teachers who achieve high levels of success in their profession are evaluated by the Provincial Directorate of National Education and are awarded an additional bonus.

Teaching more classes or hours than required by full-time contract: Teachers must teach more hours than that which is stated in the full-time contract if it is required by the school administration. Any additional teaching hours are paid to the teachers per teaching hour/lesson hour.

Special activities: In grades six to eight in primary and secondary education, teachers are paid for three additional teaching hours if involved in special activities.

Special tasks: Teacher trainers are paid per teaching hour if appointed as a lecturer in courses or seminars, although these take place outside of education and training time.

Teaching in a disadvantaged, remote or high cost area (location allowance): Additional bonuses are paid to teachers working in areas that have been given priority with regard to development.

Family status: An additional bonus is paid to a teacher if the teachers' wife or husband is unemployed or has children (maximum of two children who are less than 18-years-old).

United States:

Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession: Teachers with a master's degree or Ph.D would have higher base salary schedules than teachers with a bachelor's degree.

Successful completion of professional development activities: Teachers may take professional development courses that count as credits towards an advanced degree. Some school districts provide bonuses if teachers complete a certain number of additional credits (e.g., 15 or 30), even if they do not obtain an advanced degree (e.g., a master's degree or Ph.D).

Outstanding performance in teaching: This is not a common practice in most school districts, but there may be some cases where school districts do award a bonus for outstanding performance.

Teaching courses in a particular field: This is not a common practice, but it could occur in isolated cases.

Teaching students with special educational needs: This is not a common practice, but it could occur in isolated cases.

Teaching more classes or hours than required by full-time contract: This is not a common practice, but it could occur in isolated cases.

Special tasks: Some personnel, e.g., guidance counsellors, may have a separate salary schedule than teachers, who could have higher base pay. However, other functions such as training student teachers would probably not receive additional compensation.

INDICATOR D7: Teachers' working time in public primary and secondary schools

■ Notes on specific countries

Interpretation

Australia: It should be noted that many teachers have to spend a certain number of hours at school which includes teaching and non-teaching activities, however there are other (additional) non-teaching duties undertaken outside these specified hours, and the hours to be spent on these (additional) duties are not defined. Therefore most Australian teachers work longer hours than those reported.

Austria: The Education Act governing teachers only stipulates teaching hours (20 to 24 periods of 50 minutes per week). Provisions concerning teaching time are based on the assumption that the duties which a teacher performs (including preparing lessons and tests, marking and correcting papers, examinations, and administrative tasks) amount to a total working time of 40 hours per week.

Belgium (Flemish Community): Only hours of teachers are formally set. The additional non-teaching hours within the school are set at the school level. There are no regulations regarding lesson preparation, correction of tests and marking students' papers, etc. The government defines the minimum and maximum number of teaching periods (of 50 minutes each) per week at each level of education. Teaching time consists of a minimum of 24 and a maximum of 28 lessons per week in pre-primary and primary education, 22 to 24 lessons per week in lower secondary education, 21 to 23 lessons in the first two years of upper secondary education, and 20 to 22 lessons in the last two years of upper secondary education. For practical subjects in vocational education the teaching time is minimum 30 and maximum 33 lessons per week. The additional non-teaching hours within the school are set at the local or school level. The balance between the minimum and maximum number of teaching hours is called *plage-uren*.

Belgium (French Community): The data on teaching time refer to the maximum numbers of lessons of 50 minutes each: 28 lessons in pre-primary education and in primary education, 24 lessons in lower secondary education, 22 lessons in upper secondary education (general subjects) and 33 lessons (vocational/practical training).

Czech Republic: Teachers are public employees and their working time is set accordingly. Teachers are supposed to work 42 hours a week (excluding lunch breaks) over 40.2 weeks, of which only teaching time is further specified. Teachers in pre-primary education teach 31 hours a week. In primary education, teachers teach 22 lessons, and in secondary education 21 lessons per week (lesson duration is 45 minutes). The teaching duties of school principals and deputies are reduced according to school size and vary between 13 and 24 hours in pre-primary education, 5 to 16 lessons in primary and lower secondary education and 2 to 6 lessons in upper secondary education.

Denmark: Within the formal demands of 37 working hours per week in primary and lower secondary education, for every hour of teaching there is one hour of preparation time and an average of 30 minutes of non-teaching time was calculated in the reference year. In upper secondary education (general programmes), a collective agreement between the county authorities and the teachers' union defines lesson preparation time as 75 per cent of the number of lessons * 1.33 hours, and the hours to be used for examinations as an average of 110 hours per annum. Remaining duties are defined at the

local level. In upper secondary education (vocational programmes), agreement has to be reached between the management of the school and the teachers' representative on the principles for allocation of working hours for preparation, etc. in accordance with the collective agreement between the teachers' union and the Ministry of Finance. The limits for preparation time are between 13 and 126 minutes per 60 minutes of teaching. Norms for correction of written work, examination work, etc., are regulated by the collective agreement or by local agreement within the school. As a minimum, each teacher is allowed 50 hours per year for pedagogical, theoretical and skills development.

England: Statutory working hours comprise 1265 hours a year. Teachers are required to work 195 days a year, of which 190 must be spent in school and available to teach; the other 5 are training days and can be worked in school or elsewhere. No statutory teaching hours or contact time is established on the national level.

France: Of the 27 working hours for teachers in primary and lower secondary education, one hour per week is spent liaising with other teachers and co-ordinating teaching. In secondary education, the amount of working time varies according to the subject taught. Non-teaching time in secondary education is calculated as 60 minutes for every net hour of teaching.

Germany: The number of periods that teachers are required to teach varies from school to school and *Land* to *Land*. Teaching time also differs according to teaching qualifications and subjects. The weighted average number of lessons per week (of 45 minutes each) is 27.76 in primary education, 26 in lower secondary education, 24.8 in lower secondary education (general programmes), and 24.65 in lower secondary education (vocational and pre-vocational programmes).

Greece: The maximum mandatory number of lessons taught per week is 25 (of 48 minutes each) in pre-primary and primary education, and 21 lessons in secondary education.

Hungary: The mandatory number of working hours (40 hours) conforms to that of public employees and is a formal requirement for teachers. Most preparation takes place outside school. School-related activities (e.g., staff meetings, meetings with parents, preparation for school festivities, etc.) are specified at the school level. Teachers are required to teach 32 lessons per week (of 60 minutes each) in preprimary education, 21 lessons (of 45 minutes each) in primary education, and 20 lessons (also 45 minutes each) in secondary education in order to earn a full-time salary. Teachers in primary education are required to stay with their class during breaks. Overtime teaching is paid and is often required as part of the job.

Iceland: Teachers in primary education work 40 hours per week, four hours of which are allocated for preparation, planning, meeting parents, preparing field trips, staff meetings, etc. In primary and secondary education, the total annual workload is 1 800 hours over 181 days, of which 170 days are teaching days. A full-time teacher under age 55 is required to teach 28 lessons per week in primary and lower secondary education and up to 24 lessons per week in upper secondary education. This teaching load is reduced with age and experience and can be as low as 19 lessons per week in primary and lower secondary education, and 17 lessons per week in upper secondary education for a 60-year-old teacher with at least 10 years' service. A teacher's workload in primary and lower secondary education is divided into three categories: teaching (K), preparing lessons (U), and other work (Ö). If other work is increased for a particular teacher, the teacher can either choose to do less teaching or to receive overtime pay, and in the case of a part-time teacher, is entitled to a higher percentage of a full-time job. In upper secondary education, the teacher's workload is divided into five categories: work at school under the supervision of the head-teacher (130 hours), teaching and teaching-related work (1

177 hours), work during the six examination weeks (258 hours), preparation and follow-up at the beginning and end of the school year (32 hours), and professional development.

Ireland: Teachers pre-primary and primary education are required to be in attendance at school for five hours 40 minutes each day. In addition, to their teaching duties they are required to supervise pupils during recreation periods. Teachers in secondary education are required to be at school for 22 teaching hours per week. There is no requirement for the amount of time that is to be spent on non-teaching activities.

Italy: Only teaching time is regulated on national level. Above that legislation only mentions a minimum number of 80 hours for meetings. In Italy, the number of teaching days differs from one region to another.

Korea: There is no policy on how many hours teachers should teach in a week or a month or a year. The data on teaching time is based on the annual administrative data collection and refer to the time teachers usually teach per week during the school year. Teachers are civil servants and their working time is regulated within that framework. Whereas there are national regulations on the length of the school year and on the working hours of civil servants, which apply to teachers during the school year period, during the summer and winter vacations teachers work on self-regulated schedules of professional developmental training, was excluded.

Mexico: In pre-primary, primary and lower secondary education, teaching time comprises 12.5 hours, 20 hours and 20.8 hours, respectively, per week. The remaining working hours must be devoted to non-teaching activities, such as meetings, general school tasks, examination marking and lesson preparation, whether inside or outside school.

Netherlands: Ten per cent of the total annual required working hours are available for professional development. In pre-primary and primary education, the total number of annual working hours is 1 659, of which 930 are teaching hours. In lower secondary and upper secondary (general programmes) education, in addition to 868 teaching hours per year (26 lessons of 50 minutes per week), 173 hours per year are allowed for preparation, 166 hours for professional development, and 452 hours for other tasks. In upper secondary education (vocational programmes), teachers' annual working hours are 1 710, 843 hours being allocated for teaching and student guidance and 171 hours for professional development.

Norway: Teachers are required to work 1 717.5 hours per annum over 39 weeks, of which 38 are teaching weeks. In primary, lower secondary and upper secondary (general programmes) education and three (vocational programmes), out of the 44 hours of working time per week, 18.8 hours, 16.7 hours, 13.3 hours and 15.5 hours per week, respectively, are devoted to teaching. The remaining working time and the 39th week are devoted to non-teaching activities.

As all other civil servants work approximately 46 weeks per year and 37.5 hours per week while teachers work 39 weeks per year, the high number of working hours per week for teachers can be accounted for by a compressed working year.

Portugal: Teachers at all educational levels are required to work seven hours a day over 228 days a year *i.e.*, 46 weeks, of which 34 weeks are teaching weeks. Maximum teaching time amounts to 25 hours in pre-primary and primary education, and to 22 lessons and 20 lessons (of 50 minutes each) per week in lower secondary and upper secondary education, respectively. Schools were closed for seven

days for festivities in pre-primary, primary and lower secondary schools, and for five days in upper secondary schools.

Scotland: The working hours of teachers, under the overall direction of the Headteacher, include 27.5 hours per week in school, of which the maximum class contact time is 25 hours in primary education, 23.5 hours in secondary education and 22.5 hours in special schools. The balance of time for teachers, except for those in special schools and units, between the specified class contact time and the 27.5 hours are available to the teachers for work relevant to individual teaching duties. Only in exceptional circumstances can any of this time be utilised by the Headteacher for any other purpose. The hours of part-time teachers include not only class contact time, but also a pro-rata element for non-class contact time. The working hours of teachers also include an additional maximum of up to 30 hours in the school year for the purpose of parent meetings, stipulated as the total including preparatory work and provision of travelling time up to a maximum of 6 meetings within the pupil year.

Spain: In pre-primary and primary education, teachers are required to work for 37.5 hours per week, of which 22.5 hours comprise net contact time, and 7.5 additional hours are to be devoted to activities at school (breaks, meetings and pedagogical activities). The remaining 7.5 hours may be spent out of school in preparation for classes, professional development, etc. In secondary education, teachers are required to teach 18 lessons (of 55 minutes each) per week (up to 21 lessons in exceptional cases). Teachers must teach a minimum of two and a maximum of five lessons per day, and are expected to be available at school for 30 hours (25 hours teaching classes plus other pedagogical activities). All teachers are required to spend at least four hours per day in school.

Sweden: Working time is regulated in formal agreements between the Swedish Association of Local Authorities and teachers' unions. According to the Teacher Agreement 2000 working time is regulated for 1360 hours per school year. Teachers themselves are responsible for when they spend the remaining working time. Teaching time in hours is not regulated in order to allow for the teaching of non-compulsory subjects.

Turkey: Teaching time is laid down at the national level, while non-teaching time is specified at the school level. The only formal requirement states that teachers shall attend workshops and prepare for the school year for 40 hours preceding and 40 hours following each school year. Teaching time per week is 18 lessons (of 50 minutes each) in pre-primary education, 18 lessons (of 40 minutes) in primary and lower secondary education, 15 lessons in upper secondary education (general programmes) and 20 lessons per week in upper secondary education (vocational/pre-vocational programmes) (also 40 minutes each). Twelve compulsory but additionally paid classes are required in pre-primary and primary education, six classes in lower secondary education, and 20 classes in upper secondary education.

United States: Teaching time and working time include the amount of time for which teachers are required to be at school but do not include the work completed outside the school setting. For children in full-day kindergarten, the hours of teaching would be similar to the teaching time in primary education. However, while some schools offer full-time kindergarten, others only offer part-time kindergarten. Teachers' working time is not collected through administrative records but from individual teachers' reports of the number of hours they are required to be at school. The 1999-2000 data are considerably higher than data collected previously and may reflect actual hours spent at school rather than the contracted number of hours of work.

Notes on specific countries

Sources

Australia

Sources: New South Wales policy; Victoria Teaching Service Orders; Queensland and South Australia's education departments; Western Australia's Government School Teachers' and School Administrators' Certified Agreement 1998; Tasmania's 2000 award; 1998 Schools Policy Handbook, NTDE; Australian Capital Territory Certified Agreements and Dept Policy.

Methodology: The method used involved eliminating the specifications used by less than 50 per cent of the teachers in Australia, merging the weighted hours done by those teachers into the final row, and adjusting the weighted "other" responses slightly to fit the given alternatives (the given specifications). Weightings were based on numbers of secondary teachers across the States/Territories. The distribution of secondary school teachers between the States/Territories differs only slightly from the primary school teacher distribution. Where missing for States/Territories, teachers' hours in pre-primary education were considered to be the same as teachers' hours in primary education. Where data were missing for public employees' hours, they were assumed to be the same as those for teachers. After eliminating SA (as above), its hours were assumed to be the same as New South Wales, except in the case of pre-primary education and public employees. The States'/Territories' methodologies included reference to actual data and data as printed; certified agreements; Education Acts and Regulations; and document searches and information provided by Employee Relations Consultants (Human Resource Services).

Reference year: School year 2000 (excepting Northern Territory and Australian Capital Territory, which a 2001).

Austria

Sources: Staff legislation on teachers (Beamten-Dienstrechtsgesetz; Landeslehrer-Dienstrechtsgesetz).

Methodology: All teachers employed by the Federation *(Bund)* or the *Länder*. Teachers employed by the *Länder* are compulsory school teachers.

Reference year: School year 1998-1999.

Belgium

Sources: Decrees and resolutions of the education governement of the Flemish Community, Décret du gouvernement de la Communaté française du13/08/98-Memento de l'Enseignement 1999-2000..

Nature of sources: Policy documents based on law.

Methodology: ***Pre-primary and primary education:*** Teaching time consists of minimum 24 and maximum 28 lessons of 50 minutes per week. The school assignment consists of maximum 26 hours

(60 minutes) per week. Teaching time = (maximum lesson hours (23.33 * 60 minutes) * (37.2 teaching weeks – 1.6 weeks of festivities). ***Lower secondary education:*** Teaching time consists of minimum 22 and maximum 24 lessons of 50 minutes per week. Teaching time is calculated as the (maximum lesson hours (20* 60 minutes) * (37.2 teaching weeks – 1.4 weeks of festivities). ***Upper secondary programmes (general programmes):*** Teaching time consists of minimum 21 and maximum 23 lesson hours (50 minutes) per week in the first two years of general upper secondary education (the so called "second stage"). In the last two years ("third stage") teaching time consists of minimum 20 and maximum 22 lesson hours (50 minutes) per week.

Reference year: 1999-2000.

Czech Republic

Nature of source: Government decree.

Reference year: 1999-2000.

Denmark

Sources: Kvalitet i uddannelsessystemet, Finansministeriet 1998.

Methodology: The data were calculated by the Ministry of Finance in cooperation with the Ministry of Education based on collective agreements for teachers and on national statistics. New collective agreements concerning the working conditions for teachers are were put in force from August 2000. No major changes took place in the period of 1997 to 1999.

Reference year: 1997.

Finland

Sources: Statistics Finland.

Reference year: 2000.

France

Nature of the sources: Law and policy document based on law; national statistics.

Methodology: National statistics.

Reference year: 1999-2000.

Germany

Sources: Law and policy document based on law; data on formal arrangements 1999; national statistics school year 1999/2000.

Reference year: School year 1999-2000.

Greece

Nature of sources: Law and policy documents based on law, data on formal arrangements.

Reference year: School year 1999-2000.

Hungary

Sources: Public Education Act 1993; The Amendment of the Public Education Act 1996., Act XXXIII of 1992 on Public Employees; The order of the school year 1999-2000.

Reference year: School year 1999-2000.

Iceland

Source: Wage contract between the Teachers' trade Union of Iceland and municipalities and the state, 1998-2000.

Reference year: 1999

Ireland

Sources: Official Circulars.

Reference year: School year 1999-2000.

Italy

Sources: D.P.R. 14/74 - L. 476/86 - D.P.R. 399/88 - C.C.N.L. 21/07/95-12/07/96.

Nature of the sources: Law and policy document based on law.

Reference year: School year 1999-2000.

Japan

Sources: Number of weeks a teachers teaches per annum: Shogakko-Gakushu-Shido-Yoryo(The Course of Study in Elementary Schools 1989), and Chugakko-Gakushu-Shido-Yoryo (The Course of Study in Lower Secondary Schools 1989), and Kotogakko-Gakushu-Shido-Yoryo (The Course of Study in Upper Secondary Schools 1989), Ministry of Education, Science, Sports and Culture. Teachers' working time: the National Public Service Law.

Methodology: Number of hours a teacher teaches per annum is the number based on the number of hours a teacher teaches per week by "Survey Report on School Teachers" and the additional numbers of hours of Moral Education and Special Activities. Short breaks are not included in teaching time.

Reference year: 1999.

Korea

Sources: The School Curriculum of the Republic of Korea, 1992 by the Ministry of Education, 2) Statistical Yearbook of Education, 2000, by the Ministry of Education & Korean Educational Development Institute.

Methodology: Data on net teaching hours were calculated from annual school survey (census) data on the number of classes per week teachers teach and this was transformed to clock hours for the whole school year. Teachers with additional administrative duties were excluded from the calculations. Working time refers only to the school-year period. The summer and winter when teachers work on self-regulated schedules of professional development was excluded.

Reference year: 1999-2000.

Mexico

Sources: Teaching time: Secretaría de Educación Pública, Calendario escolar 1999-2000, Agosto 1999, México. Teachers' working time: Sources: It was calculated on information of the Ministry of Public Education (Secretaría de Educación Pública).

Reference year: School year 1999-2000.

Netherlands

Source: CAO 1998.

Nature of source: Formal agreement.

Reference year: School year 1999-2000.

Norway

Sources: Agreements between the Ministry of Education and the Teachers' Unions on working hours and teaching conditions.

Reference year: 1999.

New Zealand

Sources: Education Act.

Methodology: Data reported are based on the translation of the number of half-days on which schools are required by law to be open for instruction. One half day represents 2.5 hours.

Reference year: School year 1999-2000.

Portugal

Sources: Law/Policy document: i) Decreto-Lei 139-A/90 - Teachers Career Statute; ii) Decreto-Lei 259/98: Statutory working time for public employees; iii) Decreto-Lei 100/99: Vacations for public employees; iv) Despacho 10320/99 - Organization of the school year.

Methodology: Document analysis.

Reference year: School year 1999-2000.

Scotland

Source: 'Scheme of Salaries and Conditions of Service' document.

Reference year: School year 1999-2000.

Spain

Sources: School calendar published by the education authorities from all Autonomous Communities. For private education, III National Collective Labour Agreement (published in the National Official Bulletin, October 8th, 1997). Teachers' working time: RESOLUTION of April 27, 1995 of the Secretary of State for the Public Administration, giving instructions about the working time and time schedules of the civil servants of the National General Administration (National Official Bulletin, May 10, 1995). // ORDERS of June 29, 1994, giving instructions which regulate the organization and functioning of pre-primary, primary and secondary education schools (National Official Bulletin, July 5, 1994). // ORDER of February 29, 1996, which modifies the Orders of June 29, 1994. (National Official Bulletin, March 9, 1996).

Methodology: There are differences among the Autonomous Communities in the exact dates of starting and ending the school-year. The data provided on the number of teaching weeks correspond to the most typical situation. Teachers' working hours: An estimation of the typical number of working days of teachers and other civil servants was made and they were multiplied by the number of official working hours per day (7,5), excluding the month of July for teachers and taken into consideration the summer time schedule (7 hours a day) for the general civil servants.

Reference year: School year 1999-2000.

Sweden

Sources: National Law on Working Time, Swedish Teacher Agreement.

Reference year: 2001.

Turkey

Sources: Working Calendar for Formal and Non-Formal Educational Institutions, 1999; Regulations Related Secondary Education, 1983; Regulations Related Primary Education Institutions, 1997; Regulations Related Pre-Primary Education Institutions, 1996.

Reference year: School year 1999-2000.

United States

Source: Schools and Staffing Survey 2000.

Comment: Teachers' working time is collected from individual teachers' reports of the number of hours they are required to be at school. The 1999-2000 data are considerably higher than data collected previously and may reflect actual hours spent at school rather than the contracted number of hours of work.

Reference year: 2000.