UIS

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UOE DATA COLLECTION

2002 Data Collection on Education Systems

Definitions, Explanations, and Instructions

Definitions, explanations, and instructions

Instructions relating to the implementation of the revised International Standard Classification of Education

Technical instructions for the completion of the tables

ORGANISATION DE COOPÉRATION ET DE DÉVELOPPEMENT ÉCONOMIQUES
OECD OCDE
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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UIS / OECD / EUROSTAT
2002 Data Collection on Education Statistics

0. INTRODUCTION

0.1 OVERVIEW AND TIMELINE

The objective of the UIS / OECD / EUROSTAT data collection on education statistics is to provide internationally comparable data on key aspects of education systems, specifically on the participation and completion of education programmes, as well as the cost and type of resources dedicated to education.

The Member countries co-operate to gather the information, to develop and apply common definitions and criteria for the quality control of the data, and to verify the data and to provide the information necessary to interpret and report the submitted data.

Member countries are committed to making all reasonable efforts to report according to the definitions, classifications, and coverage specified in the current document. Where deviations from international standards, estimations, or data aggregations are necessary, it is essential that these be documented correspondingly. The ***documentation of data is an integral part of the data collection*** and is of crucial importance for the future credibility of international education statistics.

The data collection is administered jointly by the United Nations Educational, Scientific, and Cultural Organisation Institute for Statistics (UNESCO / UIS), the Organisation for Economic Co-operation and Development (OECD), and the Statistical Office of the European Union (EUROSTAT). These are referred to as the *data requesters*.

The UIS / OECD / EUROSTAT data collection has been extended over the last few years to several countries that are not Member of the OECD. This applies to EU Candidate countries, EEA countries and PHARE countries co-operating with EUROSTAT and to participants of the OECD / UIS World Education Indicators pilot project. For simplicity, we will henceforth refer to the latter as WEI participants.

Altogether, over 60 countries world-wide now complete the UOE electronic questionnaire.

In previous years WEI participants completed instruments very similar, although different, from the UOE instruments. However, since last year instruments on enrolment, graduates, entrants and educational finance converged through the implementation of a common data collection and manual, with WEI deviations from the UOE core data collection process indicated in shadowed boxes (see below), so that WEI data providers can easily track them.

For **WEI participating countries**, a WEI-specific manual on the demographic context, labour market outcomes of education, teachers and the curriculum is attached in the data request material in addition to this binder.

This document describes the UIS / OECD / EUROSTAT (UOE) data collection instruments for the ***school / academic year 2000/2001***[1]

This document contains three chapters:

- Chapter 1 provides ***definitions***, explanations, and instructions relating to the ***coverage*** of the data collection tables, the ***statistical units*** for which data are collected, and the ***classification categories*** that are used as breakdowns in the tables. It further provides guidelines for the implementation of these definitions in the countries. Changes that have been introduced since the 2001 data collections are described in Section 0.3 of this chapter.
- Chapter 2 provides instructions relating to the ***implementation of the revised International Standard Classification of Education*** (ISCED-97) in the UOE Data Collection and current mapping of participating countries. The first part of the chapter describes the structure of ISCED-97, as well as the defining characteristics of the ISCED-97 levels and cross-classification categories, emphasising the criteria that define the boundaries between educational levels. A qualitative description of selected programmes in OECD countries that meet specific classification criteria is also presented as example of how the criteria can be properly applied. Last, a specific country mapping follows.
- Chapter 3 provides important ***technical instructions for the completion of the tables*** which complement the subject matter instructions in Chapter 1.

A second document provides instructions for the use of the UOE ELECTRONIC QUESTIONNAIRE and the data collection tables. It further presents the 2002 UOE and WEI-specific data collection tables on students enrolled, entrants, new entrants, repeaters, graduates, finance and educational personnel. According to the ***timeline*** agreed with the Technical Group and WEI country co-ordinators, countries should return the completed data collection tables in electronic form for the school / academic year 2000 / 2001 by **1 September 2002**. Countries for which data on graduates are not available at this time can submit these data by **31 September 2002**. The finance tables should be returned by the **1 July 2002**. The completed questionnaires will be returned by **e-mail or on diskettes.**

OECD will be responsible for send-out, receipt and 1st verification (cleaning) for OECD countries. Cleaned data will then be transmitted to UIS and Eurostat.

Eurostat will be responsible for send-out, receipt and 1st verification (cleaning) for EU, EEA and candidate countries that are not OECD member countries. Cleaned data will then be transmitted to UIS.

As far as the Eurostat tables are concerned, these are the full responsibility of Eurostat for all EU, EEA and candidate countries.

[1] The reference is calendar year 2001 for graduates and financial year 2000 for data on expenditure.

Table 0.1 List of countries by EU and OECD relevance

OECD relevance	EU relevance	Which countries	Number
OECD Member	-	USA, Canada, Australia, South Korea, Japan, New Zealand, Mexico, Switzerland	8
OECD Member	EU Member	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Netherlands, Italy, Ireland, Luxembourg, Portugal, Spain, Sweden, United Kingdom	15
OECD Member	EEA country	Iceland, Norway	2
OECD Member	Candidate	Poland, Slovakia, Czech Republic, Hungary, Turkey	5
	Candidate	Bulgaria, Estonia, Lithuania, Latvia, Romania, Slovenia, Cyprus, Malta	8
	EEA[3] country	Liechtenstein	1
	PHARE country	Albania, Bosnia-Herzegovina, FYR of Macedonia	3
OECD / UIS WEI participants		Argentina, Brazil, Chile, China, Egypt, India, Indonesia, Jamaica, Jordan, Malaysia, Paraguay, Peru, Philippines, Russian Federation, Thailand, Tunisia, Uruguay, Zimbabwe	18
OECD Observer		Israel	1

The EU specific tables on Foreign Languages and regional enrolment in education will be sent directly and should be returned directly to EUROSTAT. This applies to all EU, EEA and candidate countries.

For **WEI participating countries**, OECD will be responsible for the send-out, receipt and 1st verification (cleaning) of Demography, Curriculum, Personnel and Finance data. Cleaned data will then be transmitted to UIS. UIS will be responsible for receipt and 1st verification (cleaning) of Enrolment, Entrant and Graduate data and ISCMAP questionnaires. Cleaned data will then be transmitted to the OECD for calculation of the indicators.

The international organisations will immediately ***process and verify your data*** once they have been received and inform you about all steps undertaken. The initial verification will be based on common agreed checking rules and will be undertaken by the recipient organisation also on behalf of the other organisations, so as to avoid duplication of requests to countries. This initial verification phase should be completed by January 2003. The subsequent separate processing of

[3] European Economic Area

data for analytical purposes will follow the priorities of each organisation. Also in this period requests to participating countries will be co-ordinated so as to avoid as much as possible duplicate or simultaneous solicitation.

0.2 THE UOE DATA COLLECTION TABLES

The UOE data collection tables are *organised by topic and by the statistical units for which data are collected* (students enrolled, entrants, new entrants, graduates, educational personnel and expenditure).

The preparation of the data collection tables was guided by the search for a common denominator between OECD, EUROSTAT, and UIS. This common denominator is reflected in the UOE tables on students, new entrants, graduates, and educational personnel and finance. In addition there are two sets of EU specific tables introduced by the European Commission (Eurostat) for the collection of *regional data on enrolment* and the collection of data on *foreign languages*. This EU specific part of the UOE data collection is managed by Eurostat.

The tables are colour-coded. The colours indicate cells that have been pre-coded with formulas. Coloured cell only need to be filled out in cases where data provided in corresponding sub-categories do not add up to totals. **Please read the instructions in Chapter 1 of this binder carefully before starting with the completion of the tables.**

Please note that this list of tables refers to the UOE common data collection. Minor WEI-specific adjustments within tables are documented below

- Table ENRL-1: Number of students by level of education, programme orientation, programme destination, intensity of participation, sex and age.
- Table ENRL-1a: Number of students by level of education, programme orientation, programme destination, type of institution, intensity of participation and sex.
- Table ENRL-2: Number of students with coverage adjusted to statistics on educational finance and educational personnel by level of education, programme orientation, programme destination, type of institution and mode.
- Table ENRL-3: Number of students and repeaters (ISC 123) in general programmes by level of education, sex and grade.
- Table ENRL-4: Number of students in Grade 1 by sex and age.
- Table ENRL-5: Number of students (ISC 56) by level of education, programme destination, field of education and sex.
- Table ENRL-6: Number of foreign students (ISC 56) by level of education, programme destination and field of education.
- Table ENRL-7: Number of foreign students by level of education, programme destination, residential status, EU / non EU membership and sex.
- Table ENRL-8: Number of foreign students (ISC 56) by level of education, programme destination and country of citizenship.
- Table ENTR-1: Annual intake by level of education and programme destination.

- Table ENTR-2: Number of new entrants by level of education, programme destination, sex and age.
- Table GRAD-2: Number of graduates (ISC 3/4) by level of education, programme orientation, programme destination, type of institution, sex and age.
- Table GRAD-4: Number of graduates (ISC 5A/5B/6) by level of education, programme destination, type of institution, sex and age.
- Table GRAD-5: Number of graduates by level of education, programme orientation, sex, and field of education.
- Table PERS-1: Educational personnel by level of education, programme orientation, programme destination, type of institution, personnel category and employment status.
- Table PERS-2: Classroom teachers and academic staff (ISCED 5-6) by level of education, programme orientation, programme destination, sex, age and employment status.
- Table PERS-3: School management personnel by level of education, teaching load, sex and age-group.
- Table FINANCE-1: Education expenditures by level of education and source and type of transaction.
- Table FINANCE-2: Education expenditures by level of education, nature and resource category.
- Table FINANCESUP-2: Expenditure for debt service.
- Table FINANCESUP-3: Expenditure for research.
- Table ISCMAP : ISCED mapping update.
- Table CLASS-1 : Average class size by level of education and type of institution.
- Table CLASS-2 : Average class size in general programmes by level of education and grade.
- Table DEM-1 : Total population by sex and age-group.

For ***WEI participants***, UOE tables ENRL-5, ENRL-6, ENRL-7, ENTR-1, GRAD-5 and PERS-3 are not applicable. All references to these tables in the following sections regarding their coverage, statistical units, definitions, instructions… should thus be discarded by WEI data providers.

Besides, ***the following tables deviate – either in content or in coverage - from the UOE standard tables***, despite holding identical names:

- **Table GRAD-4:**

  This table has a content more limited than that of UOE table GRAD-4.

- **Table PERS-1:**

  This table has a content more limited than that of UOE table PERS-1 (it provides disaggregation of data on teaching personnel by sex, but a more limited disaggregation by level of education).

- **Table FINANCE-1:**

  This table is identical in structure to the UOE table, but collects additional WEI-specific information on Total public expenditure due to the unavailability of internationally comparable data.

Last, ***the following tables address WEI-specific concerns*** that go beyond the UOE focus, and should be filled only by WEI data providers:

- **Table ENTR-3:**

  This table is similar in content to UOE table ENTR-2 but its coverage extends ENTR-2 data collection to ISCED level 2, which is of specific interest in WEI countries.

- **Table ENTR-4:**

This questionnaire is not part of the WEI data collection, but is needed by UIS to calculate indicators for the Education For All (EFA) Monitoring Report. It documents new entrants in the first grade of primary education (ISECD 1) to allow the calculation of gross and net intake rates in primary education.

- **Table GRAD-3:**

  This table is similar in content to UOE table GRAD-2 but its coverage extends GRAD-2 data collection to ISCED level 2, which is of specific interest in WEI countries.

0.3 CHANGES FROM THE UOE 2001 TO THE UOE 2002 DATA COLLECTION TABLES

This year, the main changes as compared to last year's data collection are: The instructions concerning educational finance are revised;

- Small changes have been made to the design of the questionnaires in order to allow countries to check the notes they reported. Countries who complete the tables can use the new sheet **NOTES** (included in each questionnaire) and click on a button in order to see all the notes reported. This tool will allow countries to have an overview, in one table, of all the notes reported in the questionnaires' sheets and to check their consistency, as well as help UIS/OECD/EUROSTAT to improve the quality and speed of the cleaning process.
- A new questionnaire on class size has been added to the data collection, following recommendations from the INES Technical Group.

For ***WEI participants***, the class size questionnaire is optional. However, we strongly recommend that you fill it since it will be helpful to the international organisations to check the consistency of the WEI theoretical class size indicator with observed class sizes.

A new questionnaire ENTR4 on the number of new entrants in grade 1 in primary (ISCED 1) has been introduced by UIS to produce additional indicators for the Education For All Monitoring Report (Gross and Net Intake Rates).

0.3.1 NEW TABLES

The UOE data collection now comprises a new questionnaire designed to collect information on class size for primary and lower secondary education (see section 4.6).

For ***WEI participants***, a new questionnaire ENTR4 on the number of new entrants in grade 1 in primary (ISCED 1) has been introduced by UIS to produce additional indicators on gross and net intake rates for the for the Education For All Monitoring Report. Instructions for this new questionnaire are documented in section4.2.

0.3.2 CHANGES IN METHODOLOGY

Since the UOE instructions on educational finance (see section 6) have been slightly revised by the INES Technical Group following the OECD Finance Comparability Study, **data providers should read the new instructions carefully before completing the tables on educational finance.**

0.4 EUROSTAT DATA COLLECTION TABLES

The EU specific tables on foreign languages and regional enrolment in education will be sent directly and should be returned directly to EUROSTAT. This applies to all EU, EEA and candidate countries (see table 0.1).

0.5 THE UOE DATA REQUESTERS

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Chapter 1

Definitions, Explanations, and Instructions for the UOE data collection

1. OVERVIEW

This chapter is addressed to the data providers in participating countries and provides the definitions, explanations and instructions for the completion of the UOE data collection tables.

This chapter is organised as follows:

- Section 1 provides a general overview, a ***table of Contents***, and an ***index of all technical terms***;
- Section 2 provides instructions for the ***documentation*** of the data collection tables;
- Section 3 defines the ***coverage*** of the UOE data collection with particular reference to the coverage of "special education", "adult education" and educational activities in the field of vocational education and training.
- Section 4 defines the ***statistical units*** for which data are collected, such as students enrolled, entrants and new entrants to different levels of education and graduates from different educational programmes, repeaters and different categories of education personnel.
- Section 5 finally defines the ***classification categories*** that are used as breakdowns in the tables.

■ OECD Member countries and WEI participants should make all reasonable efforts to adhere to the specific definitions, classifications, and coverage.

■ Where deviations from international standards, estimations or data aggregations are necessary, it is essential that these be documented correspondingly. The documentation of such cases is of crucial importance for the future credibility of international education statistics.

▲ ***Totals should be unduplicated counts***. In many cases, totals and sub-totals have been pre-coded with formulas that derive these totals from the corresponding sub-categories.

However, if the data values for the totals and subtotals differ from the sum of the sub-categories, then data producers must ensure that these formulas are over-written with the correct values and provide an explanation for this.

2. DATA DOCUMENTATION

■ The ***collection of information on data provided*** (reference periods, data sources, data collection methods, theoretical starting, ending, and graduation ages…) ***is an integral part of the UOE data collection tables***. Data producers are requested to fill in the information described below in the corresponding fields of the data collection tables (note that some of this information has been pre-coded with international default values).

2.1 AGGREGATION OF DATA: WEIGHTED AVERAGES

Data producers may need to aggregate data. For example, if the theoretical ages differ between public and private educational institutions, then data providers should fill in the weighed average. Furthermore, national data sources may provide information on a regional or sub-regional level. In such cases, data providers would need to create corresponding weighed national averages. Similarly, programmes may be of varying duration between different tracks or fields of education within the same type of programme and level of education. Here again, weighed national averages should be created. In all such cases, the ***procedures used should be documented***.

✎ In the Netherlands, for example, there may be ISCED 2 programmes of 3 to 4 years duration followed by ISCED 3 programmes of 2, 3, or 4 years duration. In such cases, data providers should create corresponding weighed averages of theoretical and typical duration over all of these programmes.

2.2 REFERENCE PERIOD

▲ For data on students enrolled, data providers must indicate the start and end of the school year in the header of the table ENRL-1a. For data on graduates, the dates should be entered in the header of the tables GRAD-2 , GRAD-4 and GRAD 5 accordingly.

Note that the term “school year” is synonymous with “academic year” in this document.

▲ If reference periods differ across data collection tables, this should be noted in the header of each table. In Table ENRL-1a, a note should be provided accordingly.

▲ Similarly, differences in the starting and ending dates of the school year across levels of education and/or types of educational programmes should be document in rows S3 and S4 of Table ENRL-1a.✎ For example, the school year might start and end at different times for different levels of education. If such differences occur, then the correct reference periods for each level and type of programme of education should be reported in rows S3 and S4 of table ENRL-1a. Note that the reference period will usually be different for the EU rapid data collection and the standard data collection. If the reference period differs by type of service provider or if there are regional differences, then weighed averages should be reported.

The intended reference periods for the 2002 data collection are:

- for finance tables: financial year 2000

- for graduate tables: calendar year 2001
- for the rest of the tables: ***school / academic year 2000/2001***.

2.3 DATA COLLECTION PERIOD

▲ For each table the date / period in which students and educational personnel were counted must be indicated. If a table contains estimated data, this should be the *target date* to which the estimates refer.

▲ The data collection period may differ across levels of education and / or types of educational programmes. Where such differences occur, corresponding annotations should be made in row S6 of table ENRL1a.

✎ For example, the enrolment data at the secondary and ISCED 5B level of education for Australia are reported on the basis of a census carried out in July whereas enrolments at the ISCED 5A of education are counted on 31 March. These should be the dates to be entered into the "data collection period" of the corresponding levels of education.

2.4 REFERENCE DATE FOR STUDENT AGES

▲ The reference date for student ages should be indicated in the header of the tables ENRL-1a, GRAD-2, GRAD-4and PERS-2. By default, this is the 31st December 2000.

▲ When reference dates for student ages differ across levels of education, corresponding annotations should be made in row S5 of table ENRL1a.

2.5 THEORETICAL STARTING, ENDING, AND GRADUATION AGES

Table ENRL-1a collects information on the theoretical starting and ending ages of the underlying educational programmes (rows S1-S2).

Tables GRAD-2 and GRAD-4 collect information on the theoretical graduation ages for ISCED 3, 4, 5A, 5B and 6 by type of programme and duration of study (row S1).

❍ The ***theoretical ages*** refer to the ages as ***established by law and regulation*** for the entry and ending of a cycle of education. The theoretical ending ages thereby relate to the theoretical duration assuming full-time attendance in the regular education system and assuming that no year is repeated. The assumption is made that, at least for the regular education system, a student can proceed through the educational programme in a standard number of years which is referred to as the theoretical duration of the programme. Note that the *theoretical* ages may differ significantly from the *typical* ages.

❍ The ***theoretical starting age*** should be the age at the *beginning* of the *first* school / academic year of the corresponding level and programme.

❍ The ***theoretical ending age*** should be the age at the *beginning* of the *last* school / academic year of the corresponding level and programme.

❍ The ***theoretical graduation age*** should be the age at the *end* of the *last* school/academic year of the corresponding level and programme when the degree is obtained. (Note that at some levels of education the term "graduation age" may not translate literally and would be equivalent to a "completion age"; it is used here purely as a convention).

■ If data on theoretical ages are different (and available) by type of educational programme within levels of education, then these should be reported at the programme level in rows S1 and S2 of Table ENRL-1a and row S1 of tables GRAD-2 and GRAD-4. If data are not available by programme, but only by level of education, then the theoretical ages should be reported in the fields "Total, all educational programmes" of rows S1 and S2 of the table ENRL-1a and row S1 of tables GRAD-2 and GRAD-4. The remaining fields should be coded to "m".

▲ If there are regional differences in the theoretical ages or if these differ by type of institution or other criteria, then weighed averages should be reported for the theoretical ages.

▲ In some cases, even within a type of educational programme/field of education, graduation can be achieved at different age levels depending on the particular programme and type of diploma. In such cases, weighed averages for all such occurrences should be reported.

2.6 CONVERSION FACTORS FOR CONVERTING PART-TIME DATA INTO FULL-TIME EQUIVALENT DATA

For data on part-time students, countries should provide conversion coefficients for converting these data into full-time equivalents. These coefficients should be provided by level of education and type of educational programme. Where data refer to totals over different educational programmes, countries need to create weighed aggregates for the conversion coefficients.

■ For each level and type of educational programme, the number of part-time students that correspond to one full-time student (with respect to student participation) should be recorded in row S7 of Table ENRL-1a. Use one decimal place.

▲ For the preparation of weighed averages, the same principles apply as for the theoretical ages.

✎ As an example of the creation of an estimate of such conversion factors, enrolment statistics in the United Kingdom are collected on a single day early in the academic year for the upper secondary level. They are classified according to ten categories of attendance (full-time full-year, full-time part-year, full-time short courses, block release, sandwich, day release, other part-day, evening only, open or distance learning, mixed). Each mode of attendance has its own full-time equivalence conversion factor, based on hours of actual attendance over the year. A weighed average of these factors is then created for the reporting in table ENRL-1a.

2.7 SOURCES

■ References to data sources (including information on the type of source, reference to publication, publication date, publisher) should be provided in the corresponding green fields at the right hand side of each data collection table.

2.8 REPORTING METHODS

■ References to data collection methods should be provided in the corresponding green field at the right hand side of each data collection table (e.g. estimation/imputation methods, treatment of missing data). For data on the number of students, data providers should indicate whether the data refers to the count of individuals at a particular date, or to the average count during the year.

2.9 USE OF AGGREGATE CATEGORIES IN THE DATA COLLECTION TABLES

To accommodate jurisdictions that cannot provide data for certain sub-classifications and which are not yet able to provide estimates for these, the data collection instruments make certain provisions for the reporting of aggregates in certain classification categories.

ISCED level categories are an important example of this. The structure of the education systems and the design of the national data collection systems sometimes do not enable countries to provide data separately for each ISCED level. For student and education personnel data, the tables therefore provide sub-totals for ISCED levels 1-3, 5-6, and 0-6.

▲ In all other instances, the missing data codes will allow data providers to specify aggregate data values with references to the source and target categories (See the ELECTRONIC QUESTIONNAIRE MANUAL for a description of the specific codes to use). Data providers are *strongly discouraged* however, from specifying further aggregate categories using the missing codes, as this will inevitably lead to the loss of information in the data analyses. Of particular importance is the fact that it may lead to the exclusion of the country from certain indicators. Countries should thus rather attempt to estimate the data for the sub-categories.

2.10 DOCUMENTATION OF BREAKS IN TIME SERIES

For each workbook, ENRL.XLS, ENTR.XLS, GRAD.XLS and PERS.XLS, specific worksheets provide room for the documentation of changes in coverage or methodology compared to the previous year. This collection of meta-data will help to establish reliable and well documented time series.

The questionnaire distinguishes between three possible reasons for significant changes in the data compared to the previous year.

1) Changes in the *educational system*. This refers to "real" changes in the data due to changing conditions of the educational system, such as the implementation of reforms that lead to an increase in the stock of students...
2) Changes in the *coverage* of the data collection. This refers to changes introduced due to ex/inclusion of programmes compared to last year's edition. Inclusion of adult literacy programmes, or private schools could be examples.
3) Changes in the *methodology* used. This refers to significant changes in the data due to new/modified methodologies in data collection or estimation.

Almost all countries already provided the relevant information in previous data collections, but in different formats. Therefore this additional questionnaire does not lead to increased data collection effort, but standardises existing documentation and helps the international organisations to process the data.

For ***WEI participants***, ***changes in compulsory schooling ages*** should for instance be documented in these worksheets, as such occurrences are likely to bring about changes in enrolments, educational finance…

In that respect, please note that the definition of the ending age of compulsory schooling refers to the legal age from which children are not compelled to go to school anymore (for instance 15th birthday). The ending age of compulsory schooling is thus different from the ending age of an educational programme.

3. COVERAGE OF THE DATA COLLECTION

3.1 SCOPE OF "EDUCATION"

In defining the scope of education for this data collection, reference is made to the International Standard Classification of Education (ISCED) where education is defined as "***organised and sustained communication designed to bring about learning***" (➘ see Chapter 2). The key words in this formulation are to be understood as follows:

- "***Communication***" in this context requires a relation between two or more persons involving the transfer of information (messages, ideas, knowledge, strategies, etc.).
- "***Organised***" means planned in a pattern or sequence with established aims or curricula and which involves an educational agency that organises the learning situation and/or teachers who are employed (including unpaid volunteers) to consciously organise the communication.
- "***Sustained***" means that the learning experience has the elements of duration and continuity.
- "***Learning***" is taken as any change in behaviour, information, knowledge, understanding, attitudes, skills, or capabilities which can be retained and cannot be ascribed to physical growth or to the development of inherited behaviour patterns.

The data collection should cover national education systems regardless of ownership or sponsorship of the institutions concerned and regardless of the education delivery mechanism. Correspondingly, the coverage of the data collections should, -- with the exceptions listed below -- extend to all types of students and to all age groups, to children (including children classified as exceptional), young people, and adults who attend programmes or undertake studies which fall into the categories described in this document.

However, the following types of education and training should be excluded:

- Vocational and technical training in enterprises should be excluded from the coverage of this data collection with the exception of the school part of combined school- and work-based programmes (➘ see Section 3.5.1) that are explicitly deemed to be parts of the education system
- Entirely work-based education and training for which no formal education authority has oversight is not covered in this data collection. Correspondingly, all continuing training of employees by their employers should be excluded from the statistics that are reported.

3.2 COVERAGE OF EARLY CHILDHOOD PROGRAMMES

Pre-primary education (ISCED 0) is defined as the initial stage of **organised instruction**, designed primarily to introduce very young children to a school-type environment, that is, to provide a bridge between home and a school-based atmosphere.

3.2.1 BOUNDARY BETWEEN EDUCATION AND CHILD CARE

Some countries internally define pre-primary or early childhood education more broadly than others. Thus, the comparability of international statistics on pre-primary education depends on each country's willingness to report data for this level according to a standard international definition, even if that definition diverges from the one that the country uses in compiling its own national statistics.

The distinction between programmes that would fall into ISCED 0 and programmes that would be outside of the scope of ISCED-97 rests primarily on the educational properties of the programme. As the educational properties are difficult to assess directly, several proxy measures should be used to determine whether or not a programme should be classified at this level.

For more details, please refer to Chapter 2 devoted to the implementation of the ISCED-97 classification.

3.2.2 PARTICIPATION IN EARLY CHILDHOOD PROGRAMMES (TABLE ENRL-1, COLUMN 5)

This column should be used to report participation in centre-based early childhood programmes that do not meet the educational content criteria specified for ISCED 0 and ISCED 1 in ISCED-97 (See Chapter 2). This would include publicly sponsored day-care programmes that do not have an educational curriculum.

Individual students enrolled in both an educational programme and a non-educational programme should be reported fully in the educational programme (i.e., not double counted).

3.3 COVERAGE OF "SPECIAL EDUCATION"

Countries have various programmes and delivery mechanisms to provide educational services to mentally, physically, or emotionally disadvantaged students and other groups with special learning needs. These vary in terms of definitions, programmes offered, degree to which special education is integrated into the regular education system, classification of special education students, and type of support given to these students. No common definition of "special education" has been adopted by countries so far, and it is difficult to conceive a methodology that would generate consistent and comparable statistics from countries.

The coverage of all tables is extended to cover special education regardless of normal or special needs of students and educational institutions.

❍ Data on special education, whether offered in schools or in special educational institutions, should thus be included in all statistical tables involving students and educational personnel if the main aim of the programme is the educational development of the individual.

▲ All students in special education programmes should be assigned to specific ISCED levels, either directly or by estimation. Special education should *not be* reported as "not allocated by level". Please refer to Chapter 2 for a description of the criteria of assignment to be used.

3.4 COVERAGE OF "ADULT EDUCATION" AND OTHER "NON-REGULAR" EDUCATION

▲ Educational activities classified as "adult" or "non-regular" education (henceforth referred to as "adult education" for convention) should be included in the statistics *provided that the activities involve studies with a subject content similar to regular educational programmes, or that the underlying programmes lead to similar potential qualifications as corresponding regular educational programmes.* Activities satisfying these criteria of similarity should be included regardless of whether they are classified as general or vocational-technical education.

▲ Educational activities satisfying the above criterion should be included regardless of whether such education is provided by the same educational institutions which provide education to non-adult students or by educational institutions (or components of institutions) specialising in adult education. However, only enrolments in educational institutions, as defined in Section 4.7, should be included. The continuing training of employees by their employers *should not* be included in the statistics.

Programmes or studies designated as "adult education" that are not similar to regular educational programmes as defined above should not be included. In particular, courses or classes for adults that are primarily for general interest or personal enrichment and/or for leisure or recreation should be excluded.

▲ Students in programmes designated as "adult or non-regular education" should be assigned to the most appropriate ISCED levels. Adult education should *not* be treated as a separate level of education and no adult education should be reported under the heading "not allocated by level". Please refer to Chapter 2 for a description of the criteria of assignment to be used.

For adult education that is defined as "similar to regular education" the appropriate data should be reported for students enrolled, educational personnel, and expenditures. If data on educational finance and educational personnel are not available for adult education, then the corresponding students should be excluded from the alignment figures in the alignment Table ENRL-2 (➶ see Section 3.8).

3.5 COVERAGE OF VOCATIONAL AND TECHNICAL EDUCATION

❍ As stated before, vocational and technical training in enterprises should be excluded from the coverage of this data collection, with the exception of combined school- and work-based programmes (such as dual-system apprenticeship) that are explicitly deemed to be parts of the education system. Correspondingly, all training of employees by their employers should be excluded from the statistics that are reported.

▲ The coverage of combined school- and work-based programmes extends to vocational and technical programmes provided by *instructional educational institutions* (➶ see definition in Section 4.7). Note that a student may join such programmes either later in his or her career, or participate in such a programme as a second and further technical and vocational programme.

3.5.1 COVERAGE OF WORK BASED COMPONENTS OF EDUCATIONAL PROGRAMMES

At the upper secondary level (ISC 3), the post secondary, non-tertiary level (ISC 4) and the 5B tertiary level, "vocational and technical programmes" are further divided into "school-based programmes" and "combined school and work-based programmes" on the basis of the

amount of training that is provided in-school as opposed to training at the workplace. Both types of programmes, "school-based" and "combined school and work-based programmes" should be included in the data collection.

These programmes include:

- apprenticeship programmes organised in conjunction with educational authorities or educational institutions that involve concurrent school-based and work-based training and
- programmes organised in conjunction with educational authorities or educational institutions that involve alternating intervals of attendance at educational institutions and participation in work-based training (programmes of training in alternation, sometimes referred to as "sandwich" programmes).

Programmes of dual-system apprenticeship usually are considered part of upper secondary (ISCED 3) education, but other programmes under this heading may be classifiable not only as ISCED 3 but also as ISCED 4 or ISCED 5.

Experience shows that for "combined school and work-based programmes" the inclusion of work-based components is problematic and uneven across countries. The number of students and the number of full-time equivalents given in the tables ENRL-1, ENRL1a should fully include participation in work-based components, while the number of educational personnel for combined school and work-based programmes should *exclude* personnel in the work-based component. This procedure is designed to improve comparability across countries, because none or almost none country could include personnel in the work-based component in previous data collections. It is thus highly important for a correct calculation of student-staff ratios, that the number of students be properly adjusted to educational personnel in the table ENRL-2. This will ensure that the full-time equivalent count of students in "combined school and work-based programmes" reflects only the school-based part of the programme, for which personnel is counted.

⇘ For example, in Austria 130,000 students participate in dual system programmes at upper secondary. They spend 1.5 days per week at school and 3.5 days at the work place. For the number of full-time equivalents in table ENRL-1 both components should be taken into account. However, although the students are classified as full-time, should be the number of full-time equivalents given in table ENRL-2, for the calculation of student-teacher ratios, be adjusted to reflect only on the school-based part. The number of full-time equivalents is now calculated. as number of students times 0.3, or 39,000 FTEs.

Entirely work-based education and training (i.e. with at least a minimum of ***90 per cent work-based content*** and for which no formal education authority has oversight) should not be covered in this data collection.

For details on the definition used for this distinction see section 5.7.

3.6 COVERAGE OF STUDENTS ENROLLED IN EDUCATIONAL INSTITUTIONS ORGANISED BY MINISTRIES OTHER THAN THE MINISTRY OF EDUCATION

At all levels students enrolled in educational institutions organised by Ministries other than the Ministry of Education (⇘ for example, Health, Agriculture, Social Affairs, Defence) should be covered by the statistics if the main aim of the programme is the educational development of the individual (⇘ For example, students in nursing and paramedical programmes).

If data on educational finance and educational personnel are not available for such cases on a comparable basis, then these students should be excluded from the alignment figures in the alignment Table ENRL-2.

3.7 COVERAGE OF NON-NATIONAL / FOREIGN STUDENTS

❍ Unless otherwise indicated, ***all data on students enrolled, entrants, new entrants, and graduates should include both nationals and foreigners***, independent of whether the foreign individuals are integrated into normal educational institutions or are in special educational institutions. The only exceptions are the tables ENRL-6, ENRL-7 and ENRL-8, which request data on foreigners only.

Please refer to section 4.1.2 for a definition of foreign students.

❍ Data on foreign students is further disaggregated between resident and non-resident foreign students. Countries are strongly encouraged to provide data by residence status in order to foster international comparability of data. See section 0.1 for more details.

3.8 ALIGNMENT OF THE DATA ON STUDENTS ENROLLED, EDUCATIONAL FINANCE, AND EDUCATIONAL PERSONNEL

▲ In cases where the coverage of the data on students enrolled, educational finance, and educational personnel differs, these differences must be indicated in Table ENRL-2. This table collects data on the number of students enrolled by level of education with some breakdowns by type of programme with a coverage aligned to the personnel and finance data.

✎ For example, if the statistics on educational finance do not cover expenditures for a particular type of institution, then the students enrolled in this type of institution should be excluded from Table ENRL-2. Similarly, if the data on educational personnel do not cover certain types of programmes or delivery mechanism (e.g. distance education), then the students enrolled in these programmes should be excluded from Table ENRL-2.

▲ In cases where the coverage of the data on educational finance is wider than the coverage of the enrolment and staff data, corresponding documentation should be provided.

3.8.1 DIFFICULTIES INDUCED BY THE INTRODUCTION OF ISCED-97 LEVEL 4

With the implementation of ISCED-97, the classification of students across levels of education is less bound to institutional structures, which may cause difficulties for the reporting of educational expenditure.

In some cases it might be impossible to distinguish expenditure by level of education if students from different levels are enrolled in the same institution. If it is not possible to pro-rate expenditure by level of education within institutions, it might be necessary to report the expenditure of multilevel institutions within only one level of education. If this is the case, these institutions' enrolment must be reclassified in Table ENRL-2 according to the reporting in FINANCE tables. This will most frequently occur at ISCED level 4. Therefore two columns (column 9 and 21) are provided in Table ENRL-2 to align enrolment data to finance data. In column 9 of Table ENRL-2, the number of students classified at ISCED 4 level in ENRL-1a, who are reclassified as ISCED 3 for finance alignment reasons should be reported. In column 21 of Table ENRL-2, the number of students from ISCED 4 programmes (in table ENRL-1a) who are in ENRL-2 reclassified as ISCED 5B for finance alignment reasons should be reported.

✎ For example, institution A offers education at the level ISCED 3 with 1000 students; institution B offers education at levels 3 and 4 with 600 students at level 3 and 200 at level 4; and institution C offers education at level 4 with 1000 students. For the enrolment statistics the students of institution B can be classified and

reported separately. For the reporting in Table ENRL-1a, 1600 students should be assigned to ISCED 3 and 1200 to ISCED 4. If expenditure reporting cannot be broken down by level of education for institutions B and all expenditure is reported at ISCED 3, the enrolment must be reclassified for the purposes of Table ENRL-2. Here 1800 students should be reported to ISCED 3 and 1000 students to ISCED 4 in order to reflect the reporting of expenditure data. The 200 students classified differently in ENRL-1a and ENRL-2 should be reported in Column 9 of Table ENRL-2, “ISCED 3 of which: classified as ISC 4 in ENRL-1a”.

4. STATISTICAL UNITS IN THE DATA COLLECTION

4.1 STUDENTS ENROLLED

4.1.1 THE NUMBER OF STUDENTS ENROLLED

A ***student*** is defined as any individual participating in educational services covered by this data collection. The term "student" is thereby for pupils and students alike.

Two statistics are used to measure the activity of students: the number of students and the number of registrations. The number of students enrolled refers to the number of individuals (head count) who are enrolled within the reference period, while the number of registrations refers to the count of enrolments within the reference period. The two measures are the same if every individual is only enrolled in one programme during the reference period but they differ if some students are enrolled in multiple programmes. Both measures are important. The number of students is used to assess rates of participation (compared to population numbers) and to profile the student body. The number of registrations is used to assess total educational activities for studies, as a means of determining resource allocation and operational efficiency, for example.

Countries use different criteria in reporting students enrolled. For example, some countries have reported the number of students enrolled on a given date in the pertaining level and/or education programme; others have reported the average number of students enrolled during the (calendar) year; and yet others have reported the total number of students enrolled during the (calendar) year (thus potentially double-counting multiple entrants and re-entrants).

For the UOE data collection, the following recommendations are given:

❍ The ***number of students enrolled*** refers to the count of *students* studying in the reference period. Each student enrolled in the education programmes covered by the corresponding table/category should be counted once and only once.

▲ National data collection systems permitting, the statistics should reflect the number of students enrolled at the beginning of the school / academic year. Preferably, the end (or near-end) of the *first month of the school / academic year* should be chosen (special arrangements must be made for part-year students who may not start studies at the beginning of the school year). The method of reporting, the reference period, and the date of data collection should be documented in the header of the corresponding data collection tables (➚ see Section 2).

▲ Countries should document the reporting methods that are used as well as the school/academic year to which the statistics refer (referred to as the *reference period*) and the point in time when the data were collected (referred to as the *data collection period*) (➚ see Sections 2.2 and 2.3).

Exceptions to this may be required at the pre-primary and at the tertiary level of education: at the pre-primary level of education a gradual inflow may exist and, therefore, an average over several counting dates would be preferable. At the tertiary level the enrolment of students may not be stable enough at the beginning of the academic year and therefore a count at a later point may be preferable.

▲ Special pragmatic arrangements must be found to report head-count data for students who attend school only for a very small fraction of the school year.

▲ If students enrol in multiple fields of education, they should be *pro-rated* between the fields of education according to the percentage of instruction devoted to each field.

✎ For example, if a programme consists of 70 per cent of instruction in "Biology" and 30 in "Chemistry" and there are 100 full-time students attending this programme, then 70 full-time students should be reported under the category "Biology" and 30 full-time students under the category "Chemistry". If countries cannot pro-rate students, they should classify the students according to the main emphasis of the programme or study and provide a corresponding note.

When full-time equivalents are reported, the students' time should be apportioned between the fields correspondingly.

▲ Similarly, if students enrol in multiple types of programmes at the same level of education, they should be pro-rated between the corresponding programmes. Where countries cannot pro-rate students, they should classify the students according to the main emphasis of the programme or studies and provide a corresponding note.

When full-time equivalents are reported, the students' time must be apportioned between the educational programmes correspondingly.

▲ Reporting methods which are based on the total number of students enrolled within a period -- which would count two or more times a student joining and leaving a particular programme two or more times in the course of a year -- should be avoided.

▲ Similarly, double-counting students because they enrol in different jurisdictions should be avoided.

▲ Finally, double counting of students who enrol in programmes at different levels of education during the reference period should be avoided, these should be taken out of the corresponding totals and sub-totals. Note: In this case the totals calculated automatically by the UOE ELECTRONIC QUESTIONNAIRE must be overwritten by the corrected totals.

4.1.2 NON-NATIONAL / FOREIGN STUDENTS

The tables ENRL-6, ENRL-7 and ENRL-8 request data on foreign students.

Students are ***non-national students*** (or ***foreign students***) if they do not have the citizenship of the country for which the data are collected.

▲ Countries unable to provide data or estimates for non-nationals on the basis of the passport held are requested to substitute data according to an alternative related concept (✎ for example, the country of residence, the non-national mother tongue, or non-national parentage when this is possible). Corresponding annotations must be made in the data collection instruments.

▲ Table ENRL-7 distinguishes between students from EU-countries and students from non-EU countries. The membership count of the EU should thereby refer to the period in which data are collected and not to the reference period. The current membership of the EU is: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

▲ Table ENRL-7 also distinguishes resident foreign students from non-resident foreign students. This distinction is essential for analyses of international student mobility across countries, it is thus essential to provide this information whenever possible. See section 0.1 for more details on how to classify students according to their residential status.

4.2 NEW ENTRANTS AND ENTRANTS

Data on new entrants are required in order to measure accurately participation at the various levels of education. To answer questions like "What proportion of the population studies at the college, university or tertiary level of education, and how many graduate?" it is necessary to determine the number of new entrants and graduates (without duplication) to compare them to the respective population statistics. Data on new entrants are also required to study retention.

▲ Some countries do not have data on new entrants available. These countries should use the best substitute available (in the worst case the total number of entrants) and document this in the corresponding boxes of Table ENTR-2 (➶ see instructions in Section 4.2.3). Similarly, other countries do not have data on entrants but only on new entrants and therefore may need to use these data as a substitute for data on entrants.

For ***WEI participants***, an additional table ENTR4 collects data on new entrants in the first grade of primary school (ISCED 1), by type of institution, sex and age. This data shall allow UIS to produce indicators on gross and net intake rates for the Education for All monitoring report.

The method of reporting new entrants and data collection period should be documented in the header of the table ENTR4. The reference period is the school year 2000/2001 or 2000.

The questionnaire also documents the number of new entrants who previously attended preprimary or early childhood programmes. The information on prior attendance in preprimary or early childhood programmes may, however, not be easy to obtain, as discussed in the Expert Group Meeting on EFA indicators (Paris, 25-26 June 2001). It should not be considered as a high priority if this information is too difficult to obtain.

4.2.1 NEW ENTRANTS / RE-ENTRANTS / CONTINUING STUDENTS TO A LEVEL OF EDUCATION

❍ ***New entrants to a level of education*** are students who are entering any programme leading to a recognised qualification at this level of education *for the first time*, irrespective of whether the students enter the programme at the beginning or at an advanced stage of the programme.

✎ For example, a student may enter an advanced stage in a programme by virtue of credits gained for work experience or courses taken at another level.

Individuals who are returning to study at a level following a period of absence from studying at that same level are *not* considered to be new entrants.

▲ Operationally, new entrants to a level of education are enrolees who have never been included in the corresponding count of students for that level of education previously.

▲ The statistics on new entrants should reflect the number of students who are new entrants at any point during the reference year. The method of reporting, the reference period, and the data collection period should be documented in the header of Tables ENTR-1 and ENTR-2. If different reference periods are used for different educational programmes or levels of education, this should be indicated.

▲ It is obvious, although worth noting, that any new entrant to a particular level of education is also a new entrant to a programme, and a new entrant to a field of education at that level. However, new entrants to a programme or field of education at a given level of education are not necessarily new entrants to that level.

▲ Foreign students who are enrolling for the first time in the country for which the data are being collected should be counted as new entrants, regardless of their previous education in other countries.

Following initial entrance to a level of study, programme, and field of education, students may interrupt their studies or make changes to the type of programme or the field of education.

✎ For example, students may discontinue to take up full-time employment, engineering students may change to commerce programmes, and vocational students may become academic students. These situations mean changes in programme attributes of the students and, therefore, represent important information in student flows. The change may result in students entering or re-entering a field of education or programme, but as long as the students are enrolled at the same level of education, *they are not new entrants to this level*. If national statistics count entrants to a programme as new entrants to a level of education, then this must be documented in the corresponding checkbox of Table ENTR-2.

Similarly, students who previously obtained a certification at a given level of education, and return without absence for a second programme at the same level, are referred to as new entrants to the programme, but should not be included in the count of new entrants to the level.

❍ ***Re-entrants to a level of education*** are students who were not included in the enrolment statistics at that level in the previous reference year, but had been included during some year prior to the preceding reference year.

❍ ***Continuing students*** Continuing students are students who were included in the enrolment statistics at that level the preceding reference year.

▲ The sum of ***Continuing students, Re-entrants to a level of education*** and ***New entrants to a level of education*** should equal the total number of students enrolled, as reported in table ENRL-1, row A1.

▲ The statistics on new entrants and re-entrants should reflect the number of students who are entering at any point during the reference year. The method of reporting, the reference period, and the date of data collection should be documented in the header of Table ENTR-1.

4.2.2 NEW ENTRANTS TO THE TERTIARY LEVEL OF EDUCATION

A special case arises if movement into a group of education levels is considered. The policy question is now changed to "What proportion of the population is expected to reach the tertiary level (ISCED 5A, 5B, or 6) regardless of which individual ISCED level is concerned".

❍ ***New entrants to the tertiary level of education*** are students who have never entered *any tertiary level* before. In particular, a student should only be counted once if he or she studies at both ISCED levels 5A and 5B.

✎ For example, consider a student studying or completing an ISCED 5B programme, and entering an ISCED 5A programme afterwards. He or she would be counted as a new entrant to ISCED 5A when entering at ISCED 5A level for the first time, but would only be considered a new entrant to the tertiary level of education when entering the ISCED 5B level.

▲ To obtain new entrants to the tertiary level of education **without** any previous education at the tertiary level, it is necessary to sum new entrants to ISCED 5A and 5B while correcting for duplication that occurs for students who have enrolled previously in other tertiary levels.

4.2.3 DOCUMENTING NATIONAL STATISTICS ON NEW ENTRANTS

National definitions concerning entrants and new entrants differ. Countries should attempt to follow the international definitions as closely as possible and document necessary deviations from these as described in the following.

4.2.3.1 RETURNEES TO A LEVEL OF EDUCATION

▲ If national statistics include students enrolled in any programme at the same level of education at an earlier reference period, then please record "YES" for that level of education in row [SE-1] of Table ENTR-2.

▲ These students are further sub-classified into entrants who previously obtained a certification at that level (and who are referred to as ***returnees to a second programme***) and those who did not obtain a certification at that level (who are referred to as ***returnees to a first programme***). If national statistics include such returnees, please record "YES" in rows [SE-2] and [SE-3] for the corresponding levels of education in Table ENTR-2.

4.3 GRADUATES

❍ ***Graduates*** are those who successfully complete an educational programme during the reference year of the data collection. One condition of a successful completion is that students should have enrolled in, and successfully completed, the final year of the corresponding educational programme, although not necessarily in the year of reference.

✎ For example, a student who completed the final year of an upper secondary programme prior to the reference year, but passed the final examination during the reference year should be counted as a graduate of ISCED 3 in the year in which all requirements were completed.

Students who do not complete the final year of an educational programme, but later successfully complete a recognised "equivalency" examination based on knowledge learned outside of the education system, should not be counted as graduates.

✎ For example, taking and passing the General Educational Development (GED) test in Canada or the United States should not counted as an ISCED 3 graduation unless the student has also successfully completed the final year of high school.

❍ ***Successful completion*** is defined according to the graduation requirements established by each country: in some countries, completion occurs as a result of passing a final, curriculum-based examination or series of examinations. In other countries, completion occurs after a specific number of teaching hours has been accumulated (although completion of some or all of the course hours may also involve examinations).

Countries should apply the national definition of a successful completion and should not try to emulate what they think might be occurring in other countries. A graduation should reflect the educational and labour market opportunities open to students successfully completing a particular level of education. Cross-country differences in the stringency of graduation requirements (e.g. high stakes exams versus seat-time requirements) should be left as possible explanations for differences in graduation rates between countries. As the stringency of completion requirements varies dramatically across countries, it is acknowledged that the categorisation of programmes by duration, destination and programme orientation will not necessarily equate level of skills or curriculum coverage.

▲ The method of reporting, the reference period, and the date of data collection should be documented in the header of the corresponding data collection tables.

It should be noted that this reference period for graduates might be different from the reference period for the students enrolled and might also differ by level of education. However, such occurrences should be avoided, whenever possible, and be documented correspondingly should they arise.

▲ Graduates must be carefully distinguished from ***discontinuers*** who are students who enrol in a level, programme, or field of education for one or more reference periods and interrupt their studies for one or more reference periods before successfully completing the programme. Discontinuers are therefore students who follow a reference period of enrolment with a reference period when they are not enrolled.

▲ Note that in some countries, students enrolled in a given ISCED level may complete a programme or obtain a qualification after a period of time which may be considered too short for the purposes of classification as full completion of the ISCED level in question.

✎ Examples of this include the DEUG in France or the university transfer programme in Canada. Such qualifications, although taken by students who are actually enrolled at ISCED level 5A programmes, are not treated as ISCED level 5A completions. See Chapter 2 for further details on the classification of graduates at ISCED 3 and the classification of ISCED 5A.

4.3.1 UNDUPLICATED COUNTS OF GRADUATES

▲ The statistics reported on graduates should refer to graduates and *not* "graduations". Double-counting or duplication should be avoided where students qualify for and receive more than one qualification in different reference periods *within the same category of qualification* in the corresponding graduate tables. However, double-counting or duplication across categories *over time* is permissible.

✎ For example, a student obtaining a qualification at ISCED level 5B in year A should be counted under column 12 of GRAD-4 column 9 for WEI for the year A data collection. If he or she obtains a qualification at ISCED level 5A in year B, he should be counted under column 4 of GRAD-4 column 1 for WEI for the year B data collection.

Likewise, a student may obtain a Bachelor's degree at ISCED level 5A in year A (counted under column 6 column 3 for WEI in that year's data collection), and obtain in year B a Master's degree (counted under column 10 or 11 column 4 or 5 for WEI for the year B data collection).

▲ If countries do not have data on graduates nor can estimate such data, and therefore substitute data on graduations rather than head counts, this should be indicated with a note. In this case unduplicated counts of graduates (GRAD-2, columns 2, 3, 4, 13 and GRAD-4 columns 1, 2, 3, 5, 13 GRAD-4 columns 2 and 10 for WEI) must be coded as missing.

▲ An exception to the principle of reporting unduplicated counts can be made for the reporting of graduates by field of education in table GRAD-5, if unduplicated counts are not available for this breakdown. However, it must be ensured that the total number of graduates over all fields of education reflects an unduplicated count.

▲ The distinction between graduations and graduates and the problem of double-counting also has to be properly addressed when calculating total numbers of graduates. The tables GRAD-2 and GRAD-4 ask for two different types of totals: the sum of all graduations awarded in the reference year and the unduplicated sum (i.e. the total number of ***first-time graduates***). In the unduplicated sum, only those graduates that never before graduated from programmes at the degree of aggregation requested in the column head should be counted. **In general, the unduplicated number of graduates is smaller than the total of all graduates in the reference year.**

✎ For example, column 4 of table GRAD-2 request "Unduplicated counts of graduates" at ISCED 3A, 3B and ISCED 3C of similar duration as typical 3A or 3B programmes. This column should only include the first graduation that a student has from any of these three types of programmes.

At the upper-secondary level of education data provider are requested to provide three different unduplicated counts of graduates.

▲ The ***unduplicated count of all ISCED 3 graduates (Column 2 of table GRAD-2)*** asks for the number of persons that graduate in the reference period from ISCED 3 programmes and did not obtain any ISCED 3 (A, B or C) qualification in previous reference periods.

✎ For example, students that graduated from an ISCED 3A programme in the period of reference but obtained a short ISCED 3C graduation in a earlier year should (correctly) be reported as ISCED 3A graduates, but should be excluded from the unduplicated count of graduates in column 2.

▲ The ***unduplicated count of graduates from ISCED 3A and ISCED 3B programmes (Column 3 of table GRAD-2)*** asks for the number of persons that graduate in the reference period from ISCED 3A or 3B programmes and did not obtain any qualification at one of these levels in previous reference periods. Graduates that previously earned an ISCED 3C qualification do not need to be excluded from the count.

✎ For example, students that graduated from an ISCED 3A programme in the period of reference but obtained an ISCED 3B graduation in an earlier year should (correctly) be reported as ISCED 3A graduates in

column 5, but should be excluded from the unduplicated count in column 3. However, students who graduated from an ISCED 3A or 3B programme in the year of reference and obtained during an earlier reference year an ISCED 3C qualification should be included in the count of column 3.

▲ The ***unduplicated count of graduates from ISCED 3A, 3B and ISCED 3C programmes of similar duration as typical 3A or 3B programmes (Column 4 of table GRAD-2)*** asks for the number of persons that graduate in the reference period from ISCED 3A or 3B programmes or from 3C programmes of a duration that is similar to the typical cumulative duration of a ISCED 3A or 3B programme in the reporting country. Graduates who have previously earned one of the three types of qualifications should be excluded from the count in column 4. Graduates that had earned an ISCED 3C qualification from a programme of significant shorter duration as typical 3A or 3B programmes (i.e. more than one year shorter) should not be excluded from the count in column 4.

✎ For example, if in a country ISCED 3A and 3B programmes have a typical duration of three years, graduates who have previously completed an ISCED 3C programmes of up to 2 years duration must be handled differently than graduates from ISCED 3C programmes of 2 or 3 years duration. Students who earned a degree from a less than 2 years programme at ISCED 3C in a previous year and graduated from a ISCED 3A programme in the reference year should be included in the count in column 4. Students who earned a degree from a 2- or 3-year programme at ISCED 3C or from a 3B programme in a previous year and graduated from an ISCED 3 A programme in the reference year should be excluded from the count in column 4.

The provision of unduplicated counts of graduates at ISCED 4/5A/5B is simpler:

▲ The ***unduplicated count of all ISCED 4 graduates (Column 13 of table GRAD-2)*** asks for the number of students who graduated in the reference period from post-secondary, non-tertiary programmes and had not completed any qualification at this level in previous reference periods.

✎ For example, students who graduated from an ISCED 4A programmes in the period of reference but obtained a short ISCED 4C graduation in a earlier year should be reported as ISCED 4A graduates in column 14, but have to be excluded from the unduplicated count of graduates in column 13.

▲ ***First-time 5A degrees (unduplicated) (Column 5 of table GRAD-4, Column 2 for WEI)*** ask for the number of students who obtained an ISCED 5A degree for the first time. All graduates from programmes at ISCED 5A that obtained an ISCED 5A degree in an earlier year should be excluded from this count.

▲ ***First-time 5B degrees (unduplicated) (Column 13 of table GRAD-4, Column 10 for WEI)*** ask for the number of persons that obtained in the reference period an ISCED 5B degree for the first time.

4.3.2 UNDUPLICATED COUNT OF GRADUATES BY DURATION OF STUDY.

This section does not apply to WEI participants.

Differences in national degree structures can cause problems in the comparability of data on graduates. Indeed, graduates from first degree programmes are commonly reported separately from graduates from second and further degree programmes. An alternative reporting framework is to distinguish graduates by the cumulative duration of study, ignoring the national degree structure.

This procedure, however, requires countries to "net out" the effect that graduations from longer courses of study have on the estimates from shorter courses of study. In principle, each duration category is a synthetic estimate of the proportion of an age cohort that will complete a degree of a specific duration and not go on to complete a higher (i.e., longer) degree.

✎ For example, System A offers a short first degree with a 3 year duration and a second degree with a 5 years cumulative duration. System B offers only a long first degree programme with a 5 years duration. In system A, 33 per cent of an age cohort graduate with a first degree and 11 per cent, about a third of the graduates from the first programme, continue to study until the completion of a second degree after 5 years. In system B, 25 per cent of an age cohort graduate from the long first programme after 5 years. If one reports system A and B by duration of study regardless of the national degree structure, System A should be reported with a graduation rate of only 22 per cent for 3 years programmes, and 11 per cent for 5 years programmes. System B would be reported with a 25 per cent graduation rate for programmes with 5 years duration. Note that it would be incorrect to report a graduation rate of 33 per cent for the 3 year duration category of country A, as the purpose of this measure is to eliminate the double counting of graduates over time.

The ***cumulative theoretical duration*** of initial programmes at tertiary level is simply the theoretical full-time equivalent duration of those programmes from the start of level 5. For programmes that require completion of other tertiary programmes prior to admission (see national degree and qualification structure in Chapter 2), the cumulative duration is obtained by adding the minimum entrance requirements of the programme (i.e. full-time equivalent years of tertiary education prerequisites) to the full-time equivalent duration of the programme. For degrees or qualifications where the full-time equivalent years of schooling is unknown (i.e. courses of study designed explicitly for flexible or part-time study), cumulative duration is calculated based on the duration of more traditional degree or qualification programmes with a similar level of educational content.

✎ For example, the duration of a U.S. master's degree programme (long) at ISCED 5A is typically two years. Students must obtain a bachelor's degree prior to entering the master's programme. The duration of the bachelor's programme is typically four years. The cumulative duration of the master's programme is six years, including four years of studies in the bachelor's programme and two years in the master's programme.

Table GRAD-4 requests unduplicated counts of graduates by the ***cumulative duration of their studies at ISCED level 5A (columns 1 to 3)***. No distinction is made between first-university degrees and second university degrees. In columns 1 to 3 of table GRAD-4, ISCED 5A programmes are classified in three groups:

1. ***ISCED 5A programmes with three to less than five years of cumulative duration,*** are referred as medium length programmes;
2. ***ISCED 5A programmes with five to six years of cumulative duration,*** are referred as long programmes;
3. ***ISCED 5A programmes with more than six years of cumulative duration,*** are referred as very long programmes;

Reporting by cumulative duration raises several problems related to double-counting of students. Whereas for the other unduplicated counts only graduates who obtained a degree within the same category in previous years must be netted out, the reporting of graduation by cumulative duration of studies along requires the netting out of graduates across duration categories.

In order to complete columns 1 to 3 properly, information is needed for each graduate regarding whether or not the graduation is the first graduation at ISCED level 5A, and if not, what the cumulative duration was of the ISCED 5A programme the student previously graduated from. In cases where the student graduated from a shorter 5A programme in a prior year, this graduation must be netted out from the count in the column corresponding to the prior graduation. If a student graduated from two programmes before completing a long programme, i.e. a short programme and medium programme, only the graduation from the medium programme needs to be taken into account. Five categories of graduates from first and second programmes need to be distinguished:

1. First-time graduates from medium length programmes;
2. First-time graduates from long programmes, who have never graduated from a medium length programme;
3. First-time graduates from long programmes, who have graduated from a medium length programme in an earlier reference period;
4. First-time graduates from very long programmes, who have never graduated from a medium length or long programme;
5. First-time graduates from very long programmes, who have graduated from a medium length programme in an earlier reference period, but never from a long programme; and
6. First-time graduates from very long programmes, who graduated from a long programme in an earlier reference period.

Each of the above categories needs to be "unduplicated".

✎ For example, graduates receiving second university degrees of less than 5 years cumulative duration (medium), who graduated previously from a medium length first university programmes in a previous reference period have to be netted out (i.e. unduplicated) from this first category of graduates, since they are not first-time graduates in this category.

▲ For the calculation of the ***unduplicated count of graduates from medium length programmes (column 1)***, the number of graduates that fall in the third or fifth category need to be subtracted from the number of graduates from medium length programmes, category 1.

✎ For example, 100 students graduated in the reference period in system A from a medium length programme and 20 graduated from a long programme. In this case, each of the graduates from a long programme graduated in a previous year from a medium length programme. In order to calculate the unduplicated count of graduates from medium length programmes, 20 graduates have to be subtracted from 100, the unduplicated count being 80 graduates from medium length programmes. Another 10 students who graduated in the reference period from a very long programme, but in this case each of these also graduated from a long programme. Those 10 graduates from very long programmes need to be taken into account, however, for the calculation of the unduplicated count of graduates of programmes of a long duration.

▲ For the calculation of the ***unduplicated count of graduates from long programmes (column 2)***, the number of graduates that fall in the sixth category has to be subtracted from the total number of graduates from long programmes, the sum of categories two and three.

▲ For the calculation of the ***unduplicated count of graduates from very long programmes (column 3)***, the number of graduates from very long programmes, categories four, five and six should be reported.

4.4 REPEATERS

❍ Students enrolling in the same grade or year of study a second or further time should be classified as ***repeaters*** except if the new programme is classified as "higher" than the previous one. "Higher" is thereby operationalised by the individual countries.

▲ Repeaters must be distinguished from participants in second and further educational programmes (the latter must have completed the programme at the level of education successfully before they can enter as participants in a second or further educational programme).

▲ Data on repeaters are collected only for students enrolled in general and academic educational programmes. Data on repeaters at the primary and secondary level are collected in Table ENRL-3.

4.5 EDUCATIONAL PERSONNEL

The classification of educational personnel used by the UOE Data Collection is intended to serve as a framework to classify school personnel for all levels of education (ISCED 0 through 6). The classification is based on functions and organises staff into four main functional categories; three of the four main functions contain sub-functions with specialised types of personnel. The classification is:

I. Instructional Personnel

A. Classroom Teachers (ISCED 0-4); Academic Staff (ISCED 5-6)

B. Teacher Aides (ISCED 0-4); Teaching / Research Assistants (ISCED 5-6)

II. Professional Support for Students

A. Pedagogical Support (ISCED 0-4); Academic Support (ISCED 5-6)

B. Health and Social Support (ISCED 0-6)

III. Management/Quality Control/Administration

A. School Level Management (ISCED 0-6)

B. Higher Level Management (ISCED 0-6)

C. School Level Administrative Personnel (ISCED 0-6)

D. Higher Level Administrative Personnel (ISCED 0-6)

IV. Maintenance and Operations Personnel (ISCED 0-6)

The following definitions of educational personnel should be applied:

4.5.1 INSTRUCTIONAL PERSONNEL (I)

Instructional Personnel (I) includes two sub-categories. The first (A) is: Classroom Teachers at ISCED 0-4 and Academic Staff at ISCED 5-6; the second (B) is Teacher Aides at ISCED 0-4 and Teaching / Research Assistants at ISCED 5-6.

❍ ***Classroom Teachers (ISCED 0-4)*** This staff sub-category includes professional personnel involved in direct student instruction. The classification includes: classroom teachers; special education teachers; and other teachers who work with students as a whole class in a classroom, in small groups in a resource room, or one-on-one inside or outside a regular classroom. It includes chairpersons of departments whose duties include some amount of student instruction.

In table PERS-1, classroom teachers should be prorated between instructional personnel and school level management if information is available on the amount of time these personnel spend on different duties and responsibilities. The category does not include student teachers, teachers' aides, or paraprofessionals.

Classroom teachers without significant school management responsibilities should be reported by gender and age in table PERS-2. Staff that is primarily school management personnel should be excluded from PERS-2 and reported separately in PERS-3, even if they have some instructional duties. However for WEI participants, table PERS-3 is not applicable, and all classroom teachers should be included in PERS-2, regardless of their administrative duties.

PERS-2 should also not include Teacher Aides and Teaching / Research Assistants.

❍ ***Academic Staff (ISCED 5-6)*** - This staff sub-category includes personnel whose primary assignment is instruction, research, or public service. This staff includes personnel who hold an academic rank with such titles as professor, associate professor, assistant professor, instructor, lecturer, or the equivalent of any of these academic ranks. The category includes personnel with

other titles, (e.g. dean, director, associate dean, assistant dean, chair or head of department), if their principal activity is instruction or research. It does not include student teachers or

❍ ***Teacher Aides (ISCED 0-4)*** - This staff sub-category includes non-professional personnel who support teachers in providing instruction to students. The category includes teachers' aides and other paraprofessional personnel who are employed on a full-time or part-time basis by an education system. It does not include student teachers or other personnel who do not get paid for their employment.

❍ ***Teaching / Research Assistants (ISCED 5-6)*** - This staff sub-category includes all students employed on a part-time basis for the primary purpose of assisting in classroom or laboratory instruction or in the conduct of research. Personnel in these positions are typically graduate students who hold such titles as teaching assistant, teaching associate, teaching fellow, research assistant, or equivalent personnel with other titles.

4.5.2 PROFESSIONAL SUPPORT FOR STUDENTS (II)

Professional Support for Students (II) includes two sub-categories. The first (A) is Pedagogical Support at ISCED 0-4 and Academic Support at ISCED 5-6; the second (B) is Health and Social Support at ISCED 0-6.

❍ ***Pedagogical Support (ISCED 0-4)*** - This staff sub-category includes professional staff who providing services to students to support their instructional program. In many cases these personnel were licensed originally as teachers but then moved into other professional positions in education systems. This staff classification includes the following types of personnel: guidance counsellors, librarians, educational media specialists, and attendance officers.

❍ ***Academic Support (ISCED 5-6)*** - This staff sub-category includes all personnel whose primary responsibility is to support the academic program of students. It includes all staff included above, as well as other professional support staff employed in tertiary education institutions.

❍ ***Health and Social Support*** includes all personnel employed in education systems who provide health and social support services to students. It includes the following types of personnel: health professionals such as doctors, dentists, ophthalmologists, optometrists, hygienists, nurses, and diagnosticians; psychiatrists and psychologists; speech pathologists and audiologists; occupational therapists; and social workers.

4.5.3 MANAGEMENT / QUALITY CONTROL / ADMINISTRATION (III)

Management / Quality Control / Administration includes four sub-categories. These are School Level Management, Higher Level Management, School Level Administrative Personnel and Higher Level Administrative Personnel at all ISCED levels.

❍ At ***ISCED 0-4, School Level Management*** includes professional personnel who are responsible for school management / administration. It includes principals, assistant principals, headmasters, assistant headmasters, and other management staff with similar responsibilities. It does not include however receptionists, secretaries, clerks, and other staff who support the administrative activities of the school.

Table PERS-3 (not applicable to WEI participants) collects data on the number of SCHOOL LEVEL MANAGEMENT PERSONNEL BY LEVEL OF EDUCATION, TEACHING LOAD SEX AND AGE for the primary and secondary level of education. Data are collected for all school level management personnel and, separately, those with at least some teaching responsibilities. This table is not restricted to heads of schools or principals. The TEACHING LOAD breakdown distinguishes all school level management personnel from those with at least some teaching responsibilities. For the purpose of reporting in PERS-3, school management personnel that spend at least 0.25 FTE of their working time teaching a group or class of students should be considered as having "at least some teaching responsibilities".

School management personnel with at least some teaching responsibilities at ISCED 1-3 should not be included in counts of classroom teachers in table PERS-2 (except for WEI participants).

❍ At **ISCED 5-6**, ***School Level Management*** this staff sub-category includes personnel whose primary or major responsibility is the management of the institution, or a recognised department or subdivision of the institution. This category includes personnel with the following titles or their equivalents, if their principal activity is administrative: president, vice president, dean, director, associate dean, assistant dean, executive officer or department head.

❍ At ***ISCED 0-4, Higher Level Management*** includes personnel whose primary responsibility is quality control and the management of the education system at the higher level. These personnel may be employed by local boards of education, state or regional ministries or departments of education, or by national ministries or departments of education. Their work may involve direct administration or other functions that support the operation of education systems, (e.g., planning, evaluation, budgeting and accounting, public information, etc.). The category includes the following types of personnel: superintendents of schools, associate and assistant superintendents, commissioners of education, associate and assistant commissioners, directors of instruction and curriculum, directors of planning and evaluation, and other equivalent titles.

❍ At ***ISCED 5-6, Higher Level Management*** includes personnel with similar functions described above for ISCED 0-4. It also includes other administrative / management positions that are specific to the tertiary education sector.

❍ At ***ISCED 0-4, School Level Administrative Personnel*** includes all personnel who support the administration and management of the school. This staff includes receptionists, secretaries, typists and word processors, bookkeepers and clerks, photocopying assistants, etc.

❍ At **ISCED 5-6, *School Level Administrative Personnel*** includes all personnel with similar functions described above for ISCED 0-4 and other personnel who support the administrative / management functions of the institutions. These other personnel include: accountants, analysts, auditors, computer programmers, systems analysts, evaluators, financial aid officers, grant developers, lawyers, network administrators, public relations / informational services officers, registrars, and others with similar functions and responsibilities.

❍ At all ISCED levels ***Higher Level Administrative Personnel*** includes personnel who support the administrative / management functions of the education system at the higher level. These personnel may be employed by local boards of education, state or regional ministries or departments of education, or by national ministries or departments of education.

4.5.4 MAINTENANCE AND OPERATIONS PERSONNEL (IV)

❍ At *all* ISCED levels, ***Maintenance and Operations*** Personnel includes personnel who support the maintenance and operation of schools, school security, and ancillary services, such as the transportation of students to and from school, food services operations. It includes the following types of personnel: masons, carpenters, electricians, locksmiths, maintenance repairers, painters and paperhangers, plasterers, plumbers, and vehicle mechanics. It also includes bus drivers and other vehicle operators, construction workers, gardeners and groundskeepers, bus monitors and crossing guards, cooks / food carers, custodians, food servers, dormitory supervisors, and security guards.

4.5.5 COVERAGE OF DATA ON PERSONNEL

Activity remains a criterion for the inclusion of teacher and personnel. As a consequence early-retired teachers should not be included, regardless of whether their salaries are still reported as expenditure for teacher salaries in FINANCE tables.

Personnel temporarily not at work (e.g. for reasons of illness or injury, maternity or parental leave, holiday or vacation) should be included in the statistics.

At the same time temporary replacements should be included as well as the teachers that are replaced. The teaching load of temporary replacements should be calculated according to the rules given for classification of full-time and part-time teacher in section 5.9. Countries should calculate full-time equivalents in person-years for temporary staff and classify staff members who teach / work less than 90% of a teacher-work-year as part-time.

Personnel working for enterprises that provide services to schools as sub-contractor should be included in the appropriate category, if the personnel hired by the subcontractor is working exclusively or mainly in the school / educational institution.

✎ For example, if the preparation of schools meals is subcontracted to a catering company, but the staff is working exclusively at the school for which they provide food they should be included as if they were employed by the educational institution.

✎ If services are subcontracted and the personnel cannot be distinguished from other services provided by the subcontractor, the personnel should not be included. A typical example would be that of a local transport company carrying out the school bus service as well as other activities during the day. Similar situations might be encountered for building maintenance and school cleaning.

4.6 CLASS SIZE

4.6.1 QUESTIONAIRE ON CLASS SIZE

A new questionnaire has been added to this year's data collection (01class.XLS). Its aim is to collect information on class size for primary and lower secondary education. The questionnaire is limited to these two levels of education because differences across countries in the organisation of the educational systems are manageable at these levels.

The proposed survey consists of two sheets. The first sheet (**CLASS-1**) asks countries to provide data on numbers of classes and numbers of students in primary and lower secondary education. In order to simplify the questionnaire and to ensure comparability between countries, **special needs programmes** should be excluded from this data collection. Thus, data include only regular programmes at these two levels of education. In the rows of CLASS-1, data on average class size can be reported by type of institution.

A second questionnaire (**CLASS-2**) has been added to the survey. In CLASS-2, countries can report, where this information is available, the average class size by grade for primary and lower secondary education.

4.6.2 METHODOLOGY

In term of methodology, two distinct methods are found in countries in the presentation of statistics on average class size. In order to understand the difference in the conceptualisation, it is important to define certain criteria that can lead to differences between countries in the results obtained. Thus, it is really important to define the concept of **"division" and "group".** In fact, pupils can be enrolled in a class and follow different partitions in the programme. The following box presents the differences between a division and a group of pupils:

A "**division**", often commonly referred to as a "class" is made up of the students who are following a common course of study. Pupils/students are grouped together in a division based on the highest number of common courses, usually the compulsory studies. A "division" is the pedagogical structure in which each student is registered. Regardless of his level of study a student is registered in only one division in general by the principal.

A "**group**" generally refers to a sub-group of students in a division who are following some specific options or partitions. The division can be divided in two or more groups in order to follow these modules. A group may also be comprised of students from several different class (e.g modern or ancient languages).

The difficulty in the statistics on class size is to take into account all the courses of study, whether they are conducted in a "group" or in a "division". The method used can generate some differences in the statistics on class size in function of the inclusion or exclusion of the part of the teaching that is done to "groups" of students. It is evident also that **at primary and lower secondary level of education**, this type of teaching **is less frequent** than in upper secondary education where several partitions are proposed to pupils. Thus, in order to fill this questionnaire for primary and lower secondary education, the concept of "division" has been chosen. Further research and developmental work will be needed before this questionnaire can be extended to the upper secondary level of education.

✎ For example, if a teacher has a division of 28 pupils during 8 hours, and this division is also divided in two groups of 14 students during one hour for a specific module. The average size of the class should be calculated by **excluding the teaching in sub-group**, and should equal to:

E/D= Number of students per division = 28/1=**28** with E standing for the total number of enrolees and D representing the total number of divisions.

4.7 ADDITIONAL REMARKS

4.7.1 GENERAL DEFINITIONS ON STUDENT STOCK AND FLOW DATA

Stock data refer to the characteristics / attributes of a specified pool of students for the reference period under consideration. ***Flow data*** refer to individuals who join the pool at the beginning or during the reference period and to students who leave the pool during or at the end of the reference period. The number of students who do not fulfil any of the conditions for

inclusion in the stock data before the beginning of the reference period but gain at least one of them during this time represent the ***inflow***.

The number of individuals who fulfil at least one of the conditions for inclusion in the stock of a group of students at the beginning of the time period and who lose them all during or at the end of the reference period are referred to as the ***outflow.*** These students who are leaving their studies are classified as "graduates" if they have successfully completed the programme of studies in which they were enrolled prior to departure or as "discontinuers" if they have not completed the programme successfully.

In order to measure the -- in and out -- flows of students through the education system accurately, longitudinal records would be required in order to calculate progress / retardation for specific points in the education continuum.

However, such detailed record keeping is not universally available, flow statistics are thus proxied using both the age distribution of new entrants in the first year of the primary, secondary, and tertiary levels of education and the graduation statistics for the upper secondary and tertiary levels of education.

4.7.2 EDUCATIONAL INSTITUTIONS

Educational institutions are not a unit of statistics for the purpose of this data collection anymore. Data on the number of educational institutions is not collected anymore. However, the definition of educational institutions is crucial to define the coverage of educational expenditure. The definition of educational institutions is provided in the sections on expenditure data. (➚ see 6.1.3)

The distinction between public and private institutions is provided with the classification criteria in the data collection tables. (➚ see 5.3)

5. CLASSIFICATION CRITERIA IN THE DATA COLLECTION TABLES

5.1 LEVELS OF EDUCATION

The classification of the levels of education according to the International Standard Classification of Education (ISCED 97) should be applied. Chapter 2 of this manual provides a detailed description of this classification.

5.2 FIELDS OF EDUCATION

The fields of education used in the UOE data collection instruments follow the revised ISCED classification by field of education. For definitions and instructions, refer to Chapter 2 of this binder. The classification is also consistent with the fields of training defined in the FIELDS OF EDUCATION AND TRAINING - MANUAL (EUROSTAT, 1999). The same classification by field of education is used for all levels of education.

This classification distinguishes the following fields:

- **Education**
- Teacher training (ISC 141)
- Education science (ISC 142)
- **Humanities and Arts**
- Arts (ISC 21)
- Humanities (ISC 22)
- **Social sciences, business and law**
- Social and behavioural science (ISC 31)
- Journalism and information (ISC 32)
- Business and administration (ISC 34)
- Law (ISC 38)
- **Science**
- Life sciences (ISC 42)
- Physical sciences (ISC 44)
- Mathematics and statistics (ISC 46)
- Computing (ISC 48)
- **Engineering, manufacturing and construction**
- Engineering and engineering trades (ISC 52)

- Manufacturing and processing (ISC 54)
- Architecture and building (ISC 58)
- **Agriculture**
- Agriculture, forestry and fishery (ISC 62)
- Veterinary (ISC 64)
- **Health and welfare**
- Health (ISC 72)
- Social services (ISC 76)
- **Services**
- Personal services (ISC 81)
- Transport services (ISC 84)
- Environmental protection (ISC 85)
- Security services (ISC 86)

Students not classifiable by field of education should be allocated to the category "Field of education unknown".

5.3 TYPE OF EDUCATIONAL INSTITUTIONS

The definition of educational institutions is crucial to define the coverage of educational expenditure. The definition of educational institutions is provided in the sections on expenditure data. (➚ see 6.1.3)

5.3.1 THE DISTINCTION BETWEEN PUBLIC AND PRIVATE INSTITUTIONS

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.

❍ An institution is classified as ***public*** if it is (1) controlled and managed directly by a public education authority or agency or, (2) is controlled and managed either by a government agency directly or by a governing body (Council, Committee etc.), most of whose members are appointed by a public authority or elected by public franchise.

❍ An institution is classified as ***private*** if it is controlled and managed by a non-governmental organisation (e.g. a Church, Trade Union or business enterprise), or if its Governing Board consists mostly of members not selected by a public agency.

However, the above recommendation is intended only as a practical guideline since in practice the management of schools may be shared between public and private bodies in such a way that composition of a school governing board may not be a critical factor. In general the question of who has the ultimate management control over an institution is decided with reference to the power to determine the general activity of the school and to appoint the officers managing the school.

The extent to which an institution receives its funding from public or private sources does not determine the classification status of the institution. It is possible, for example, for a privately managed school to obtain all of its funding from public sources and for a publicly controlled institution to derive most of its funds from tuition fees paid by households. ***Likewise***, the issue of whether or not a public or private body owns the buildings and site of a school is not crucial to the classification status. The term "ownership" may refer to the ***ownership of school buildings and site***, or alternatively ownership of the institution in the sense of ultimate management control. Only in the latter sense is ownership a relevant concept in classifying institutions.

The extent of the regulation or control which public authorities exercise over privately managed but publicly funded schools should not in general affect the classification of these institutions provided that these institutions are ultimately subject to private control. This regulation may extend to areas such as curriculum, staffing appointments, admissions policies, and other matters. In practice, publicly regulated private schools may pose problems of classification in cases where the extent of regulation is on a par with that of publicly controlled schools. This may especially be the case at tertiary level where institutions may be autonomous and self-governing but subject to considerable public control. Control over such functions as the selection and dismissal of staff, the setting of curricula, the examination and testing of students, and the admission of students may be shared between a public authority and a Governing Board. It is not uncommon for private schools in many countries to be required to teach a national curriculum and be subject to more or less the same regulations as public schools, in return for public funding of these schools.

In the case of some institutions, a legal basis for its foundation may exist in a Public Charter, Deed of Trust, or even legislation enacted by Parliament. In general, the legal instrument on which the institution is founded affects its classification status only to the extent that such a legal instrument enables a public authority to exercise ultimate authority or control over the institution. The issue of public recognition or licensing of private schools should not be confused with the issue of overall control.

✎ For example, it is common for public authorities in many countries to lay down minimum conditions for private schools (both Government-Dependent and Independent) in relation to curriculum or qualifications of staff. In deciding on borderline cases, pertinent data must be compared to that of other countries.

Distinguishing between public and private institutions may sometimes be difficult.

✎ For example, some countries have autonomous, self-governing universities, nonetheless owned and managed by self-perpetuating governing boards made up of private members, that are publicly chartered and considered to be performing a "public" function. In other cases, a public agency may have granted so much educational and fiscal autonomy to individual schools (sometimes vesting authority in school governing boards composed of private members) that few significant elements of public control or governance remain. In still other cases, the degree of public regulation of nominally privately owned and managed institutions may be so great that few vestiges of private decision-making authority remain.

▲ In classifying educational institutions as either public or private, only the school-based component of combined school- and work-based programmes should be considered. Similarly, for the classification of students enrolled in public or private institutions, only the school-based component of combined school- and work-based programmes should be considered. ✎ For example, if a student performs the school-based component in a public school and the work-based component in a private enterprise, the enrolment for this student should be reported under the "public" heading.

5.3.2 THE DISTINCTION BETWEEN GOVERNMENT-DEPENDENT AND INDEPENDENT PRIVATE EDUCATIONAL INSTITUTIONS

❍ 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 from government agencies. "Core funding" refers to the funds that support the basic educational services of the institutions. It does not include funds provided specifically for research projects, payments for services purchased or contracted by private organisations, or fees and subsidies received for ancillary services, such as lodging and meals. Additionally, institutions should be classified as government dependent if their teaching personnel are paid by a government agency -- either directly or through government.

The determination as to whether institutions are government-dependent or independent should be made for classes of institutions rather than for individual institutions.

✎ For example, if a country has a number of church-affiliated upper secondary schools, the determination should depend on whether such schools in general, receive a majority of their core funding from government sources. If the answer is yes, all the schools in the category should be considered government-dependent, even if it happens that some individual schools in the class receive less than a majority share of core funds.

Tuition fees and other fees paid to institutions by students should not be considered government funds, even if the fees are financed by government scholarships or loans to the students or households. In some instances, however, financial aid to students may be primarily an indirect method of channelling general government support to the institutions.

Note: In national accounting, an educational institution is not defined in the same way as an establishment.

5.4 GRADE

Students at the primary and secondary level of education are classified by the grade in which they are enrolled. Students taking subjects in more than one grade should be allocated to the grade where they spend the greatest amount of their time. Students not classifiable by grade (e.g. adults in adult education) should be allocated to the category "Grade unknown". Data by grade are collected in tables Table ENRL-3 and Table ENRL-4.

5.5 AGE

Students and teacher are classified by their age as of 31 December or the date filled in the header of the corresponding data collection table. Age at 31 December is the difference between the year of observation and the year of the person's birth. Age groups are reported in half open intervals [...[. Students not classifiable by age should be allocated to the category "Age unknown".

Where the available data on enrolment or graduates for a country refer to the age of pupils at some date other than December 31st, data providers should re-distribute total enrolment data across ages on the basis of estimation. This adjustment can make a significant difference in the calculation of net enrolment rates by single year of age before and after compulsory schooling. It should be noted that the reference date for enrolment is independent of the reference date for the ages of pupils enrolled.

For example, where a country records pupils in a school census on September 30th according to their ages on September 30th, data on enrolment classified by age should be adjusted so that total enrolment on September 30th is reported according to the estimated age of pupils on December 31st under the assumption that one quarter of any given age-group enrolled on September 30th attain a higher age within the following three months.

5.6 RESIDENT AND NON-RESIDENT NON-NATIONALS

At the university tertiary level of education a distinction is made between resident and non-resident foreign students.

❍ The aim is to distinguish between foreign students who are resident in the country as a result of a prior migration by themselves or their parents and who subsequently enrol in a tertiary level programme ("***resident foreign students***") (e.g. children or parents of families with work visas or permits or with diplomatic appointments, refugees, immigrants with permanent residence status, etc.), and those who come to the country expressly for the purpose of pursuing their education ("***non-resident foreign students***"). The terms "resident" and "non-resident" here are intended merely to convey this distinction and not to suggest that the distinction necessarily be made on the basis of some form of "official" residence status in the country.

Countries are strongly encouraged to improve data reporting by residence status, as defining foreign students only by country of birth can lead to data incomparabilities according to national immigrants' citizenship granting policies.

✎ For instance, France and Germany have very different policies regarding the granting of citizenship to foreign immigrants. Taking into account the residence criterion rather than the sole citizenship may provide a very different picture regarding the importance of non-resident foreign tertiary students in the education system.

It is thus of the utmost importance to improve reporting by residence status for non-national students.

In practice, distinguishing between "resident" and "non-resident" foreign students can be done in a number of ways. For example:

– a "non-resident" foreign student could be a student who holds a student visa or permit;

– a "non-resident" foreign student could be a foreign student who has completed his secondary education in another country.

▲ Data should be provided for both "resident" and "non-resident" foreign students. Data providers should provide annotations for the data on how the distinction between the two groups has been made.

▲ In cases where a student has more than one residence authorisation, the classification selected should be the primary or first immigration document.

✎ For example, if a person came to the country on a work permit and was subsequently granted a study authorisation, the student should be classified as a non-national resident student.

5.7 THE DISTINCTION BETWEEN SCHOOL-BASED AND COMBINED SCHOOL- AND WORK-BASED VOCATIONAL AND TECHNICAL PROGRAMMES

At the upper secondary level and the non-tertiary post secondary level, "vocational & prevocational programmes" are further divided into "school-based programmes" and "combined school and work-based programmes" on the basis of the amount of training that is provided in-school as opposed to training in the work place. (➚ see also Section 3.5.1)

▲ In distinguishing between school-based and combined school- and work-based programmes, classification should be made according to the amount of training provided in school. Programmes should be classified as ***school-based*** if at least 75 per cent of the curriculum is presented in the school environment (covering the whole educational programme) where distance education is included. Programmes are classified as ***combined school- and work-based*** if less than 75 per cent of the curriculum is presented in the school environment or through distance education. The 75 per cent cut-off point should be regarded as a general guideline that may need to be operationalised differently across countries.

▲ The amount of instruction provided in-school should be counted over the whole duration of the programme.

▲ An institution providing school- and work-based programmes is classified as either public or private according to the sole school-based component.

▲ Data providers are requested to provide separate data for the school-based and the work-based component of the combined school-and work based programmes for full-time equivalent students enrolled.

Table ENRL-1a requests information on students in combined school and work-based programmes.

▲ Data providers are asked to enter the number of full-time plus part-time students (head counts) that are in combined school and work-based programmes into row A4.

▲ The number of full-time students in combined school and work-based programmes should be entered into row A8, the number of part-time students (head counts) that are in combined school and work-based programmes into row A11. Please note that in order to distinguish between full-time and part-time students both components of the educational programme, the work-based as well as the school-based should be taken into consideration.

▲ Data providers are requested to provide data for the work-based component of the combined school-and work based programmes for full-time equivalent students enrolled in row A13. Here only the part of the actual study load that takes place at the work place should be taken into consideration.

➘ For example, if a programme takes place for 70 per cent of the instruction time at the school and for 30 per cent at the work place and there are 100 full-time students attending this programme, then ALL 100 full-time equivalents (FTEs) should be included in the total of all FTEs, reported in row A12 and the 30 FTEs that take place at the work place should be included in row A13: "Of which work-based component of combined school and work-based programme".

5.8 PART-TIME / FULL-TIME CLASSIFICATION AND CONVERSION TO FULL-TIME EQUIVALENTS FOR STUDENTS ENROLLED

In the data collection tables ENRL-1 , ENRL-1a and ENRL-2 , students are classified by their pattern of attendance, i.e., full-time or part-time. At the student level, the part-time / full-time classification is thereby regarded as an *attribute of student participation* rather than as an attribute of the educational programmes or the provision of education in general. In the data collection tables, this classification is correspondingly presented together with other individual attributes of students.

It is recognised however, that many countries still make the full-time / part-time distinction based on characteristics of the educational programmes and use corresponding conversion factors at the programme level to transform the measures into full-time equivalents. The definitions and instructions for this data collection accept therefore both individual- and programme-based measurement methods of the degree of participation.

❍ Four elements are necessary for the determination of full-time or part-time status of a student:

– the units of measurement for study load;

– a normal full-time study load which is used as the criterion for establishing full-time participation;

– the students actual study load;

– the time period over which the study loads are measured.

5.8.1 MEASURES OF STUDY LOAD FOR STUDENT PARTICIPATION

There are two basic measures of study load: time in the classroom and progress towards a qualification. ***Time in classroom*** attempts to measure the amount of instruction time that a student receives and can be counted as hours of instruction per day or year, counts of the number of courses taken, or some combination of the two. These measures are based on characteristics of the course or on patterns of attendance, not on the programme in which the student is enrolled. Because of this, such measures of study load will be useful when there is no programme structure or when programme structures are not comparable. The second measure of study load is the unit used to measure ***progress towards a qualification***. Such measures focus less on the amount of instruction and more on the "academic value" of that instruction. It is conceivable, therefore, that courses with the same quantity of instruction may have different academic values and they would only be the same if measures of academic progress is made in amounts of instruction.

▲ The reporting of study load must be made relative to the reference period of the data collection.

▲ ***Normal study load*** is the reference point for determining full-time / part-time status. Countries use national norms to determine the study load. It may be derived from academic definitions of the length and content of programmes of study, consensus definitions of average or typical loads, or statistical definitions applying statistical analysis to derive typical study loads. ***Actual study load*** must be determined in the same fashion as normal study load, so as to allow the assessment of the relationship between the two and to classify the student as full-time or part-time.

▲ Where no explicit reference is made to the mode of education, head-count data refer to the total number of students participating either part or full-time.

5.8.2 CLASSIFICATION INTO FULL-TIME AND PART-TIME STUDENTS

❍ Since the theoretical and actual duration of education programmes differs widely between programmes and countries, and since there are no internationally accepted norms, relative national norms are applied to establish full-time participation as indicated above.

A part-time student will usually require a longer period of time than a full-time student to complete an equivalent programme.

Where individual data for student participation are not available, the recommendations below should be applied to classify students as part-time or full-time participants (it is thereby recognised that countries often have more elaborate systems to report full-time and part-time data, which, if applied, should be documented).

▲ All students enrolled in primary and secondary level educational programmes should be considered full-time when head-count data are reported, if they attend school for at least 75 per cent of the school day or week (as locally defined) and if they would normally be expected to be in the programme for the entire academic year. Otherwise, they should be considered part-time.

▲ When determining full-time / part-time status, the work-based component in combined school- and work-based programmes should be included.

✎ For example, students participating in dual-system apprenticeship programmes on a full-time basis should be classified as full-time students even though the school-based component comprises only part of the programme.

▲ A special issue arises at the pre-primary level. Since this level sometimes involves large non-educational components (leading to large variations in the daily duration of these programmes), students enrolled in pre-primary programmes should be considered full-time if they attend school for at least 75 per cent of the school day or week (as locally defined for the *primary* level of education) and are expected to attend school for the whole reference period.

To allow for the comparison of data on educational expenditures with data on enrolments in a meaningful way, it is necessary that countries report the typical daily duration of the programmes at the pre-primary level in an accompanying note. The ***typical daily duration*** refers thereby to the weighed average of the mean duration of all educational programmes (including non-educational programmes) that are covered by the enrolment statistics at the pre-primary level.

▲ At the tertiary level, an individual is considered full-time (when head-count data are reported) if he / she is taking a course-load / educational programme considered to require at least 75 per cent of a full-time commitment of time and resources. Additionally, it is expected that the student remains in the programme for the entire year.

If students enrol in multiple fields of education or programmes, they should be pro-rated across programmes and fields of education as explained in Section 4.1.

This method ensures that when head-count data are reported, the attendance variable ("full-time / part-time") reflecting the students mode of participation will depend on the total number of course hours attended and will be reported accurately, while the numbers reported by type of educational programme and field of education will be subject to some error (though not necessarily bias). The alternative (i.e., reporting full-time students as multiple part-time students in all corresponding categories) would make the participation variable invalid, and bias the overall count of students.

5.8.3 REDUCTION OF HEAD-COUNT DATA TO FULL-TIME EQUIVALENTS

A full-time equivalent (FTE) measure attempts to standardise a student's actual load against the normal load. Calculating the full-time / part-time status, requires information on the time periods for actual and normal loads. To calculate a FTE, the two periods must be normalised. National norms are applied for this purpose.

For the reduction of head-count data to FTEs, the following recommendations are made:

▲ Where data and norms on individual participation are available (e.g. "credentials"), the product of the fraction of the normal course load for a full-time student and the fraction of the school / academic year can be used as a measure of course-load. [FTE=(actual study load / normal study load) * (actual duration of study during reference period / normal duration of study during reference period).]

▲ When actual study load information is not available, then a full-time student should be considered equal to one FTE. Most countries will use this assumption for the primary and secondary level of education. All countries should use this assumption at the pre-primary level.

▲ If equivalent programmes exist separately as full-time and part-time programmes, then the ratio of the theoretical durations of these programmes can be used as a proxy for the conversion factors of part-time data into full-time equivalents.

▲ To ensure valid international comparisons, it is necessary for countries to document the criteria used to establish full-time participation and the methods used for the reduction to full-time equivalents.

Data providers are requested to report full-time equivalents in tables ENRL-1a and ENRL-2. The reported number of full-time equivalents should include both the FTE of the part-time students as well as the FTE of the full-time students, which usually is equal to the number of full-time students.

➘ For example, if a country reports 1000 full-time students participating in a programme and 200 part-time students with a study load of 50 per cent, the number of full-time equivalents would be 1100, 1000 FTEs representing the full-time students and 100 FTEs representing the part-time students.

For part-time students enrolled, countries are required to provide conversion coefficients into full-time equivalents (➘ see instruction in Section 2.6).

5.9 PART-TIME / FULL-TIME CLASSIFICATION AND CONVERSION TO FULL-TIME EQUIVALENTS FOR EDUCATIONAL PERSONNEL

5.9.1 CLASSIFICATION INTO FULL-TIME AND PART-TIME EDUCATIONAL PERSONNEL

❍ The classification of educational personnel as "full-time" and "part-time" is based on a concept of *working time*. The stipulation of full-time employment is usually based on "statuary hours", or "normal or statutory working hours" (as opposed to actual or total working time or actual teaching time). Some countries operationalise the concept of statutory working time through statutory teaching time. Part-time employment refers to individuals who have been employed to perform less than the amount of statutory working hours required for a full-time employee.

❍ A teacher employed for at least 90 per cent of the normal or statutory number of hours of work for a full-time teacher over a complete school year is classified as a full-time teacher for the reporting of head-count data. A teacher employed for less than 90 per cent of the normal or statutory number of hours of work for a full-time teacher over a complete school year is classified as a part-time teacher.

Note that the 90 per cent cut-off point for educational personnel is different from the 75 per cent cut-off point for students.

▲ Estimates of the full-time / part-time status should be provided if actual data on working hours are not available. Countries should use whatever proxy or correlated information can be obtained to ensure the reliability of estimates. Data on teaching remuneration have often been used to generate such estimates.

An unresolved issue is the treatment of teachers who are linked to multiple educational programmes, either institutionally or through the courses they teach.

⍀ Examples are teachers who divide their work between public and private institutions, between levels of education, or between different functions (e.g. teaching and administration).

In all such cases, the following provisional recommendation is made:

▲ For the reporting of head-counts, teachers should be pro-rated between those levels, educational programmes, types of institutions, and functions to which they are assigned. Whether a teacher is classified as a full-time or part-time teacher will thereby depend on the total number of statutory working hours over all levels, educational programmes, types of institutions, and functions.

▲ Where full-time equivalents are reported, data on teachers should be apportioned correspondingly to the different levels, educational programmes, types of institutions, and functions.

This methodology ensures that the employment variable (full-time / part-time) is reported accurately, while the numbers reported by level, educational programme, type of institution, and function will be subject to some error (though not necessarily bias). The alternative (i.e., reporting full-time teachers as multiple part-time teachers in the different aspects), would destroy the employment variable and also bias the overall count of individuals employed in education.

5.9.2 REDUCTION TO FULL-TIME EQUIVALENTS

▲ Countries should calculate full-time equivalents in person-years. If countries choose instead to calculate FTEs on a specific date, then seasonal variations in personnel should be accounted for. The metric for the measurement of full-time equivalents should be full-time employment, i.e. a full-time teacher equals one FTE. The basis for the calculation are the "statuary working hours" and not the "total or actual working hours" or "total or actual teaching hours".

▲ Full-time teachers who receive additional contracts / remuneration to perform additional teaching tasks should be counted only once, as a full-time teacher, but with a full-time equivalence factor greater than one.

▲ The conversion to FTEs is often difficult for non-teaching personnel. Some countries collect data on the number of contracted hours worked in a typical week in certain categories of non-teaching staff, which are then converted into FTEs.

The full-time equivalence of part-time education personnel is then determined by calculating the ratio of hours worked by part-time personnel over the statutory hours worked by a full-time employee during the school year. Estimates can be based on other information (e.g. salary).

Data providers are requested to report full-time equivalents in the tables PERS-1 and PERS-2. The reported number of full-time equivalents should include both, the FTEs of part-time teachers as well as the FTEs of full-time teachers (which usually equals the head count of full-time teacher).

✎ For example, if a country reports 1000 full-time teachers participating in a programme and 200 part-time teachers with a work load of 50 per cent, the number of full-time equivalents would be 1100: 1000 FTEs representing the full-time teachers and 100 FTEs representing the part-time teachers.

5.10 CLASSIFICATION OF SCHOOL LEVEL MANAGEMENT PERSONNEL BY TEACHING RESPONSIBILITIES

This section does not apply to WEI participants. For WEI participants school level management personnel with teaching duties should be included in the table PERS-2.

Table PERS-3 collects data on the number of SCHOOL LEVEL MANAGEMENT PERSONNEL BY LEVEL OF EDUCATION, TEACHING LOAD SEX AND AGE for the primary and secondary levels of education. Data should be reported for all school level management personnel and, separately, those with at least some teaching responsibilities.

School Level Management includes professional personnel who are responsible for school management / administration (principals, assistant principals, headmasters, assistant headmasters, and other management staff with similar responsibilities but not receptionists, secretaries, clerks, and other staff who support the administrative activities of the school). This table is not restricted solely to heads of schools or principals.

The TEACHING LOAD breakdown distinguishes all school level management personnel from those with at least some teaching responsibilities. For the purpose of this data collection, school management personnel that spend at least 0.25 FTE of their working time teaching to a group or class of students should be considered as having "at least some teaching responsibilities". School management personnel with at least some teaching responsibilities at ISCED 1-3 should not be included in counts of classroom teachers in table PERS-2.

5.11 CLASSIFICATION OF TEACHERS BY TYPE (ORIENTATION) OF EDUCATIONAL PROGRAMME

The rules established by ISCED-97 for the classification programmes' orientation, i.e. general, pre-vocational or vocational, should be applied. The term type is used as equivalent to "orientation" in this paragraph.

Teaching staff often works in more than one level or type of educational programme. They may have more than one function, which makes their classification more difficult. The separate collection of staff statistics for "general and academic" education and "vocational and technical" education therefore poses several conceptual and technical problems in countries where an a-priori classification of teachers by the type of educational programme is not possible. The following recommendation is made:

▲ In some countries teachers are classified by their qualification as *either* teachers of general *or* of vocational-technical programmes so that the allocation is straightforward.

▲ If countries do not have a reporting system which classifies teachers by the level of education and the type of educational programme a-priori, then, for the purpose of reporting head-count data, teachers should be pro-rated according to the time they are assigned to the corresponding levels and type of educational programmes. That is, teachers teaching in different types of programmes should be divided proportionally to their number of statutory working hours. If student-teacher ratios are known, these can be used in order to pro-rate teachers. For the reporting of full-time equivalents, teachers should be apportioned according to their statutory working time in the respective programmes.

▲ In classifying teachers by the type of educational programme, the criterion should be the students that the teacher teaches and not the subjects that the teacher teaches.

6. EDUCATIONAL EXPENDITURE

Section 6 of this manual provides specific instructions concerning tables on educational expenditure. The section is divided into 5 sub-sections.

Sub-section 6.1, COVERAGE OF EDUCATIONAL EXPENDITURE, defines educational expenditure for the purposes of this manual. This sub-section specifically defines educational institutions and their expenditure, and expenditure by households outside institutions. Section 6.1 defines the total amounts to be reported in tables FINANCE-1 and FINANCE-2, and provides the basis for the separation of certain expenditure categories according to their function. It is the basis for the completion of all tables on educational expenditure.

Sub-section 6.2, SOURCES AND TRANSFERS OF FUNDS, describes the sources and flows of educational expenditure. It provides directions as to how educational expenditure should be broken down by the categories used in table FINANCE-1: sources of funds and levels of government, and types of transaction. In addition to the definitions of coverage of final funds described in section 6.1, section 6.2 provides definitions of the transfer payments to be included: public transfers to the private sector, including financial aid to students, and intergovernmental transfers.

Sub-section 6.3, RESOURCE CATEGORIES FOR EXPENDITURE ON EDUCATIONAL INSTITUTIONS, describes the breakdown categories for resources used in educational institutions. These are the categories used in table FINANCE-2: capital and current expenditure, compensation of personnel, and expenditure on ancillary services.

Sub-sections 6.4 and 6.5 provide specific instructions concerning the supplementary tables FINANCESUP-2 (Expenditure on Debt Servicing) and FINANCESUP-3 (Expenditure on Research).

6.1 COVERAGE OF EDUCATIONAL EXPENDITURE

6.1.1 THE SCOPE OF EDUCATION

The **scope of education** must to be defined consistently for all UOE questionnaires. The UOE financial tables should ideally, cover all expenditure, as defined below, on programmes for which enrolments, graduates and entrants should be reported in the corresponding UOE tables. Sections 3 and 7 to 19 of this manual define the scope of those tables.

For technical reasons, however, the coverage of the UOE financial tables may differ from the coverage of the tables on enrolments. Differences of this kind should be minimised. All deviations between the enrolment tables and the tables on educational expenditure should be documented in table ENRL-2. For details see section 3.8.

The reference to the scope of the other UOE tables refers to the *intended count*, e.g. of students, not of the actual reporting. In cases where information on the number of students in some programmes falls under the scope of education and is missing, but data on expenditure is available, the expenditure should be reported despite the missing data on enrolments.

✎ For example, if the ministry of defence provides educational programmes at the tertiary level, for which the number of students is not available but expenditure can be determined from the budget. In this case expenditure should be reported in the finance tables despite the missing data in other UOE tables and the data should be supported by appropriate documentation to indicate a possible overestimation in the calculation of unit costs.

6.1.2 FRAMEWORK FOR EDUCATIONAL EXPENDITURE

For the purposes of international comparison, educational expenditure should ideally be defined as goods and services purchased. Hence, the UOE financial tables should only cover expenditure on a well-defined and comparable set of goods and services related to educational programmes within the scope of this data collection.

However, because of the historical evolution of statistics on educational expenditure, it is not goods and services which are the main defining units of expenditure, but rather *educational institutions*. Traditionally, countries have been interested in how much schools and universities cost, or even more narrowly, how much governments spend on schools and universities. While this approach leads to meaningful and reliable results nationally, the institutional emphasis introduces many problems of international comparability. This is mainly due to the differences between countries in the services provided by educational institutions. Services that are provided inside educational institutions in one country are purchased or provided outside schools and universities in others.

Both concepts therefore need to be taken into account in order to define educational expenditure in an internationally comparable way.

For the purposes of this data collection, a third dimension also needs to be taken into account, the source of funds. Education Ministries and/or National Statistical Offices typically have a very clear understanding of how public money is spent on public institutions and, to a lesser degree, of how much government funding goes to private institutions. For this data collection public, private and international sources of funds need to be included. However, there is general agreement that student living costs cannot be measured adequately. This data collection therefore excludes private student living expenditure, but covers public support for student living costs, via subsidies to households and via institutions.

Figure 1 presents the matrix underlying the reporting for the UOE data collection. In order to determine the coverage of this data collection, educational expenditure first needs to be classified according to the three dimensions explained above:

- Location (inside or outside educational institutions);
- Goods and services; and
- Source of funds.

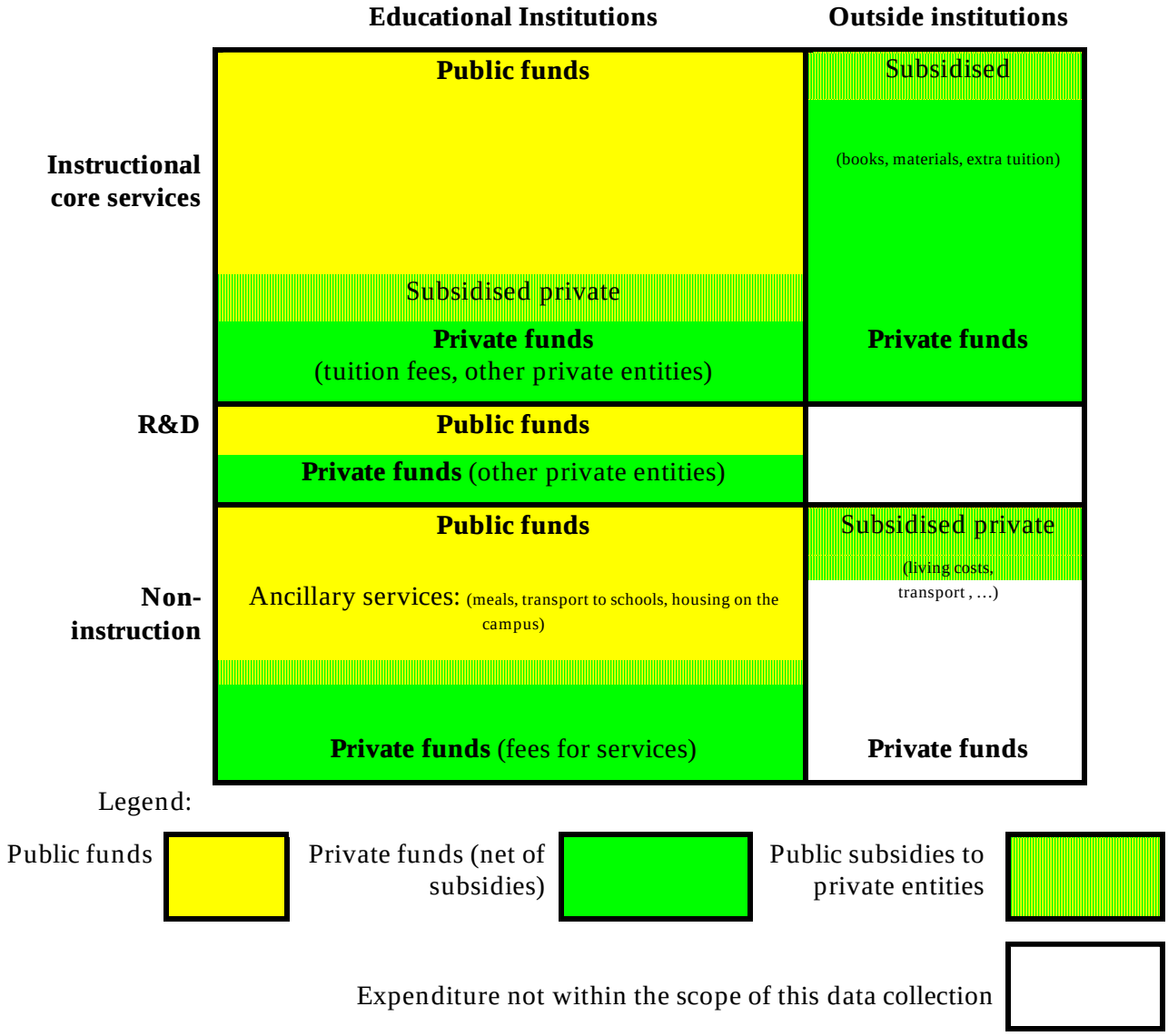
The coverage of this data collection, as shown in Figure 1, can be summarised as follows:

- Direct public, private and international expenditure on educational institutions;
- Private expenditure on educational goods and services purchased outside educational institutions; plus
- Public subsides to students for student living costs.

This definition includes public subsides to students for tuition, which are included in direct private expenditure on educational institutions. This implies, that all public educational expenditure is covered, regardless of whether it is spent on institutions or on transfers to private entities, either for living costs or for educational services. In the case of private expenditure, only

that directly relating to educational goods and services is taken into account. Private spending on student living costs is therefore excluded from the coverage of this data collection, with the exception of expenditure on student living costs paid to institutions. The latter will in fact be excluded from most OECD indicators.

Figure 1.



The rows in figure 1 reflect the different goods and services provided to students or purchased by students.

- The first row, labelled "instructional core services", includes all expenditure that is directly related to instruction and education. This should cover all expenditure on teachers, school buildings, teaching materials, books, tuition outside schools, and administration of schools.

- The second row, labelled "R&D" (Research and Development) covers all expenditure related to R&D. For the purposes of the education indicators, only R&D carried out in educational institutions needs to be taken into account. This category normally applies only to the tertiary sector.

- The third row labelled “non-instruction”, covers all expenditure broadly related to student living costs.

The columns in figure 1 reflect the different service providers. Service providers are separated into “educational institutions” and “other.”

- The first column, “educational institutions”, covers expenditure on educational institutions. Educational institutions include teaching institutions and non-teaching institutions, such as ministries, local authorities and student unions.

- The second column, “outside institutions”, covers expenditure on educational services purchased outside institutions, e.g. books, computers, external tuition, etc. It also deals with student living costs and costs of student transport not provided by institutions.

6.1.3 DEFINITION OF EDUCATIONAL INSTITUTIONS

Educational institutions are defined as entities that provide instructional services to individuals or education-related services to individuals and other educational institutions.

Whether or not an entity qualifies as an educational institution is not contingent upon which public authority (if any) has responsibility for it.

✎ For example, tertiary institutions are classified as educational institutions regardless of which ministry or other authority may have ultimate responsibility for them. In some cases, the Ministry of Agriculture or Defence might have responsibility.

Educational institutions are sub-divided into Instructional Educational Institutions and Non-Instructional Educational Institutions, the latter being of special importance for comparable coverage of the data on educational finance. The term “instructional” is used simply to imply the direct provision of teaching and learning.

Instructional Educational Institutions are those that provide individuals with educational programmes that fall within the scope of this data collection (see section 3). In this document the generic term “school” is often used to refer to instructional institutions at the primary, secondary, and post-secondary non-tertiary levels, and “universities” to those at the tertiary level.

Non-Instructional Educational Institutions are educational institutions that provide administrative, advisory or professional services, frequently for other educational institutions. Non-Instructional Educational Institutions include the following entities:

a.) Entities administering educational institutions include institutions such as national, state, and provincial ministries or departments of education; other bodies that administer education at various levels of government (e.g. administrative offices of local education authorities and education officers of municipalities, and central agencies responsible for the remuneration of staff or pension payments); and analogous bodies in the private sector (e.g. diocesan offices that administer Catholic schools, and agencies administering admissions to universities).

b.) Entities providing support services to other educational institutions include institutions that provide educational support and materials as well as operation and maintenance services for buildings. These are commonly part of the general-purpose units of public authorities (see below).

✎ For example, if a municipal department of public works spends money on maintaining school buildings, this expenditure should be counted as part of educational spending, even if it is not normally found in the education section of the municipal budget.

✎ An example of an institution providing educational support is the Greek textbook publishing organisation (OEDB), which prints and distributes textbooks for students. The OEDB is an agency overseen by the Ministry of Education, but not formally part of it.

c.) Entities providing ancillary services cover separate organisations that provide such education-related services as vocational and psychological counselling, placement, transportation of students, and student meals and housing.

In some countries, housing and dining facilities for tertiary students are operated by private organisations, usually non-profit, which may be subsidised out of public funds. The expenditure on ancillary services furnished by such organisations should be reported as expenditure on government-dependent private institutions or on independent private institutions, depending on whether the organisations qualify for government-dependent status.

For example, in certain countries, housing and student meals at the tertiary level are not offered by universities themselves, but by organisations specialising in student support or student welfare, such as the *Studentenwerk* in Germany, the *studentkårs* and "nations" in Sweden and the *studentsamskipnad* in Norway.

The provision of ancillary services is typically funded by subsidies from the public sector and from "other private entities", and from fees paid by students and households. For details on the reporting of the different funds for ancillary services, see section 6.3.7.

General-purpose units of public authorities (States, municipalities) in many countries provide maintenance and ancillary services such as student transport administration. Although they cannot be defined as educational institutions as a whole, the expenditure on education-related services they provide should be included in the data collection. In that sense, general-purpose units of public authorities should be treated as educational institutions to the extent that they provide services to schools or students.

✎ For example, if the general administrative offices of a municipality provide financial management services and personnel management services for local schools, their expenditure for such purposes should be included in the education expenditure of public institutions. If an agency of national, regional, or local government pays for transportation of students or health care or psychological services within the schools, its expenditure for those purposes should also be included.

d.) Expenditure by institutions administering student loan or scholarship programmes needs to be included. While only the total volume of transfers to students and households should be reported as loans or grants, the administrative costs of the educational institutions administering such programmes should be reported as expenditure on educational institutions.

✎ Examples of educational institutions administering grant and loan programmes are the Swedish CSN and the German *BAFÖG Ämter*.

e.) Entities performing curriculum development, testing, educational research and educational policy analysis should also be included as educational institutions. Examples are the Australian Council for Educational Research (ACER), the Greek National Education Council (ESYP) and Pedagogical Institute, responsible for policy advice and textbook writing, the Czech Institute for Information on Education (UIV) and the Dutch Centre for Higher Education Policy Studies (CHEPS).

6.1.3.1 TYPE OF EDUCATIONAL INSTITUTIONS

Public and private institutions

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. For the sake of convenience, the key definitions of the corresponding definition in section 5.3 are repeated here. For details refer to that section.

An institution is classified as public if it is (1) controlled and managed directly by a public education authority or agency or, (2) is controlled and managed either by a government agency directly or by a governing body (Council, Committee etc.), most of whose members are either appointed by a public authority or elected by public franchise.

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.

Government dependent and independent private institutions

Definition of types of private institutions are given in section 5.3.2. For the sake of convenience, the key definitions of the relevant entities are repeated here. For details refer to that section.

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.

The decision whether institutions are government-dependent or independent should be made in respect of classes of institutions rather than for individual institutions.

6.1.4 EXPENDITURE ON DIFFERENT TYPES OF SERVICES AND GOODS PROVIDED BY EDUCATIONAL INSTITUTIONS

Educational institutions are chiefly defined as those providing goods and services to students and other educational institutions. However, if an entry is classified as an educational institution, this does not imply that all its expenditure should be included. Many entities serve only partially as educational institutions.

✎ Most obvious examples are general-purpose units of public authorities. In their case, expenditure needs to be broken down by function in order to identify educational expenditure. Other entities which are clearly deemed to be educational institutions may provide, besides instruction, services that should be excluded, e.g. child care services.

It is therefore necessary to classify the functions of expenditure within educational institutions in order to determine what expenditure should be reported.

The following list provides an indication of what expenditure by educational institutions needs to be **included**.

- Instruction; (i.e., teaching);
- Educational goods (books, materials, etc) provided by institutions;
- Training of apprentices and other participants in mixed school and work-based educational programmes at the workplace.
- Administration;
- Capital expenditure and rent;
- Student transportation, school meals, student housing, boarding;
- Guidance, student health services, special educational needs;

- Services for the general public provided by educational institutions;
- Educational research and curriculum development;
- Research and development performed at higher education institutions;

The following list provides an indication of what expenditure by educational institutions on services needs to be **excluded**.

- Child care or day care provided by schools and other instructional institutions;
- Expenditure on educational activities outside the scope of the UOE data collection;
- Teaching hospitals; and
- Debt servicing[4].

The following sections provide special instructions concerning categories of spending on educational institutions that have posed problems for international comparability in the past.

6.1.4.1 EXPENDITURES ON RESEARCH AND DEVELOPMENT (R&D)

Inconsistent coverage of expenditure on research and development R&D has proved to be the most significant problem in past comparisons of spending on tertiary education. While some countries have essentially included all R&D expenditures in tertiary spending, others have excluded substantial amounts of separately funded or separately budgeted research. As a result, tertiary expenditure in the latter countries has been understated relative to that in the former.

Countries should include in tables FINANCE-1 and FINANCE-2 all expenditure on research performed at universities and other institutions of tertiary education, regardless of whether the research is funded from general institutional funds or through separate grants or contracts from public or private sponsors. This includes all research institutes and experimental stations operating under the direct control of, or administered by, or associated with, higher education institutions. The question whether R&D performed at teaching hospitals should be included or not causes special problems. For details see section 6.1.4.2.

For OECD Member countries it is crucial, that the coverage of research institutes at the tertiary level should be consistent with the coverage of data reported to the OECD Directorate for Science and Technology (DSTI). As a general rule the UOE data collection should cover all R&D that is covered as Higher Education R&D (HERD) in the OECD / DSTI data collection. Decisions on inclusion or exclusion should be made on the basis of the Frascati Manual (OECD, Paris 1993) Section 3.7.1 (See Annex 1). In case of doubt, the coverage should be agreed with country representatives of the DSTI working group (the contact details of the national representatives to the DSTI can be found in the Annex 2). Data on R&D expenditure collected by Eurostat from Central and Eastern European Countries follow the Frascati manual, while the rest of the non-OECD countries are invited to align the coverage of expenditure on R&D to this as well in order to ensure cross country comparability.

While it is desirable that comparative figures on tertiary spending should include research expenditure, certain forms of research spending are excluded. In an effort to obtain data on which consistent exclusions can be based, a supplementary table has been provided for the reporting of certain components of the research expenditure of tertiary institutions (FINANCESUP-3). For the completion of this table see section 6.5.

[4] Information on debt services is collected in table FINANCESUP2

6.1.4.2 EXPENDITURE FOR TEACHING HOSPITALS

Expenditure by or on teaching hospitals (sometimes referred to as academic hospitals or university hospitals) should not be included in educational expenditure, except to the limited extent that it is directly and specifically related to the training of medical personnel. In particular, all costs of patient care and other general expenses of academic hospitals should be excluded from the education figures, even if such expenses must be paid by the education authorities.

In order to reach full consistency with data reported by OECD/DSTI on R&D, expenditure on R&D at teaching hospitals should be included in the same way as in the reporting of data to DSTI. As a guideline, see the definition in the Frascati Manual (OECD, Paris 1993) (see Annex 1).

6.1.4.3 EXPENDITURE ON ANCILLARY SERVICES

"Ancillary services" are services provided by educational institutions that are peripheral to the main educational mission. The two main components of ancillary services are student welfare services and services for the general public. At ISCED levels 0-3, student welfare services include, such things as meals, school health services, and transportation to and from school. At the tertiary level, they include halls of residence (dormitories), dining halls, and health care. Services for the general public include such things as museums, radio and television broadcasting, sports, and recreational or cultural programmes.

Please note that day or evening child care provided by pre-primary and primary institutions is for the purposes of this data collection not to be included as an ancillary service. Expenditure on such services should to be excluded. (See section 6.1.4.4)

Expenditure on ancillary services poses a special problem for international comparability because countries differ with respect to (1) which ancillary services their institutions provide and (2) whether, or to what degree, expenditure on ancillary services is included in statistics on educational spending. In the past, some countries have included gross expenditure on ancillary services, some have included only net expenditure on ancillary services (i.e., net of fees paid by students), and others have entirely excluded it.

Countries should include expenditure on ancillary services in tables FINANCE-1 and FINANCE-2. Ancillary services are financed by funds from public and other private entities as well as by fees paid by students and households.

Funds from public and other private entities used for ancillary services should be included in government expenditure in parts C, R, L and G of table FINANCE-1 and, accordingly, as expenditure by other private entities in part E.

Fees paid by students or households for ancillary services should be included in household payments to institutions in part H of table FINANCE-1.

The table FINANCE-1 distinguishes expenditure on ancillary services by source of funds. The purposes of collecting separate data on expenditure for ancillary services and its sources are, first, to determine what each country has included and, second, to permit international comparisons of education spending net of ancillary services outlays. For details see sections 6.2.2.2.2 and 6.2.4.2.1.

The special case of free transportation

The classification of some public expenditure is ambiguous, since it may be classified either as ancillary services or as public subsidies to students in-kind. This applies especially to free transport of students to school. Free transport can be provided to students in the form of special school buses or through free tickets for (local) transport companies. In the case of free tickets the

question arises whether the (local) transport companies should be classified as non-instructional educational institutions, or expenditure on tickets should be classified as subsidies in kind.

As a general rule should all expenditure on transportation to and from school be classified as ancillary services, independent of the mode of provision?

Expenditure should be classified as subsidies in kind, if they are on free or price-reduced tickets provided to students which are not mainly intended to facilitate the transport to and from schools, but to support students in general. Here the key criterion for inclusion or exclusion in the UOE is whether or not they are contingent on the student status.

6.1.4.4 DAY AND EVENING CHILD CARE

In some countries, institutions providing pre-primary and primary education also provide extended day or evening child care. In the interest of international comparability, a country where institutions provide these extended day or evening services should attempt to exclude the cost of such services from any reported expenditure statistics, especially at ISCED levels 0 and 1.

6.1.4.5 EXPENDITURE ON EDUCATIONAL ACTIVITIES OUTSIDE THE SCOPE OF THE UOE DATA COLLECTION

Some educational institutions offer, besides the educational programmes that fall under the scope of the UOE data collection, educational activities for which neither participants nor graduates should be considered. Examples would be evening courses provided by schools or universities for adults that are rather to be classified as leisure courses and fall not under the scope of the UOE data collection.

6.1.4.6 EDUCATIONAL EXPENDITURE AT THE WORKPLACE TO TRAIN PARTICIPANTS IN COMBINED SCHOOL AND WORK-BASED TRAINING PROGRAMMES

Expenditure by private companies on certain combined school and work-based programmes that take place at the workplace, and public subsidies for such programmes, should be regarded as expenditure by independent educational institutions for the purposes of this data collection.

Expenditure on these programmes should be limited to expenditure on training per se (e.g. salaries and other compensation of instructors and other personnel, and costs of instructional materials and equipment). It should not include salaries or other compensation paid to students or apprentices.

✎ For example, if the estimated total cost of a dual-system apprenticeship programme to the employer is DEM 10 billion, of which DEM 6 billion is the estimated cost of training and DEM 4 billion is the cost of apprentices' salaries, social security contributions, and other compensation, only DEM 6 billion should be included in rows E3 and E3a. DEM 4 billion should not be considered part of educational expenditure.

Although a portion of the compensation of apprentices might be regarded as a subsidy towards student living expenses, akin to a scholarship, it does not appear feasible to identify or measure that subsidy element in an internationally consistent manner. Therefore, in the interest of comparability, all compensation of apprentices should be excluded from the data.

It is recognised that national statistics on educational expenditure do not normally include the costs incurred by employers (public or private) in training apprentices or participants in school and work-based training programmes. In the few cases where information on these costs is available, it consists of estimates derived from sample surveys of employers. Countries that are able to include such estimates in their expenditure figures should attach notes identifying the data source and (in general terms) the methodology. Countries where employers have incurred such costs but which are unable to provide estimates of the amounts should indicate clearly that

expenditure by employers has been omitted. This information is essential if incorrect calculations of expenditure per student at the relevant educational levels are to be avoided.

Countries that cannot provide data on expenditure at the workplace need to adjust the coverage of full-time equivalents in table ENRL-2 to reflect only the school-based part of the programme, for which expenditure is included.

✎ For example, 10 000 students are enrolled in school and work-based programmes with 2 days of school and 3 days at the workplace per week. The expenditure that occurs at the workplace is excluded from the financial data. In this case, table ENRL2 should report the students as full-time students, but the FTE number of students should be reduced by 60 per cent, i.e. to 4,000.

6.1.4.7 MEASUREMENT OF EXPENDITURE FOR CONTRIBUTIONS ON PENSION SCHEMES

Inconsistency in reporting the costs of pension programmes has created problems in the past in the comparison of educational expenditure between countries. Retirement expenditure is defined, in principle, as the cost incurred currently, exclusive of any contribution by employees, in providing future retirement benefits for persons currently employed in education. This cost can be measured by actual or imputed employers(or third party) contributions to retirement systems. (The reason for not counting employee's contributions is that they are already counted in the gross salary component of total compensation.)

In the case of a fully funded, contributory pension system, the current employer contribution to the pension fund is the appropriate amount to report as expenditure on retirement. In the case of a completely unfunded ("pay as you go") retirement system, of the type used to provide pensions for civil servants in many countries, the expenditure on retirement must be estimated or imputed. In cases where employers contribute to a retirement system but the contributions are inadequate to cover the full costs of future pensions, retirement expenditure is the sum of actual employers (or third party) contributions and the imputed contribution necessary to cover the projected funding gap.

Standard methods have not been developed yet to estimate retirement costs in cases where some or all of the costs must be imputed. Moreover, the estimation method may have to vary, depending on the nature of the retirement system and the availability of data in each country. For the time being, countries should provide their best estimates of retirement costs, in line with the foregoing general definition. Note in this regard that the amount currently being paid in pensions to former employees who have already retired is not the desired measure of retirement expenditure, although this amount may be relevant in order to project the retirement costs of persons currently employed.

The System of National Accounts 1993 (SNA93) as well as the European System of Accounts (ESA95) for EU countries[5] gives some guidance on the reporting of imputed social contributions. The relevant sections of SNA93 can be found in Annex 3.

6.1.4.8 DEBT SERVICING AND EXPENDITURE FINANCED BY LOANS

The expenditure reported in these tables should represent the value of educational expenditure and of capital assets acquired or created during the year in question regardless of whether the outlays were financed from current revenues or by borrowing.

✎ For example, if a school building costing FFR 50 million is constructed in 2001, the full FFR 50 million should be reported as capital expenditure for 2001, even if the building is financed by a loan, with repayment spread over 20 years. If the building was constructed over the two-year period, 2001 to 2002, with FFR 30

[5] Council Regulation (EC) No 2223/96 of 25 June 1996 on the European system of national and regional accounts in the Community, Official Journal L 310 , 30/11/1996 p. 0001 - 0469

million of the cost of construction paid in the first year and FFR 20 million in the second year, capital outlays of 30 and 20 million, respectively, should be included in the 2001 and 2002 data.

On the other hand expenditure on servicing debts is specifically excluded from tables FINANCE-1 and FINANCE-2. It is not considered part of either current expenditure or capital expenditure. Expenditure on debt servicing consists of (1) payments of interests on the amounts borrowed for educational purposes and (2) repayments of the principal. It should be reported only in the supplementary table, FINANCESUP-2, provided for that purpose.

6.1.5 EXPENDITURE OUTSIDE EDUCATIONAL INSTITUTIONS

As the framework for educational expenditure indicates, expenditure related to education occurs not only within, but also outside educational institutions. Two types of expenditure related to education that occur outside institutions can be identified: *i)* expenditure on educational goods and services purchased by households and students outside institutions, in the free market; and *ii*) expenditure by students and households on student living costs and any foregone earnings.

While the first type is to be included in the UOE data collection tables, student living costs and foregone earnings are not considered educational expenditure for the purposes of this data collection, with the exception of subsidies for them from public and other private entities.

6.1.5.1 EXPENDITURE ON EDUCATIONAL SERVICES AND GOODS

Educational goods purchased outside institutions should include books not supplied by educational institutions, school supplies, paper, school uniforms, athletic equipment, calculators and computers.

The expenditure on educational goods that should be considered depends on the underlying policy questions. Two different approaches can be identified. Firstly, only costs that educational institutions or the educational system impose on students or households. Here is the underlying question: which costs does the school system delegate to households, and which expenditures are explicitly or implicitly required by schools from households to participate? A second perspective, which looks at the overall investment of the society takes all payments into account that families make related to educational activities, independent whether they are imposed by institutions or volunteer by families to improve the chances of students.

While the first perspective is deemed as the appropriate one, when it comes to the expenditure directly related to the existing educational institutions, it seems the latter is more appropriate when measuring the full investment of societies in UOE-type education.

Educational services purchased outside institutions will mainly consist of private expenditure on private tutoring outside school. A clear linkage to the UOE programmes students participate in should be given. Outside school tuition should be restricted to tuition intended to support the participation in programmes that fall under the scope of the UOE. Expenditure on courses that are not related to the UOE programmes that students participate in, i.e., language courses of languages not instructed at school, should not be covered.

There are three categories in which the UOE tables collect household expenditure on educational goods and services outside institutions:

1. Expenditure on educational goods purchased outside institutions, which are needed to participate in the programmes, or in other words expenditure directly or indirectly imposed by institutions. Examples are school uniforms, books requested for instruction, athletic equipment, material for arts lessons... (Row FINANCE-1 H15)
2. Expenditure by households on educational goods not requested by institutions, but bought by households with the intention to support learning in UOE type education. Examples can be

additional books, computer, learning software to be used at home, … . For the second group of goods the perception of the households on the purpose for purchasing the goods is rather the criterion than the directions by institutions. (Row FINANCE-1 H16)

3. Fees for outside school tuition related to UOE educational programmes. (Row FINANCE-1 H17)

Generally, these purchases are not made from educational institutions, but rather from ordinary shops and other third-party suppliers. Purchases from commercial enterprises operated or sponsored by educational institutions (e.g. university bookstores) however, should be included.

Fees that students are required to pay to institutions for such things as laboratory materials and art supplies should not be reported as educational goods purchased outside institutions but should be included in rows H1, H2, and H3 of table FINANCE-1 and in the corresponding rows in FINANCE-2.

Expenditure on educational goods and services purchased outside institutions will typically be measured by household expenditure surveys. Therefore, the definition of goods and services needs to match that in the national survey instrument. However, care needs to be taken so that double counting resulting from an overlap with expenditure on educational institutions is avoided, and so that the national definitions follow as closely as possible the definitions given here and exclude expenditure on student living costs.

✎ For example, if private expenditure on educational institutions (row H5) is reported on the basis of school accounts, and includes fees paid by households for laboratory materials and art supplies besides tuition fees, it needs to be ensured that the same fees are not counted again as for payments outside institutions (row H16) on the basis of households report in educational expenditure surveys.

6.1.5.2 STUDENT LIVING COSTS

In general, the living expenses of students -- costs of housing, meals, clothing, recreation, etc. -- are not considered part of educational expenditure for the purposes of this data collection. Whether such expenses should be included is debatable. It can be argued, for example, that students would have to incur most of such costs even if they were not studying, but that certain incremental costs (e.g. the extra cost of residing at a university instead of with one's family) should be considered part of the cost of education. Because of the obvious practical difficulties, no attempt is made to collect data on these incremental costs. No student living costs should be included in rows H1 to H20 of table FINANCE-1, with the exception of fees on ancillary services furnished by educational institutions.

One aspect of student living expenses is taken into account, however, in order to maintain a complete picture of total investment by public and other private entities in education. In most of the countries covered by this data collection, public and private scholarships, grants, or loans are provided to students not primarily or exclusively to cover the tuition fees charged by educational institutions, which are often minimal or non-existent, but rather to subsidise student living expenses. Student living costs are also supported in kind by various ancillary services provided by institutions. Although the student living costs themselves are not to be taken into account, transfers to households and students need to be included in the table FINANCE-1, sections L, R, C, G and E. For details see section 6.2.2.4.

6.2 SOURCES AND TRANSFERS OF FUNDS: THE EXPENDITURE CATEGORIES OF FINANCE-1

6.2.1 THE STRUCTURE OF TABLE FINANCE-1

Table FINANCE-1 is headed "Educational expenditure by source, type of transaction, and level of education". Its function is to obtain the data needed to construct indicators of education expenditure by initial and final source of funds, and indicators of the financing of educational institutions and students, all disaggregated by level of education and service provider.

All entities that provide funds for education, either initially or as final payers, are classified as either governmental (public) sources or non-governmental (private) sources, the sole exception being "international agencies and other foreign sources", which are treated as a separate category.

The table is organised by source of funds. It has separate sections to report the educational expenditure of central, regional, and local governments, international sources of funds, households, and other private entities. It distinguishes between the three types of financial transactions:

- Direct expenditure on educational institutions;
- Transfers to students or households and to other private entities; and
- Households' expenditure on education outside educational institutions.

Under governmental expenditure, intergovernmental transfers are further separated. The table disaggregates direct expenditure according to the type of service provider to which, or for which, the payments are made -- that is, public institutions, government-dependent private institutions, and independent private institutions.

This section provides specific instructions concerning the detailed expenditure categories (individual row items) of table FINANCE-1. Note that individual rows in the table are identified by combinations of letters and numbers, in which the letters correspond to funding sources, as follows:

C = central government expenditure

R = regional government expenditure

L = local government expenditure

G = government expenditure (all levels of government combined)

F = funds from international agencies and other foreign sources

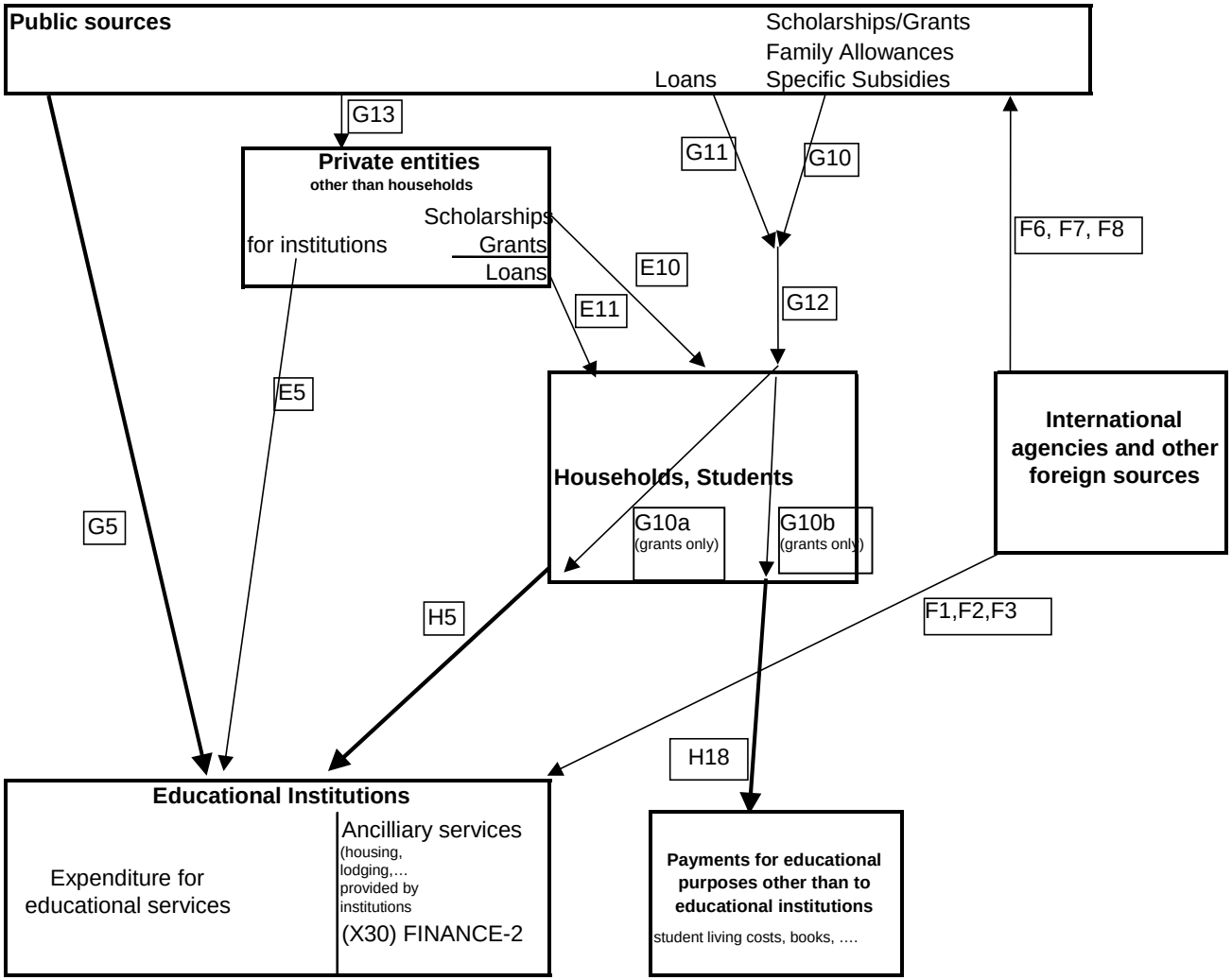
H = household expenditure

E = expenditure by other private entities

P = private-sector expenditure (households and other private entities combined)

N = combined public and private expenditure

Diagram 1: Flows of funds/transfers for education according to the UOE table FINANCE1



The boxes next to the arrows indicate the rows in FINANCE1 in which the according funds/transfer should be reported.

6.2.2 GOVERNMENT (PUBLIC) SOURCES

No distinction is made in the classification of public sources between education authorities and other government agencies. Thus, a country should include in central government expenditure not only the expenditure of its national education ministry, but also all expenditure on education by other central government ministries and authorities. Similarly, educational expenditure by regional and local governments should include not only the expenditure of the regional or local agencies with primary responsibility for operation of schools (e.g. provincial ministries of education; or local education authorities) but also the expenditure of other regional and local bodies that contribute to the financing of education. In order to determine which public entities need to be taken into account, sections 6.1.3 and 6.1.3.1 on the definition of educational institutions and section 6.2.2.4 on transfers to the private sector, need to be considered carefully.

Table FINANCE-1 recognises three main types of government expenditure on education: (1) direct expenditure on educational institutions, (2) intergovernmental transfers for education, and (3) transfers or other payments from governments to households and other private entities.

6.2.2.1 CLASSIFICATION OF LEVELS OF GOVERNMENT

The sections on government expenditure distinguish between different levels of government. All government sources (apart from international sources) should be classifed in three levels:

- Central (national) government
- Regional government (province, state, Land, etc.)
- Local government (municipality, district, commune, etc.).

For EU countries the NUTS99[6] classification should be used to determine the level of government. This information should also be given in the supporting country explanatory notes. There is no category for “other government” or “other public” sources. For the rest of the countries government entities that are not normally classified as central, regional, or local should be assigned to the most appropriate level, based on the scope of their responsibilities.

✎ For example, a separate national social security agency that spends funds on education (e.g. pensions for teachers) should be considered part of central government. An association of local governments should be considered part of local government.

The classification of governments by level is clear in most cases, but there are some ambiguities. If a country only has two levels of government, the lower level usually should be designated local, not regional. If there are four or more levels, the second level usually should be designated regional and the third, local. If a city (such as the national capital) has dual status as both regional and local government, its expenditure should usually be classified as local. The reason for the term “usually” is that these rules may not be appropriate in all circumstances. Possible exceptions should be discussed with the OECD Secretariat.

The terms “regional” and “local” apply to governments whose responsibilities are exercised within certain geographical subdivisions of a country. They do not apply to government bodies whose roles are not geographically circumscribed but are defined in terms of responsibility for particular services, functions, or categories of students.

[6] The Nomenclature of Territorial Units for Statistics (NUTS) nomenclature serves as a reference for the collection, development and harmonisation of EU regional statistics and for socio-economic analyses of the regions. (web reference for NUTS 99: http://europa.eu.int/comm/eurostat/ramon/nuts/nuts.htm)

6.2.2.2 DIRECT EXPENDITURE ON EDUCATIONAL INSTITUTIONS

"Direct expenditure on educational institutions" by a government may take either of two forms:

1. Purchases by a government agency of educational resources to be used by educational institutions. Examples include direct payments of teachers' salaries by a central or regional education ministry, direct payments by a municipality to building contractors for the construction of school buildings, and procurement of textbooks by a central or regional authority for subsequent distribution to local authorities or schools.
2. Payments by a government agency to educational institutions that have the responsibility of purchasing educational resources themselves. Examples of such payments include a government appropriation or block grant to a university, which the university then uses to pay staff salaries and to buy other resources, government allocations of funds to fiscally autonomous public schools, government subsidy to private schools; and government payments under contract to private companies conducting educational research.

In principle, it might be possible to distinguish between these two types of direct expenditure, but as the distinction is not needed for current or anticipated indicators of educational funding, it is not reflected in table FINANCE-1.

Direct expenditure by a government agency does not include tuition payments received from students (or the families of students) enrolled in public schools under that agency's jurisdiction, even if the tuition payments flow, in the first instance, to the government agency rather than to the institution in question. Such tuition payments should be reported as payments by students or households to public educational institutions. For further details concerning this point, see section 6.2.4.2.1.

Direct expenditure by central government on public institutions, government-dependent private institutions, and independent private institutions should be entered in rows C1, C2, and C3, respectively. Row C4 is the sub-total of expenditure on the two types of private institution (C2 + C3). Those countries however, which have no separate data for government-dependent and independent private institutions may enter figures for both types of private institutions combined in row C4. Total direct expenditure by central government on all three types of institution combined (row C5) is calculated as C1 + C2 + C3 or, equivalently, as C1 + C4. Similarly, rows R1 to R5 and L1 to L5 should be used to report direct expenditure by regional and local governments on the three types of educational institutions.

6.2.2.2.1 Direct expenditure designated for capital

Although table FINANCE-1 does not in general distinguish between capital and current expenditure, a set of rows (C5a, R5a, L5a, and G5a) is reserved to report the proportion of total direct expenditure by each level of government which is "designated for capital". These rows help UNESCO to maintain the continuity of its indicators of current and capital expenditure from public sources. Note that the concept reflected in these data categories is that the expenditure in question has been explicitly designated, or "earmarked," for capital. Actual capital expenditure (on buildings, equipment, etc.) may exceed the amounts designated for capital if funds not specifically earmarked by governments for capital formation are used to finance capital outlays.

✎ For example, if a university received certain government funds specifically designated for building construction but also used funds derived from a non-earmarked government block grant or from tuition fees or research contracts to pay for the construction of buildings, the university's total capital outlay (as reported in table FINANCE-2) would exceed its public funds designated for capital (as reported in table FINANCE-1).

6.2.2.2.2 Direct expenditure designated for ancillary services

With the suppression of table FINANCESUP-1 is the collection of data on ancillary services by source of fund integrated in table FINANCE-1. (See 6.1.4.3) Public expenditure designated for ancillary services should be reported in row G5b.

Note that the concept reflected in this category is that the expenditure in question has been explicitly designated, or "earmarked," for ancillary services. The amounts actually spent for ancillary services may exceed the amounts designated for ancillary services by public and other private sources plus fees paid by households in cases where funds not specifically earmarked by governments are used to finance ancillary services.

6.2.2.3 INTERGOVERNMENTAL TRANSFERS

"Intergovernmental transfers" are transfers of funds designated for education from one level of government to another. The restriction to funds earmarked for education is very important in order to avoid ambiguity about funding sources. General-purpose intergovernmental transfers should not be included (e.g. revenue sharing grants, general fiscal equalisation grants, or distributions of shared taxes from a national government to provinces, states, or *Länder*), even where such transfers provide the funds that regional or local authorities draw on to finance education.

In an effort to simplify table FINANCE-1, intergovernmental transfers have been defined as net transfers from a higher level to a lower level of governments.

✎ Thus, for example, the category "central government transfers to regional governments" means central-to-regional transfers for education and not vice versa. In general, the reverse transfers -- those from a lower level to a higher level of governments -- are likely to be very small, and it would needlessly clutter the table to account for them separately.

It appears, however, that in a few situations (specifically in the Nordic countries), transfers from local to regional authorities may be greater than transfers from regional to local authorities. Where such situations occur, the resulting net flows of funds should be reported as negative transfers by the higher-level government.

✎ For example, if regional authorities receive from local authorities, say, 5 million more kroner than they provide to local authorities, the result should be reported in row R8 as a net regional-to-local transfer of minus 5 million.

Net transfer payments for education from central to regional governments should be reported in row C7, central to local transfers should be reported in row C8, and total central government transfers C7 + C8 should be reported in row C9. Transfers from regional to local governments should be reported in row R8.

In some instances, central government transfers to local governments are "passed through" regional governments; that is, the regional governments are responsible for disbursing central government funds to local authorities. In cases where this disbursement is compulsory (i.e., regional governments may not retain the funds for their own use), the payments in question should be classified as central government transfers to local rather than to regional governments.

Every transfer from one level to another needs to be reported as expenditure at the level of government receiving the funds. The design of the UOE table ensures that double counting in total expenditure by all level of government (G1 to G20) is avoided. Expenditure that is only reported as a transfer, but not as expenditure at the receiving level of government is to be excluded from the totals.

✎ For example, the regional authorities spend from their own sources 100 million LCU on educational institutions, and receive an additional 200 million LCU as transfers from the Ministry of Education for expenditure on educational institutions. The ministry also spends 50 million LCU directly on educational

institutions. In that case 200 million LCU should be reported in row C7 as a transfer, 300 million LCU (200+100) should be reported as spending by the regional level on educational institutions in row R5 and 50 million LCU as central spending in row C5. The total public spending on institutions (row G5) will be calculated as to 350 million LCU, C5 plus R5.

Double counting must be avoided when transfers at the same level of government occur. If a national ministry transfers education funds to another central public entity, or if one local government (say, a municipality) transfers funds to another (say, a local education authority), the transfers must be netted out of the expenditure by the level of government in question.

6.2.2.4 PUBLIC PRIVATE TRANSFER

The table recognises government transfers and certain other payments to students and households and other private entities. In the case of financial aid to students, a distinction is made between two forms of aid, (1) scholarships and other grants and (2) student loans.

Government scholarships and loans should be attributed to the level of government directly responsible for providing funds to students, even if another level of government ultimately covers some or all of the cost.

✎ For example, if students receive loans from provincial authorities, who in turn are reimbursed fully or partly by the central government, the loans should still be reported as coming from regional (i.e., provincial) governments. The reimbursements of the provinces by central government should be included in intergovernmental transfers from central to regional governments.

6.2.2.4.1 Scholarships and other grants

Government scholarships and other government grants to students and households should be reported in rows C10, R10 or L10, depending on which level of government provides them. The amounts entered in these rows should include the following items:

- Scholarships and grants;
- Special public subsidies in cash and kind; and
- Family allowances or child allowances that are contingent upon student status.

Scholarships and grants

This category covers public scholarships and all kinds of similar public grants, such as fellowships, awards and busaries for students. Government scholarships that are channelled through educational institutions for administrative purposes should still be reported as government transfers to students. In other words, a central government scholarship should be reported as expenditure by central government regardless of whether the funds are paid directly to the student or to an educational institution on behalf of the student.

Special public subsidies in cash and kind

Special public subsidies are all those transfers to households that are linked to specific spending by students and are contingent upon the student status. The spending subsidised excludes all kinds of tuition costs, with the exception of tuition and other fees paid to institutions abroad. Only in exceptional cases will the payments go to educational institutions as fees for ancillary services, i.e. for lodging, meals, health services, or other welfare services furnished to students by the educational institutions. Those payments that go to institutions have to be treated with care so that subsidies attributable to institutions are separated out.

The following special subsidies should be reported:

- Special subsidies for transport;

- Special subsidies for medical expenses;
- Special subsidies for books and supplies;
- Special subsidies for social and recreational purposes;
- Special subsidies for study abroad; and
- Other special subsidies.

Special public subsidies should cover the total value of special subsidies provided to students, either in cash or in kind, such as reduced-price travel on public transport systems.

Family allowances or child allowances contingent upon student status.

Family allowances or child allowances that are contingent upon student status should be included. Allowances that are independent of the educational status of a child should be excluded.

✎ For example, if a country provides family allowances for all children up to age 18 regardless of educational status and provides additional allowances for young people aged 19-25 who are enrolled an educational institution, the allowances for young people 19-25 should be included in scholarships and other grants, but the allowances for those aged 18 and below should not be counted.

Financial aid to students excluded from the current UOE data collection

Some countries offer special tax benefits to students or their families, such as tax credits or deductions from taxable income. Although it might be desirable, in principle, to take these into account in comparing countries with respect to financial aid to students, the complex issues of how tax benefits should be measured have not yet been addressed or resolved. For the time being, therefore, countries should **exclude** from their expenditure figures any benefits provided to students and households in the form of tax reductions, tax subsidies, or other special tax provisions. The development of a set of financial aid categories sufficiently comprehensive to include tax subsidies remains a task for the future.

Scholarships and other grants attributable to educational institutions

Information on public subsidies to households is important for the calculation of net payments by households to educational institutions. However, public subsidies are not used exclusively in most countries for educational institutions. Net expenditure by households on educational institutions cannot therefore be calculated by subtracting the total amount of subsidies to households from private expenditure on educational institutions. The portion of subsidies received that is spent on educational institutions needs to be estimated separately.

It should be noted, that unlike previous data collections and indicator calculations, net expenditure by households will from now on be calculated only on the basis of grants received. Loans received by students will not be netted out from household expenditure since they are interpreted as delayed private payments which, occur when loans are repaid. Therefore, the only information on subsidies attributable to payments on educational institutions is required is that relating for grants.

Some subsidies are clearly earmarked to cover tuition or other fees paid to institutions, whereas subsidies for general purposes can be used for tuition fees or other expenditure. In many cases, countries have to estimate, from certain assumptions, surveys or other information, what proportion of these subsidies should be attributed to payment for tuition.

Row **G10a** contains data on public grants to households that are attributable to educational institutions. This includes grants for payment of tuition fees and other fees to educational institutions. Row **G10b** contains data on public grants to households that are ***not*** attributable to educational institutions.

Many grants are clearly attributable to payment for tuition. Other subsidies can be clearly identified as expenditure other than on educational institutions. These are :

- Specific subsidies in cash and kind; and
- All subsidies to students not obliged to pay for tuition.

In the case for many other subsidies, the distinction is less clear. In that of subsidies for general purposes, the ideal (but probably impossible) breakdown attribution would be by destination of payment at the household level.

✎ Suppose that a country has 1,000,000 tertiary students, each of whom must pay a tuition fee of GBP 1,000 to his or her tertiary institution. Suppose that of the 1,000,000 students, 200,000 receive grants (say, on the basis of low family income), amounting to GBP 2,500 per student. We can say that of the total volumne of grants of GBP 500 million (200,000 x 2,500), GBP 200 million is accounted for by required tuition payments (200,000 x 1,000). This amount should be shown in row G10a. The remaining GBP 300 million in financial aid is available for payments other than to educational institutions, such as to purchase books, supplies and other personal items used in education for housing, meals, and other living costs. This amount should be reported as subsidised expenditure outside institutions, mainly on student living expenses, in row G10b.

6.2.2.4.2 Student Loans

Public loans to students and/or households should be reported in rows C11, R11, L11 or G11, depending on which level of government provides them.

Expenditure on student loans should be reported on a gross basis -- that is, without subtracting or netting out repayments or interest payments from the borrowers (students or households).

The reason is that the gross amount of loans including scholarships and grants, is the relevant variable for the measuring of financial aid to current participants in education. Although interest payments and repayments of the principal by the borrowers would have to be taken into account in order to assess the net cost of student loans to public and private lenders, such payments are not usually made by current students but rather by former students. (In most countries, moreover, loan repayments do not flow to the education authorities, and thus the money is not available to them to cover other educational expenditure.)

Given that, no internationally comparable method is currently available for the calculation of the net costs of student loan programmes, loans need to be treated according to the likely use of the data. The OECD indicator will take the full amount of scholarships and loans (gross) into account, when discussing financial aid to current students. However indicators on the share of public and private funds on educational institutions will in the future take only scholarships into account, when netting out public subsidies from private expenditure. Here, it will be assumed, that over the long run, loans will be repaid, so that expenditure on educational institutions paid for by loans will be counted as household expenditure, although the expenditure occur to households and students only in the future.

Note that student loans provided by private financial institutions (rather than directly by a government) should not be included, even if these loans are subsidised or guaranteed by the government. They should instead be reported as loans from other private entities to students (row E11). A government subsidy to a private lender should be reported as a government transfer payment to other private entities (rows C13, R13, L13, and G13). The same applies to government payments to compensate for defaults under programmes of government-guaranteed private loans.

6.2.2.4.3 Transfer and payments to other private entities

Government transfers and certain other payments (mainly subsidies) to other private entities (commercial companies and non-profit organisations) should be reported in rows C13,

R13, and L13. These transfers and payments can take diverse forms -- for example, transfers to business or labour associations that provide adult education; subsidies to companies or labour organisations (or associations of such entities) that operate apprenticeship programmes; and, as already mentioned, interest rate subsidies or defaults guarantee payments to private financial institutions that provide student loans.

Before payments are classified as transfers to other private entities, it needs to be determined whether the receiving entities should be classified as educational institutions. (See section 6.1.3) For example, non-profit organisations that provide student housing or student meals are most likely to be classified as non-instructional educational institutions and transfer to them consequently as direct expenditure on government-dependent or independent private educational institutions. Direct government payments to or for educational institutions should not be reported under this heading.

✎ For example, if central government pays the salaries of teachers employed in private schools, or provides subsidies to private schools to help to pay teachers' salaries, the salary payments or subsidies should be reported as direct government expenditure on private educational institutions (i.e., in rows C2, C3, R2, R3, etc.), and not as transfers or payments to other private entities.

Similarly, government purchases of services from private companies or non-profit organisations should be reported as direct government expenditure on private institutions.

✎ Examples of expenditure on such services include government payments for research or evaluation performed by private research organisations, payments to private organisations that develop or administer examinations, and fees paid to private financial institutions that operate student loan programmes.

Public subsidies to other private entities for the provision of training at the workplace in combined school and work-based programmes

Public subsidies to other private entities for the provision of training at the workplace should be reported as public subsides to other private entities in rows C13, R13 and L13. Consequently they should be included in rows E3 and E5a as spending by other private entities (see section 6.2.4.3.1). Only if the public subsidies for expenditure at the workplace are known, will it need to be considered whether the amount of the public subsidies can be reported as a proxy for total expenditure by private entities on the training of apprentices. There is no clear-cut rule whether public subsidies to private entities for expenditure at the work-place whould be classified as direct expenditure on independent private institutions (G3), or as subsides to other private entities (G13) and as expenditure (E3). However, for reasons of consistency between countries and to enable clear separation of expenditure at the workplace (based on row E5a), it is recommended that all public payments for expenditure at the workplace be reported as subsidies in G13 and as expenditure in E3 and E5a.

6.2.2.5 TOTAL EXPENDITURE BY LEVEL OF GOVERNMENT AND FOR ALL LEVELS OF GOVERNMENT COMBINED

Total educational expenditure by central government, regional governments, and local governments should be reported in rows C20, R20, and L20, respectively. Note that these totals are gross expenditure figures, which include intergovernmental transfers and other transfer payments and subsidies. They do not represent either the initial expenditure or the final expenditure of the government in question, and cannot be summed without first netting out duplication through intergovernmental transactions.

Consolidated educational expenditure by the public sector (all levels of education combined) is calculated in rows G1 to G20. All entries on these rows are calculated values, based on data reported in parts C, R and L. No expenditure should be included in these totals that has not also been included in expenditure by individual levels of government. (Missing data codes should be entered in Sections C, R and L in cases where it is not possible to disaggregate fully by level of government.) Rows G1 to G5 summarise direct public expenditure on education by service provider. Rows G10 to G14 summarise public transfers and other payments to students and to

other private entities. The combined total of direct public expenditure on educational institutions and public transfers and payments to the private sector appears in row G20. Note that intergovernmental transfers do not appear in part G of the table because all such transfers are internal to the public sector and are netted out when total public-sector spending on education is calculated.

For **WEI participating countries**, a WEI-specific row (A1) collects Total public expenditure defined as the total public sector expenditure for all purposes (all levels of government combined).

Different from PPP and GDP, international sources are not available for public expenditure. Therefore, the comparability of the nationally provided figures may be a problem, and it is crucial, that data providers work in close co-operation with the national accounts to ensure that the figure provided matches the following definition.

Total public expenditure is defined as current as well as capital expenditure of **all** levels of government. Total public expenditure includes the following items:

- *Final consumption expenditure of government services*: The value of goods and services produced for their own use on current account, i.e. the value of their gross output less the value of their commodity and non-commodity sales and the value of their own-account capital formation which is not segregated as an industry. The value of their gross output is equal to the sum of the value of their intermediate consumption of goods and services (including indirect taxes paid), compensation of employees, and consumption of fixed capital (i.e. its depreciation due to normal wear and tear and to foreseen obsolescence).

  Note that military expenditure, even though partly spent on durable goods, is also considered as final consumption expenditure since it is not covered by the item "gross fixed capital formation" (see below).

- *Property income paid*: interest, net land rent and royalties paid

- *Subsidies*

- *Other current transfers paid*: net casualty insurance premiums, social security benefits, social assistance grants, unfunded employee pension and welfare benefits (paid directly to former or present employees without having special funds, reserves or insurance for this purpose), current transfers to private non-profit institutions serving households, current transfers to the rest of the world, other current transfers

- *Increase in stocks*: Change in stocks of materials, supplies, merchandise, work-in progress (except on construction projects), finished products, livestock raised for slaughter, and in stocks of strategic materials and emergency stocks of important products held by government services. This change is valued, in principle at the market price prevailing when the physical change occurs. In practice, the closest feasible approximation may be the difference between the levels of these stocks at the beginning and the end of the period of account, both valued at approximate average prices ruling over the period, perhaps valuing commodities processed internally at explicit costs.

- *Gross fixed capital formation*: The outlays of government services on additions of new durable goods to their stock of fixed assets less their net sales of similar second-hand and scrapped goods. Fixed assets are durable goods (except land, mineral deposits, timber tracts and similar non-reproducible tangible assets) employed in production, including owner-occupied dwellings and permanent family dwellings for military personnel. Excluded are the outlays of government services on durable goods for military use. Included are acquisitions of reproducible and non-reproducible durable goods (except land, mineral deposits, timber tracts

and the like), for civilian use; outlays on the improvement of land and on the development and extension of timber tracts, plantations, vineyards, etc. which take considerably more than one year to become productive; the acquisition of breeding stock, draught animals, dairy cattle and the like; and the transfer costs in connection with purchases and sales of land, mineral deposits, timber tracts, etc.

- *Purchases of land, net*
- *Purchases of intangible assets, net*
- *Net capital transfers paid:* capital transfers to the resident private sector and to the rest of the world minus capital transfers received from the resident private sector and the rest of the world.

Note that government lending is not included in this definition of total public expenditure. Concerning military expenditure, it might not always be clear whether specific items belong to "final consumption expenditure" (which should cover the bulk of military expenditure) or to "gross fixed capital formation" (covering family dwellings of military personnel and, possibly, some dual-use goods). For comparable statistics on total public expenditure, the distinction is not so important, but it should be made sure that all military expenditure is included somewhere.

6.2.3 FUNDS FROM INTERNATIONAL AGENCIES AND OTHER FOREIGN SOURCES

The UOE data collection distinguishes between two types of funds from international organisations: funds from international sources paid to governments and international funds paid directly to educational institutions.

International funds consist of funds from public multilateral organisations for development aid to education. These organisations include multilateral development banks (the World Bank and regional development banks), the United Nations agencies and other intergovernmental organisations, bilateral development co-operation government agencies and international NGO agencies established in the receiving country. International funds also include other foreign grants for R&D at tertiary institutions.

Note that the UOE tables on finance include all expenditure in the year of reference, regardless of whether the expenditure was financed from current revenue or by borrowing (See section 6.1.4.8). Consequently, educational expenditure based on loans from intergovernmental organisations, such as World Bank loans, should be fully included as funds from intergovernmental organisations. On the other hand, repayments to international organisations should not be included. They should only be reported in the supplementary table, FINANCESUP-2, providing data on debt servicing.

Direct foreign payments to public, government-dependent private, and independent private institutions, respectively, should be reported in rows F1, F2 and F3. Rows F4 and F5 are provided for sub-totals of direct expenditure on private or all educational institutions.

➘ For example, a research grant from a foreign corporation to a public university should be reported in row F1.

Rows F6, F7, and F8 should be used to report transfers of funds from international sources to central, regional, and local governments respectively. Row F9 includes the total of all transfers to governments. It should be noted that transfers of funds from international sources to governments are not automatically included in the total of expenditure on educational institutions. Like all transfer payments reported in UOE, payments need to be reported as expenditure at the

level of the recipient of the funds, i.e. in sections C, R, L or G. All totals in the UOE data collections are calculated in such a way, that funds are only taken into account once. If transfers are not reported again as expenditure, they will not be included in the totals and the total expenditure will be underestimated.

✎ For example, a transfer of education funds from the European Union to a provincial authority should be reported in row F7. The funds received are used by the provincial authority to pay for special programmes at public schools. This expenditure needs to be included as direct expenditure on educational institutions by regional government in row R1.

Total funds from international sources (the sum of rows F5 and F9) should be reported in row F20.

6.2.4 PRIVATE SOURCES

6.2.4.1 DEFINITION OF PRIVATE SOURCES

The tables recognise two private sources of education funds: households and other private entities. “Households” means students and their families. “Other private entities” includes private businesses and non-profit organisations, including religious organisations, charitable organisations, and business and labour associations. It also includes expenditure by private companies on the work-based element of school and work-based training of apprentices and students. (see section 6.1.4.5)

Private educational institutions are regarded as service providers, not funding sources. All the funds available to these institutions are regarded as coming from the public, private or international funding sources already identified.

✎ For example, if a private university earns interest on its investments or obtains rental income by leasing buildings or land, the interest receipts or rental payments should be classified as funds from “other private entities.”

6.2.4.2 HOUSEHOLD EXPENDITURE

6.2.4.2.1 Payments to educational institutions

In most countries, fees paid to educational institutions represent the main form of direct household expenditure on education. These consist of tuition fees and other fees charged for educational services (such as registration fees, laboratory fees, and charges for teaching materials) plus fees paid for lodging, meals, health services, and other welfare services furnished to students by the educational institutions. Table FINANCE-1 provides separate rows (H1, H2 and H3) to report total student and household payments to public institutions, government-dependent private institutions, and independent private institutions respectively. In row H4 (the sub-total for the two types of private institutions), countries that have no separate data for government-dependent and independent private institutions may enter figures for both types of private institutions combined. Row H5 is simply the total of rows H1, H2 and H3 or, equivalently, H1 plus H4.

Payments from students and households to institutions should be reported as net amounts -- that is, after subtracting any scholarships or other forms of financial aid (such as reductions in tuition fees or waivers of fees) provided to students by the educational institutions themselves.

✎ For example, if the normal university tuition fee is USD 2,000 per student but some students are offered free tuition or charged only USD 1,000, the figures entered in rows H1 to H5 should reflect the reduced amounts actually paid by students, not the hypothetical full tuition fees.

Note, however, that this provision to net out financial aid only concerns financial aid originating from the institutions themselves. Scholarships and other financial aid to students from governments or other private entities should not be netted out, even if such aid is administered by, or passed through, the institutions.

In some instances, students enrolled in public educational institutions (or their families) are required to pay tuition fees, but the payments are made to regional or local governments rather than directly to the institutions.

✎ For example, a student attending a municipally operated upper secondary school may be required to pay a fee to the municipality.

For the purposes of this data collection, such payments should be reported under student/household payments to public educational institutions even though the payment is actually made to the responsible unit of government rather than to the individual institution. Moreover, in order to avoid double counting of such payments, the tuition fees received by governments should not be counted as part of government expenditure on the institutions in question. In the example given above, the tuition fee paid by an upper secondary student to the municipality should be counted only as student/household tuition fee paid to a public institution. It should not also be counted as part of the municipality's expenditure on upper secondary schools.

Fees for ancillary services

The UOE data collection instrument on educational expenditure is designed to measure the total volume of expenditure on and by educational institutions. Since ancillary services, such as housing, meals and transportation, are included in this data collection (➚see section 6.1.4.3), all sources of funds for services need to be taken into account.

However, in the case of several indicators, the inclusion of private fees for ancillary services introduces problems of comparability between countries, and leads to results that are commonly misinterpreted. Many ancillary services are student welfare services aimed at helping students and households with student living costs and related costs, such as meals and transportation. Although expenditure on student living costs occurs part within educational institutions in some countries, that does not mean that similar expenditure does not occur outside institutions in other countries. A comparison of private expenditure on educational institutions would be adversely affected by the inclusion of living costs that households would pay in any case.

A special row is introduced in the table FINANCE-1. Private fees on ancillary services, already included in rows H1 to H5, should be reported separately in row H5b. It should be noted that although fees for ancillary services are now reported separately, it is still desirable to include them in rows H1 to H5. Similar rows on ancillary services by source of funds are provided for the public sector (G5b) and for other private entities (E5b).

The purpose of collecting separate data on expenditure for ancillary services and its sources is, first, to determine what each country has included and, second, to permit international comparisons of education spending net of ancillary services outlays.

It is recognised, that some countries lack data on the full cost of ancillary services and may be able to report only the publicly subsidised portion (if any) of expenditure on ancillary services, or expenditure net of student fees. Some other countries cannot separate fees for ancillary services from other private expenditure and report gross expenditure. Countries MUST indicate the in/exclusion of private fees in the row H1 to H5 and in the categories provided in the table FINANCE-2 by using the appropriate missing codes. The following cases can occur:

- All expenditure on ancillary services is included in the UOE reporting on educational institutions, but the sources of funds, i.e. public and other private entities funds and fees by students, cannot be separated. In this case the row H5b must be coded to "xr:G5b" if private fees on ancillary services are included in public expenditure on ancillary services.

- All, public and private, expenditure on ancillary services is included in X20 but can not be separated from other expenditure. In this case row H5b needs to be coded to "xr:H5".

- Expenditure on ancillary services is not known, and thus excluded from X20. In this case rows H5b, G5b and E5b need to be coded to "m".

- Public and other private entities' funds on ancillary services are known and included in G5 and E5, but household fees are excluded. In this case row H5b need to be coded to "m", rows G5b and E5b should be completed with the amount of public and other private entities funds.

6.2.4.2.2 Payments on educational goods and services purchased outside educational institutions

Rows H15 to H18 report expenditure on educational goods and services purchased by households and students outside educational institutions, in the free market. ➶ For the definition of such payments see section 6.1.5.

It is understood that many countries do not have the detailed student or household survey data needed to quantify these direct purchases and thus may be compelled to enter the symbol for "not available" in row H15 to H18. Some may have data for certain levels of education but not for other levels. However, countries should include estimates of spending on direct purchases if there is a reasonable basis for doing so.

Note that double counting must be avoided. Amounts reported in rows H1, H2 and H3 as fees paid to educational institutions -- e.g. for laboratory use or teaching materials, -- should not be reported again in rows H16 or H17.

6.2.4.2.3 Total household expenditure

Total household payments to educational institutions are shown in row H5. Total household expenditure other than on educational institutions is shown in row H18. Total educational expenditure by households (the sum of row H5 and row H18) should be entered in row H20.

6.2.4.3 EXPENDITURE OF OTHER PRIVATE ENTITIES

The table allows for two types of expenditure by other private entities: direct payments to educational institutions and financial aid to students or households.

➶ A definition of other private entities is given in section 6.2.4.1.

6.2.4.3.1 Direct expenditure on educational institutions

Direct payments by other private entities to educational institutions include such things as :

- Contributions or subsidies to vocational and technical schools by business or labour organisations;

- Payments by private companies to universities under contracts for research, training, or other services;

- Grants to educational institutions from non-profit organisations, such as private foundations;
- Charitable donations to educational institutions (other than from households);
- Rents paid by private organisations; and earnings from private endowment funds; and
- Expenditure by private employers on the training of apprentices and other participants in mixed school- and work-based educational programmes (➚for special instructions see below and section 6.1.4.5).

Payments by other private entities to public institutions, government-dependent private institutions, and independent private institutions should be reported in rows E1, E2 and E3, respectively. Row E4 is the sub-total of rows E2 and E3 but may also be used by countries that do not have separate data for government-dependent and independent private institutions to report expenditure on both combined. Row E5 is the total for all three types of educational institutions combined.

Private educational expenditure at the workplace for the training of participants in combined school and work-based training programmes

As already noted in section 6.1.4.5, expenditure by businesses to provide the work-based element of combined school-and-work-based educational programmes which fall within the scope of the UOE (3.5) data collection should be included. It should be regarded as expenditure by other private entities on independent private schools, and hence reported in row E3.

Because of the scale of expenditure of private companies in some countries on the work-based element of school and work-based training of apprentices and students, a special row (E5a) has been added to table FINANCE-1 to distinguish this expenditure from other expenditure of private entities other than households.

Public subsidies to other private entities for the provision of training at the workplace should be reported as public subsides to other private entities in rows C13, R13 and L13. Consequently, they should be included in rows E3 and E5a as spending by other private entities. Only if the public subsidies for expenditure at the workplace are known, need it be considered whether the amount of public subsidies can be reported as a proxy for the total expenditure by private entities on the training of apprentices. (➚ see section 6.2.2.4.3)

6.2.4.3.2 Financial aid to students

Scholarships and other grants provided to students by other private entities should be reported in row E10. These include scholarships provided by businesses and religious or other non-profit organisations. Student loans from banks and other private lenders should be reported in row E11. Loans from private institutions to students should be reported in row E11 even if such loans are guaranteed or subsidised by government, or made through programmes of private lending organised by the government. Like the government loans discussed earlier (➚ see section 6.2.2.4.2), private loans should be reported as gross amounts, without the subtraction of payments of interest or repayments of the principal by the borrowers. Total private financial aid to students (scholarships plus loans) should be reported in row E12.

Public subsidies related to private loans that are guaranteed or subsidised by the government, or made through programmes of private lending organised by the government, should be reported as public subsidies to other private entities in row G13. (➚ see section 6.2.2.4.3)

6.2.4.3.3 Total expenditure of other private entities

Total payments by other private entities to educational institutions are shown in row E5. Total financial aid from other private entities to students or households is shown in row E12. Total educational expenditure by other private entities (the sum of rows E5 and E12) should be entered in row E20.

6.2.5 TOTAL PRIVATE EXPENDITURE AND COMBINED PUBLIC, PRIVATE, AND INTERNATIONAL EXPENDITURE

6.2.5.1 TOTAL PRIVATE EXPENDITURE

Total expenditure by the private sector, consisting of expenditure by students and households and expenditure by other private entities, should be reported in part P of the table. Rows P1, P2 and P3 (payments to educational institutions) are the sums of payments to institutions reported in parts H and E of the table (e.g. P1 = H1 + E1). P4 is the sub-total of P2 and P3. P5, the sum of P1, P2 and P3, or equivalently, P1 + P4, gives the total of private-sector payments to all three types of educational institutions.

Household payments other than to educational institutions (H18) represent the only other element of total private expenditure. Total private education expenditure, row P20, is the sum of P5 and H18. Note that private expenditure on financial aid to students does not appear in Part P because such financial aid is internal to the private sector and has been netted out in calculating total private spending.

6.2.5.2 COMBINED PUBLIC, PRIVATE, AND INTERNATIONAL EXPENDITURE

Total educational expenditure from all sources -- public, private, and international -- should be reported in part N of the table. Rows N1, N2 and N3, expenditure on educational institutions, are the sums of payments to institutions reported in parts G, F and P of the table.

✎ For example, N1 = G1 + F1 + P1. N4 is the sub-total of N2 and N3. N5, the sum of N1, N2 and N3 or equivalently, N1 + N4, is total expenditure on all types of educational institutions from all funding sources combined.

The only other element of total educational spending is household payments other than to educational institutions (H18). Total educational expenditure, row N20, is the sum of N5 and H18.

Note that the total expenditure shown for public, government-dependent private, and independent private educational institutions in rows N1, N2, and N3 of table FINANCE-1 should correspond, to the totals shown in table FINANCE-2. (see section 6.3.5)

6.3 RESOURCE CATEGORIES FOR EXPENDITURE ON EDUCATIONAL INSTITUTIONS: THE EXPENDITURE CATEGORIES OF TABLE FINANCE-2

Table FINANCE-2 is headed “Education expenditure by nature, resource category, and level of education”. Its function is to obtain the data needed to construct indicators of the cost of education (total and per student) and the composition of educational expenditure by nature and type of resource, disaggregated by both level of education and service provider.

This table has separate, identically structured sections to report expenditure by public institutions, government-dependent private institutions, and independent private institutions. For the classification of types of institutions see 4.7.1 and 4.7.2. These expenditure figures are intended to represent the total cost of services provided by each type of institution, *without regard to sources of funds (whether they are public or private).*

In table FINANCE-2, expenditure is classified into current and capital expenditure. Current expenditure is then broken down, into expenditure on compensation of personnel, and expenditure on other (non-personnel) resources. Separate sections provide rows for identification of any expenditure on ancillary services (➚ see sections 6.1.4.3, 6.3.7) included in current and capital spending, in order to allow for the calculation of net expenditure per student.

6.3.1 EXPENDITURE BY OR ON PUBLIC AND PRIVATE INSTITUTIONS

Table FINANCE-2 consists of three identically structured parts, each corresponding to one of the three previously defined types of educational institutions. Expenditure by or on,

- public institutions should be reported in part X;
- government-dependent private institutions should be reported in part Y; and
- independent private institutions should be reported in part Z.

We use the expression "expenditure by or on, ….. institutions" to make clear that countries should include both expenditure by the institutions themselves (e.g. salaries paid by a fiscally autonomous university) and expenditure by governments on, or on behalf of, the institutions (e.g. salaries paid by a national education ministry directly to the individual teachers employed in public or private schools).

Although table FINANCE-2 is designed to obtain data concerning all three types of educational institution, it is recognised that not all countries can supply complete expenditure figures for their private institutions. A country unable to provide expenditure figures for either its government-dependent or independent private institutions, for some or all ISCED levels, should indicate this by inserting appropriate missing data codes in the relevant columns of parts Y and Z. It is important, in doing so, to distinguish carefully between the missing data code for "data applicable but not available" and the code for "data not applicable". The latter should be used where there are no private institutions of the specified type at the specified level of education. A country that has data for private institutions but is unable to separate expenditure by government-dependent and independent private institutions should indicate this by inserting appropriate missing data codes.

✎ For example, if data are available for government-dependent and independent tertiary institutions combined but not for the two types of institution separately, the country should (a) report the combined figures in the tertiary column of part Y and (b) insert codes in the tertiary column of part Z to indicate that the items in question are included in the entries in part Y (➚see the instructions on missing data codes in the User's Guide for the UOE Electronic Questionnaire).

Countries should carefully review whether the expenditure on the different types of private institution is complete. If large portions of the budgets of the relevant institutions are missing, the whole section should be reported as missing rather than with understated figures. A country able to provide the public portion of budgets of private institutions, broken down by the categories of table FINANCE-2, but which cannot include the portion of those budgets based on private payments, e.g. tuition fees, needs to decide whether the excluded part of the budget can be ignored. If private expenditure amounts to a substantial part of the budget (e.g. 15% or more), the expenditure of the relevant group of institutions should rather be reported as missing.

✎ For example, a country has data on public payments to government- dependent institutions, but no data on the amount of tuition fees paid to them and there is some evidence that tuition fees amount to more than 15% of the budget. In this case, data for rows Y1 to Y30 should be shown as missing (m-code). Public expenditure should nevertheless be reported in table FINANCE-1 in rows L1, R1 and C1.

6.3.2 EXPENDITURE ON COMPENSATION OF PERSONNEL

Expenditure on compensation of personnel includes gross salaries plus expenditure on retirement and on other non-salary compensation (fringe benefits) (➚see section 6.3.2.2).

Table FINANCE-2 classifies expenditure on compensation of personnel in two ways. First, such expenditure is disaggregated by type of personnel, as described in section 6.3.2.1. Second, total expenditure on compensation of personnel (all types of personnel combined) is disaggregated by type of compensation, as described in section 6.3.2.2.

6.3.2.1 CATEGORIES OF EDUCATIONAL PERSONNEL

Table FINANCE-2 recognises two categories of educational personnel: teachers, and non-teaching staff.

The "teachers" category includes only personnel who participate directly in the instruction of students. Under expenditure for on compensation of teachers, (rows X1, Y1 and Z1), countries should report the full compensation of full-time teachers plus appropriate portions of the compensation of staff who teach part-time.

➘ For example, if the headteachers or principals of a country's primary schools teach for a quarter of their time, on average, and perform administrative functions for the other three quarters of their time, only one quarter of headteachers' compensation should be included in compensation of teachers. The remaining three quarters should be included in compensation of other educational, administrative and professional personnel.

In addition to headteachers and other administrators of schools, non-teaching staff includes supervisors, counsellors, school psychologists, school health personnel, librarians or educational media specialists, curriculum developers, inspectors, educational administrators at the local, regional, and national level, clerical personnel, building operations and maintenance staff, security personnel, transportation workers, food service workers, etc. The exact list of occupations included in this category will vary from one country to another.

Expenditure on compensation of the two categories of personnel should be reported in rows X1 and X5 respectively, and on the corresponding rows of parts Y and Z of the table.

6.3.2.2 BREAKDOWN OF EXPENDITURE ON COMPENSATION OF PERSONNEL

Total expenditure on compensation of personnel, shown in rows X6 and Y6 should be broken down by type of compensation as follows: salaries (rows X7 and Y7), expenditure for retirement, or pensions (rows X8 and Y8), and other non-salary compensation (row X9 and Y9).

Salaries means the gross salaries of educational personnel, before deduction of taxes, contributions for retirement or health care plans, and other contributions or premiums for social insurance or other purposes.

Expenditure on retirement (pension schemes) means actual or imputed expenditure by employers or third parties to finance retirement benefits for current educational personnel. This expenditure does not include pension contributions made by the employees themselves, or deducted from their gross salaries. The reference to third parties is included to cover situations in which costs of retirement are not borne by the education authorities directly but rather by other public authorities, such as social security or pension agencies or finance ministries. These amounts should be measured as specified above (➚ see section 6.1.4.7).

Expenditure on other non-salary compensation includes spending by employers or third parties on employee benefits other than pensions. These benefits may include such things as health care or health insurance, disability insurance, unemployment compensation, maternity and childcare benefits, other forms of social insurance, non-cash supplements (e.g. free or subsidised

housing), free or subsidised child care, and so forth. The list of employee benefits varies from country to country, and often between sectors or categories of personnel within the same country.

The breakdown of compensation of personnel into salaries and non-salary components is not requested for independent private institutions as it has not been possible to obtain these data for a significant number of countries. The underestimation of non-salary compensation, especially in countries where no reliable estimates exist for future pension liabilities of current expenditure, remains a significant potential bias in comparisons of expenditure data.

6.3.3 CURRENT EXPENDITURE OTHER THAN COMPENSATION OF PERSONNEL

All expenditure on goods and services used in education other than compensation of educational personnel should be reported in row X13. The following expenditure should be included.

Expenditure on contracted and purchased services is expenditure on services obtained from outside providers, as opposed to services produced by the education authorities or educational institutions themselves using their own personnel. The services most commonly obtained under contracts are support services, such as maintenance of school buildings, and ancillary services, such as preparation of meals for students. Rents paid for school buildings and other facilities should also be included in this category. In a few rare cases, the educational authorities may even contract out teaching services by engaging a private company to operate certain schools. The providers of contracted services may be private companies or public agencies.

✎ An example of services under contracts is a private company that cleans school buildings.

✎ An example of rent payments is when a general public building authority that constructs school buildings and leases them to the education authorities.

Expenditure on other resources covers the purchases of other resources used in education, such as teaching and learning materials, other materials and supplies, items of equipment not classified as capital, fuel, electricity, telecommunications, travel expenses, and insurance.

Educational institutions' aid to students

In the instructions for table FINANCE-1, countries are asked to subtract such aid from tuition and other fees paid by students and households to educational institutions and to report only the resulting net amounts as payments to educational institutions (➚ see section 6.2.4.2.1). In the event that such financial aid exceeds household payments to institutions, however, the resulting **net subsidy component of financial aid to students** should be shown here as an element of institutional expenditure. Note that this refers only to aid provided by institutions from their own funds, not to scholarships and other aid from governments or other private entities.

Required payments other than expenditure on educational resources. ✎ For example, the property taxes that educational institutions are required to pay in some countries should be reported here.

6.3.4 CAPITAL EXPENDITURE

The distinction between current and capital expenditure is the standard one used in national income accounting. Current expenditure is expenditure on goods and services consumed within the current year, i.e., expenditure that needs to be made recurrently in order to sustain the production of educational services. Capital expenditure is expenditure on assets that last longer than one year. It includes spending on construction, renovation and major repair of buildings and expenditure on new or replacement equipment. (It is understood that most countries report small

outlays for equipment, below a certain cost threshold, as current rather than capital spending.) Total capital expenditure should be reported in row X15.

The capital expenditure reported in this table should represent the value of educational capital assets acquired or created during the year in question -- that is, the amount of capital formation -- regardless of whether the capital expenditure was financed from current revenue or by borrowing. Capital expenditure does not include expenditure on debt servicing. This means that neither interest payments nor repayments of the principal should be counted as part of capital or current spending. (➚ see section 6.1.4.8)

6.3.5 TOTAL CURRENT AND CAPITAL EXPENDITURE

Total current plus capital expenditure (X14 + X15) should be reported in row X20. Similarly, the totals in sections Y and Z should be reported in rows Y20 and Z20.

Note that the introduction of the special rows on adjustments for changes in fund balances (➚ see Section 6.3.6) reflects potential inconsistency between tables FINANCE-1 and FINANCE-2. Unlike earlier editions of UOE tables, the totals in FINANCE-1 and FINANCE-2 for expenditure on educational institutions are now not exactly the same. In the current instruments the tables relate to each other as follows:

Row FINANCE-1 N1 equals row X20 + X21

Row FINANCE-1 N2 equals row Y20 + Y21

Row FINANCE-1 N3 equals row Z20 + Z21.

Row FINANCE-1 N5 equals row A22.

6.3.6 ADJUSTMENTS FOR CHANGES IN FUND BALANCES

The total funds received by educational institutions from all sources may not be precisely equal to total expenditure in the reference period. This is because the institutions have either added to or reduced their fund balances during the period in question.

An increase or reduction in fund balances cannot be attributed to current of capital expenditure. They would distort the distribution of real expenditure and the expenditure per student. Therefore a special row is provided to record adjustments for changes in fund balances, X21. This row accounts for potential differences in funds reported in FINANCE-1 and expenditure by educational institutions reported in FINANCE-2.

An increase in fund balances should be entered in rows X21, Y21 and Z21 as a positive amount and a reduction should be entered as a negative amount.

6.3.7 INSTRUCTIONS FOR SUPPLEMENTAL SECTIONS ON ANCILLARY SERVICES

The current UOE instruments deals with expenditure on ancillary services differently from the previous data collections. The former supplementary table on ancillary services, table FINANCESUP-1, is integrated into tables FINANCE-1 and FINANCE-2, and the information is simplified. The integration of the sections on ancillary services should emphasise the importance of good coverage and comparable data on ancillary services for the calculation of indicators on expenditure per student.

A definition of the coverage of ancillary services is provided above (➚ see section 6.1.4.3). It is important to note that all expenditure on ancillary services as discussed above should be

included in all sections on expenditure by educational institutions in tables FINANCE-1 and FINANCE-2.

Please note, that separate data on ancillary services by source of funds are collected in table FINANCE-1 (G5b, H5b and E5b) and not in table FINANCE-2. (➶ see section 6.2.4.2.1)

6.4 INSTRUCTIONS FOR SUPPLEMENTAL TABLE ON DEBT SERVICES (TABLE FINANCESUP-2)

This section provides instructions for table FINANCESUP-2, the supplementary financial table covering expenditure on educational debt servicing. This type of expenditure is specifically excluded from tables FINANCE-1 and FINANCE-2 (➶ see sections 6.1.4.8). It is not considered part of either current expenditure or capital expenditure. Debt servicing expenditure should only be reported in the supplementary table, FINANCESUP-2, provided for that purpose.

The reasons for seeking information on debt servicing expenditure are (1) to help ensure the comparability of expenditure figures between countries that do and do not rely on debt financing, (2) to permit assessment of the full budgetary impact of the financing of education, and (3) to permit the interest portion of debt servicing expenditure to be counted as part of the economic cost of education.

In principle, debt servicing expenditure could be disaggregated in the same way as current and capital expenditure -- that is, by level of education, type of service provider, and source of funds. In recognition, however, that most countries cannot provide detailed breakdowns, table FINANCESUP-2 calls only for a much more limited breakdown of spending of debt servicing. It is also recognised that some countries cannot report debt servicing outlays for education because such outlays are inseparable from debt servicing expenditure for non-educational purposes. These countries should indicate this in their data submissions.

6.4.1 DEFINITIONS OF EDUCATION DEBT AND DEBT SERVICE EXPENDITURE

The stock of educational debt is the cumulative amount of funds borrowed for educational purposes by educational service providers or funding sources and not yet repaid to the lenders. Such debt is usually incurred to finance capital expenditure but may also be incurred, on occasion, to finance portions of current expenditure. Expenditure on debt servicing consists of (1) payments of interest on the amounts borrowed for educational purposes and (2) repayments of the principal. Table FINANCESUP-2 allows for the separate reporting of these two components.

For the purposes of this data collection, the term educational debt does not include any funds borrowed by students or households (student loans) to help finance students' educational costs or living expenses. No transactions concerning student loans should be reported in table FINANCESUP-2.

6.4.2 BORROWERS AND LENDERS

Depending on how responsibility for financing education is allocated in each country, the entities that borrow funds for education may include service providers, funding sources, or both.

✎ For example, in some countries, individual universities may borrow money to pay for construction of buildings, whereas in other countries funds for that purpose would be borrowed, if at all, by the national or regional ministry responsible for the financing of higher education.

Table FINANCESUP-2 allows for either public authorities or institutions to be the borrowers.

The lenders of funds for education are usually banks or other private financial institutions but may be public-sector lending agencies in some cases. However, table FINANCESUP-2 does not differentiate by type of lender.

6.4.3 DISAGGREGATION BY LEVEL OF EDUCATION

Table FINANCESUP-2 distinguishes between two levels: education below the tertiary level (i.e., pre-primary, primary, secondary and non-tertiary post-secondary education combined) and education at the tertiary level. Countries should report the two components of debt servicing expenditure, interest payments and repayment of principal, for each level in columns (1) to (4). The totals for all levels of education combined should be reported in columns (5) and (6). The latter columns should also be used by countries that can report debt servicing expenditure for all levels of education combined but cannot differentiate between the two levels represented in columns (1) to (4).

6.4.4 DISAGGREGATION BY PAYER

The rows of Table FINANCESUP-2 are used to identify who pays of debt servicing expenditure. Two types of payers are recognised: (1) governments, classified by level, and (2) institutions (service providers), classified by type. Debt servicing expenditure by central, regional and local governments should be reported in rows D1, D2 and D3, respectively, with the total for all levels of government reported in row D4. Debt service expenditure of public institutions, government-dependent private institutions, and independent private institutions should be reported on rows D5, D6 and D7, respectively, with the total for all types of institutions reported on row D8. There should be no duplication or double-counting of expenditure. A given item of expenditure on for debt servicing should be reported either as expenditure by government or as expenditure by a type of institution, but not both.

✎ For example, debt servicing expenditure on account of funds borrowed to construct buildings at a public university should be reported as central government expenditure if a national ministry makes the payments, or as expenditure by public institutions if the university is responsible for making its own payments.

Total debt servicing expenditure by all payers (unduplicated) should be reported on row D9.

Usually, the borrower of funds will also be the payer of the corresponding debt servicing expenditure, but in some cases one entity may make payments on behalf of another. For instance, the national government may cover some portion of the debt servicing obligations incurred by regional or local governments or institutions. In such cases, expenditure should be reported by payer. In the event that one entity provides transfers (subsidies) to another entity to cover debt servicing expenditure, the expenditure should be classified according to the final rather than the initial payer.

6.5 INSTRUCTIONS FOR SUPPLEMENTAL TABLE ON EXPENDITURE FOR RESEARCH AND DEVELOPMENT (TABLE FINANCESUP-3)

This section provides instructions for table FINANCESUP-3, the supplementary table concerning expenditure on Research and Development (R&D) in institutions of tertiary education. The purposes of this table are (1) to help assess the comparability of the statistics on tertiary expenditure, (2) to determine the relationship between the OECD educational expenditure statistics and the statistics on Higher Education R&D (HERD) expenditure collected by the OECD's Directorate for Science, Technology and Industry (DSTI), and (3) to provide the data

needed for comparisons of expenditure on tertiary education net of certain expenditure on research.

6.5.1 DEFINITION OF EXPENDITURE ON RESEARCH AND DEVELOPMENT

For the purposes of this data collection, expenditure on R&D should be defined according to the OECD Frascati Manual. Section 3.7 of the Frascati manual defines the coverage of higher education institutions. Chapter 6 discusses measurement of expenditure devoted to R&D. Both parts of the manual can be found in Annex 1 of this document.

As discussed in section 6.1.4.1, all expenditure on R&D at higher education institutions should be included in the UOE tables. For the overall coverage of the tables, the question of exclusion or inclusion of expenditure on separately funded or separately budgeted research activities causes the biggest comparability problems, since they are deemed in most countries not to be expenditure on education. As a result, data providers tend to exclude them. However, where R&D expenditure is embedded within general university budgets, problems can arise in the separation of expenditure on R&D from total expenditure. This embedded expenditure includes, for example, spending on the compensation of teaching staff who work part of their time on R&D. These elements need to be identified and staff costs need to be broken down for education and R&D activities. The OECD Frascati Manual suggests standard practices for the separation.

UOE data providers from countries that provide data according to the OECD/DSTI methodology should co-operate with the representatives to the relevant data collection (DSTI for OECD countries and Eurostat Research and Development data collection for the Central and Eastern European Countries) to ensure consistency between the two data reports. The name of the representatives to the DSTI can be found in Annex 2.

6.5.2 COVERAGE OF RESEARCH EXPENDITURE

The first two rows of the table are intended to clarify the coverage on expenditure for research in the figures on expenditure on tertiary education presented in tables FINANCE-1 and FINANCE-2.

Row SR1. Enter total expenditure on institutions of tertiary education (all types of institution combined), as reported in row A20, column 9 of table FINANCE-2.

Row SR2. Indicate by marking yes or no in the right-hand column, whether the figure on row 1 includes ALL expenditure on research in institutions of tertiary education. Note that according to section 6.1.4.1, countries should include in tables FINANCE-1 and FINANCE-2 all expenditure on research performed at universities and other institutions of tertiary education, regardless of whether the research is financed from general institutional funds, through separate grants, or from contracts from public or private sponsors. The only exception is that expenditure on independent, organisationally separate, government research institutions should be excluded in cases where the connection between universities and research institutions is purely administrative.

A country should therefore mark “yes” in row 2 if it has included all research spending other than the type specifically mentioned above as an exception. It should mark “no” in row 2 if any other category of research spending has been omitted. A country indicating “no” should itemise the omitted components of research expenditure in the space provided and, if possible, indicate the corresponding amounts of omitted spending in the right-hand column. Estimates should be provided if the exact amounts of omitted research spending are unknown.

6.5.3 SEPARATION OF EXPENDITURE ON R&D

Rows SR3 and SR4 of the table are intended to identify the amount of expenditure on R&D that should be used to report expenditure on R&D separately from total expenditure on educational institutions. If there is full (or almost full) consistency between the UOE and OECD / DSTI data collections, row SR3 should equal row SR5.

Countries which do not attain full consistency, or which do not participate in OECD / DSTI, need to indicate here the amount included in SR1 that is attributable to R&D activities.

Row SR3. Enter total expenditure attributable to R&D. This should include expenditure on separately funded or separately budgeted research as well as those portions of the general university budget attributable to R&D activities.

Row SR4. Indicate by marking yes or no in the right-hand column, whether the figure on row SR3 includes ALL expenditure on research in institutions included in SR1. It is recognised, that the amounts not separable from row SR1 cannot be quantified. However, the types of expenditure should be listed in any case in rows SR4a to SR4f without amounts.

✎ Examples of expenditure related to R&D that cannot be separated may include expenditure on staff time, or portions of capital expenditure, devoted to R&D.

Portions of expenditure on R&D that cannot be separated cause overestimation of expenditure net of R&D, when expenditure per student or expenditure as a percentage of GDP is calculated. Countries that cannot separate significant portions of costs attributable to R&D should report data in row SR3 as missing in order to indicate that a reporting of net costs for the country would be incorrect. However, countries are invited to consider the error introduced by incomplete separation, and to indicate to the OECD whether reporting of net cost might be possible, despite certain exclusions.

6.5.4 RELATIONSHIP TO THE OECD/DSTI STATISTICS

Rows 5, 6, and 7 of the table are intended to clarify the relationship between the research expenditure included in table FINANCE-2 and the Higher Education R&D (HERD) expenditure reported in the OECD / DSTI data collection.

Row 5. Enter total expenditure on Higher Education Research and Development (HERD), as reported in the OECD / DSTI data collection. This amount should be for the same financial year as the educational expenditure reported in table FINANCE-2.

Rows 6 and 7. These rows are intended to clarify any differences between the coverage of research expenditure in the OECD education statistics and the OECD / DSTI statistics.

Indicate by marking yes or no in the right-hand column of row 4, whether the figure for Higher Education R&D (HERD) expenditure on row 3 includes any expenditure that is not also included in the figure for expenditure by tertiary institutions given in row 1. A country should answer “yes” if, for example, the HERD figure includes R&D expenditure by institutions not considered institutions of tertiary education (e.g. hospitals or independent research centres) and therefore not reflected in the statistics in tables FINANCE-1 and FINANCE-2. A country answering “yes” in row 6 should itemise in the space provided the types of R&D expenditure that are included in row 5 but not in row 1. The corresponding expenditure amounts should be shown if possible (estimates, if necessary) in the right-hand column.

Indicate by marking yes or no in the right-hand column of row 7, whether the figure for total expenditure by tertiary institutions in row 1 includes any research expenditure not reflected in the figure for HERD expenditure in row 5. A country should answer “yes” if, for example, it has not taken full account, in its report to DSTI, of the portion of the activities of university teaching staff that might be considered research, rather than teaching. A country answering “yes” on row 7

should itemise in the space provided the types of research expenditure included in row 1 but not in row 5. If possible, it should indicate the corresponding expenditure amounts (estimates, if necessary) in the right-hand column.

6.5.5 EXPENDITURE ON SEPARATELY FUNDED OR SEPARATELY BUDGETED RESEARCH

Row 8. This row is intended to provide information about the portion of the research performed at tertiary institutions that is separately funded or separately budgeted, and hence potentially separable from other institutional expenditure. Enter the amount of separately funded or separately budgeted research expenditure included in total expenditure by tertiary institutions (row 1). Research expenditure is considered separately funded if the funds derive from (1) explicit research contracts or grants from public or private research sponsors or (2) specifically designated research portions of the funds provided to tertiary institutions by public education authorities. In addition, some research that is supported out of general university funds (hence not separately funded) may qualify as separately budgeted research if funding is specifically allocated to organised research activities (institutes, research centres, projects, etc.) in institutional budgets.

Chapter 2

Instructions concerning the implementation of ISCED-97 in the UOE Data Collection and current ISCED-97 mapping

7. INTRODUCTION

As the structure of educational systems varies widely between countries, a framework to collect and report data on educational programmes with a similar level of educational content is a clear prerequisite for the production of internationally comparable education statistics and indicators.

In 1997, a revised International Standard Classification of Education (ISCED-97) was adopted by the UNESCO General Conference. This multi-dimensional framework has the potential to improve the comparability of education statistics, as data collected under this framework will allow for the comparison of educational programmes with similar levels of educational content and will ensure that complex educational pathways be better reflected in the UOE indicators.

To that purpose however, ***it is crucial that the ISCED mappings of national educational programmes be documented*** accurately. This is the reason why the international organisations decided, after consulting their Member countries, to include a regular update of national ISCED mappings into the UOE Data Collection. This is now done through the ***implementation of a new questionnaire: ISCMAP.XLS***.

Consequently, this Chapter has a double focus. It first provides practical guidelines on the completion and documentation of the ISCMAP table. In addition, it also provides a clear guidance to UOE data providers on the implementation of the ISCED-97 framework in the UOE data collection.

The first section of this Chapter thus presents the ISCMAP table and provides instructions on its completion. Then, the following sections summarise the coverage and structure of ISCED-97, as well as the defining characteristics of the ISCED-97 levels and cross-classification categories, with an emphasis on the criteria that define the boundaries between educational levels. The methodology for ISCED-97 application to national contexts that is described here has been developed and agreed upon by the OECD/INES Technical Group. OECD, EUROSTAT and the UNESCO Institute for Statistics have worked closely together to ensure that ISCED-97 is implemented in a uniform manner across all countries. A qualitative description of selected programmes in OECD Member countries that meet specific classification criteria is also presented as example of how the criteria can be properly applied.

8. REGULAR UPDATE OF THE NATIONAL ISCED MAPPINGS WITH THE UOE QUESTIONNAIRE

8.1 THE ISCMAP TABLE

8.1.1 OVERVIEW

In 1999 OECD member countries invested great efforts to establish initial mappings of their national educational programmes to ISCED-97. The mappings were published in *Classifying Educational Programmes: Manual for ISCED-97 Implementation in OECD Countries* (OECD, Paris 2000). Countries participating in the UIS/OECD World Education Indicators Project provided initial mappings of programmes to ISCED in *Investing in Education: Analysis of the 1999 World Education Indicators* (OECD, Paris 2000). Countries participating in the EU PHARE project for Central and Eastern European countries have provided initial mappings as a part of their training in the UOE data collection in 1998, which have been published in the Eurostat / European Training Foundation report *Education and indicators in the PHARE countries: 1996/97* (ETF, Torino 1999).

Making the mapping of countries transparent to data providers and users of UOE data proved to be one of the most important steps in implementing ISCED-97. But educational systems and their programmes are not static. Therefore, it is crucial, that ISCED remain a flexible tool to classify programmes, and that changes in educational systems be mirrored in the ISCED mapping of countries, and, equally important, that those changes remain transparent to other countries. The ISCED mapping needs to be kept up to date every year and therefore, a new questionnaire, ISCMAP.XLS, is now part of the regular UOE data collection. It documents the ***ISCED-97 mapping*** of national educational programmes and is not limited only to programmes reported in the UOE data collection. Data providers are requested to include also programmes that are considered part of their educational systems from a national perspective, but are not included in the international UOE data collection. The inclusion of these borderline cases will help us reach a transparency on the relationship between the ISCED mappings and the reporting of programmes in the UOE data collection in order to improve, among other things, the transparency of the coverage of the UOE data collection.

Some countries may have never provided the international organisations with any mapping of their national educational programmes. In such case, great care should be given in documenting this aspect because the ***documentation of data provided*** is an ***integral part of the data collection***. Those countries should carefully review the existing ISCED mappings of other countries in order to locate their programmes in a comparable way. The ISCED mappings of all countries are included not only to give countries orientation, but also to foster discussions amongst countries concerning the mappings. Countries that map their programmes for the first time and compare themselves to similar programmes of other countries are invited to discuss with their colleagues in other countries the implementation of ISCED, and reach a common sense about how similar programmes should be classified.

Countries that already provided mappings in previous years should update the available ISCED mappings regularly under the light of the procedures used for the completion of the UOE tables. It is indeed crucial, that the mappings reflect properly each year's data collection.

[7] This mapping will also be used as a bridge by Eurostat between UOE and the EU VET (Vocational Education and Training) data collection of statistical and qualitative information on initial VET in Europe.

The file ISCMAP table consists in:

- The current ISCED mapping available to the international organisations for those countries that provided this information in the past. It should be updated if the need arises.
- A blank table to complete for those countries that never provided any mapping.

8.1.2 INSTRUCTIONS FOR THE COMPLETION OF THE TABLE

The ISCMAP table ***should be filled whether or not changes have occurred*** since the last data collection. All new fields that need to be filled in all cases are colour-marked (in light blue).

The following procedures should be followed in order to complete it :

- The current mapping should be checked for needs to update in accordance with the ISCED-97 classification (see sections 2 through 19 for the implementation of ISCED-97).
- The coverage for the current UOE data collection should be reviewed and for each programme, it should report whether the programme is included in the UOE data collection. Ideally the number of students of the programme under scrutiny should be reported in the column “enrolment”, independent of whether the programme is reported in the UOE or not.
- A new column asks for programmes especially designed for continuing education. It should be documented for all existing programmes. For this purpose, national definitions of continuing education should be used and, if possible, provided in the comments column.

Please note that what is important is to know both the theoretical classification of programmes available in each country, but also the way these were operationally implemented in the UOE / WEI data collection.

For instance, if a country distinguishes between programmes at ISCED 3A and 4A levels accordingly with the ISCED criteria, but was not able to distinguish between the two for the provision of data, then the ISCED mapping should present the 2 programmes separately, and the comments column should document that point.

8.1.3 FIELDS TO BE DOCUMENTED

The fields to be documented are the following:

- *Updated programme*

  This columns documents (yes / no) whether changes have been made to specific programmes’ documentation besides the completion of the new (blue) columns (see section 1.2 below).

- *ISCED-97 level and programme destination*

Documents the level and destination of the programme towards labour market entry of further studies, in accordance with the ISCED-97 instructions documented below.

- *Programme orientation*

  Documents the programme orientation towards a general / vocational content, in accordance with the ISCED-97 instructions documented below.

- *Theoretical cumulative duration at ISCED 5*

  Documents the programme theoretical cumulative duration at ISCED 5 level. See section 10.2 for further details.

- *Position on the national degree / qualification structure*

Documents the programme position in the national degree / qualification structure at ISCED 5 level. See sections 10.2 and 11.2 for further details.

- *Notes on programmes that span across ISCED levels or sub-categories*

  Documents the programmes that span across ISCED levels or sub-categories. See sections 8.1 and 10.3 for further details.

- *National name of the programme*

  Documents the national name of the programme.

- *Description name of the programme in English*

  Documents the English translation of the national name of the programme.

- *Minimum entrance requirement*

  Documents the level of prerequisites for entry into the programme under consideration.

- *Main diplomas, credentials and certificates awarded*

  Documents the main diplomas, credentials and certificates awarded upon completion of the programme.

- *Typical starting age*

  Documents the typical starting age of the programme.

- *Theoretical duration of the programme*

  Documents the theoretical duration of the programme.

- *Typical duration of the programme*

  Documents the typical duration of the programme.

- *Theoretical cumulative years of education at the end of the programme*

  Documents the theoretical cumulative years of education completed at all ISCED levels at the end of the programme.

- *Programme specifically designed for continuing education*

  Documents (yes / no) whether the programme under scrutiny is specifically designed for continuing education.

- *Programme specifically designed for part-time attendance*

  Documents (yes / no) whether the programme under scrutiny is specifically designed for part-time attendance.

- *Enrolment*

  Documents the number of students in the programme, if possible for the reference period of the current UOE data collection[8]. The number of students, or a guess / estimate, should also be given for programmes not reported in the UOE.

- *Reported in the UOE data collection*

  Documents (yes / no) whether the programme under scrutiny is reported in the UOE / WEI data collection.

[8] The same should be tried also for programmes reported only in the EU VET data collection.

- *Notes / comments*

  This column provides additional space for any additional information / explanations on the programme under scrutiny. This information should include if possible the national definition of continuing education used to complete the relevant column.

8.1.4 EXAMPLE

Suppose that since the last data collection, country A has created a new continuing education programme at ISCED level 1 that provides basic education to adults. Besides, the current ISCED 3A programme now leads to a final examination which is used as a prerequisite for entry to ISCED 5A tertiary level.

The ISCMAP table for country A should then be updated as follows:

(please, note that in this example, changes have been marked in italics rather than red).

Updated programme (yes / no)	ISCED 97 Level and programme destination	Programme orientation	Theoretical cumulative duration at ISCED 5	Position in the national degree / qualification structure (intermediate, first, second, etc...)	Notes on programmes that span across ISCED levels or sub-categories	National Name of the Programme	Description name of the programme in English	Minimum entrance requirement	Main diplomas, credentials and certifications awarded	Typical starting age	Theoretical duration of the programme	Typical duration of the programme	Theoretical cumulative years of education at the end of the programme	Programme specifically designed for continuing education (yes / no)	Programme specifically designed for part-time attendance (yes / no)	Reported in the UOE / WEI data collection (yes / no)	Enrolment	Notes
Country A																		
Yes	0	G	----	----	----	Maternelle	Pre-primary	None		3	3	3	----	*No*	No	Yes	650	
Yes	1	G	----	----	----	Primaire	Primary	None		6	5	5	5	*No*	No	Yes	1000	
Yes	*1*	*G*	----	----	----	*Scolarisation pour adultes*	*Basic education for adults*	*None*	*Adult Basic Education Diploma*	*18+*	*variable*	*2*	----	*Yes*	*Yes*	*Yes*	63	
Yes	2A	G	----	----	----	Collège	Lower Secondary	None	Lower Secondary Diploma	11	4	4.5	9	*No*	No	Yes	820	
Yes	3A	G / V	----	----	----	Lycée	Upper Secondary	Lower Secondary diploma	*Upper secondary diploma*	15	3	3	12	*No*	No	Yes	409	General and technical education. It is possible to earn a technical qualification through combined work and study
Yes	5B	V	Medium	1st	----	Section Technologique Supérieure	Tertiary Non-University	*Upper secondary diploma*	Primary Teacher, Secondary Professor, Technician diploma	18	3	4	13	*No*	No	Yes	150	Occupational training for medical auxiliaries, laboratory technicians, radio operators, mechanics, meteorologists, librarians, social workers, etc. Training for primary and secondary school teachers.
Yes	5A	G	Long	1st	----	Université	Tertiary-University	*Upper secondary diploma*	Bachelor / professional qualification.	18	5	5.5	17	*No*	No	Yes	462	Professional qualifications are sometimes awarded at the same time as the bachelor (e.g. secondary-school teacher's certificate).
Yes	5A	G	Very Long	2nd	----	Diplôme de spécialisation	Master's, Post-graduate Courses	Tertiary University diploma (e.g., Bachelor, Accountant,	Master's degree, Specialization diploma	24	2	2	19	*No*	No	Yes	143	
Yes	6	G	Very Long	3rd	----	Doctorat	Doctorate programme	Tertiary University diploma (e.g., Bachelor, Accountant, Lawyer) or Master's degree	PhD	26	3	3.5	22	*No*	No	Yes	78	Requires submission of a thesis. ISCED 6 programmes do not have a uniform curricular organisation and entrance requirements. For these reasons it is difficult to indicate their typical starting and ending ages, duration, and so on...

9. COVERAGE AND STRUCTURE OF ISCED-97

The purpose of ISCED is to provide an *integrated* and *consistent* statistical framework for the collection and reporting of *internationally comparable* education statistics. The coverage of ISCED-97 extends to all organised and sustained learning opportunities for children, youth and adults, including those with special educational needs, irrespective of the institutions or organisations providing them or the form in which they are delivered.

While it is widely recognised that learning can occur in situations that are not formally organised (e.g. reading a newspaper article or watching a particular educational television programme) and in activities of short duration (e.g. a one-off lecture or visit to a museum), the requirement that instruction be organised and sustained facilitates the collection of comparable data across countries. In the ISCED-97 framework, "organised" activities include those planned with explicit or implicit educational aims. They involve a providing agency that establishes both the learning environment and the method of instruction. For a learning activity to be "sustained", it must contain the elements of duration and continuity.

9.1 THE CONTENT OF EDUCATIONAL ACTIVITIES IS THE KEY TO THE LEVEL CONCEPT

A departure from a purely institutionally based reporting practice is critical if any level taxonomy is to make the content level of educational activities the baseline of statistical comparisons. In particular, programme allocation to an international category simply because its national name matches the name of the international reporting category must be avoided.

In the absence of individualised data on participants in educational activities, international educational comparisons rely on taxonomies in which aggregates of educational activities - referred to as educational programmes - provide the basis for comparisons. ISCED-97, as was the original ISCED, is such a programme-based taxonomy. That is, ISCED-97 works through the reduction of complex national educational structures along certain classification criteria into defined international categories. It thus provides the possibility of transforming detailed national education statistics on recipients, providers and sponsors of education, which were compiled on the basis of national concepts and definitions, into aggregate categories that are deemed to be internationally comparable and that can be meaningfully interpreted from an international comparative perspective.

The basic unit of classification in ISCED-97 is the educational programme. Educational programmes are defined on the basis of their educational content as an array or sequence of educational activities which are organised to accomplish a pre-determined objective or a specified set of educational tasks. Objectives can, for instance, be the preparation for more advanced study, for a qualification, occupation or range of occupations, or simply for an increase in knowledge and understanding. ISCED-97 is intended to cover both initial education at the early stages of a person's life prior to entry into the world of work, as well as continuing education throughout a person's life.

The term "educational activity" implies a broader meaning than the terms "course" or "class," which is important because education at a given level comprises not only courses organised into programmes but also free-standing courses and as well as a variety of non-course activities. Programmes sometimes include major components not normally characterised as courses—for example, interludes of work experience in enterprises, research projects, and preparation of dissertations.

9.2 PROXIES FOR EDUCATIONAL CONTENT

The definition of the level concept and the establishment of an internationally comparable set of categories for the levels of education is far from trivial since it involves the "valuation" of educational activities in very different educational systems in an international comparable way. The only concept that can meaningfully underlie an international level taxonomy is the educational content of the educational activities involved. This implies, for instance, that whether the instruction a country provides to its 11-years-olds should be called primary or lower-secondary education would be determined by an assessment of what 11 year-olds are expected to learn.

It is clearly not possible, however, to directly assess and compare the content of the educational programmes in an international comparative way. Curricula are far too diverse, multi-faceted, and complex to permit unambiguous determinations that one curriculum for students of given age or grade belongs to a higher level of education than another. The kind of international curricular standards that would be needed to support such judgements do not exist. It is therefore necessary to establish auxiliary criteria as proxies for the content, including:

- typical starting ages of participants and theoretical and typical durations of the programmes;
- typical entrance qualifications and minimum entrance requirements;
- type of certifications, diplomas, or qualifications awarded upon successful completion of the programme;
- types of subsequent education for which completers are eligible;
- the degree to which the programme is specifically oriented towards a specific class of occupations or trades and is generally oriented towards an immediate transition into the labour market.

Each of these criteria serve as classifying criteria for ISCED-97. When a national programme has programme options or paths of study that differ with respect to one or more of such criteria, then—depending on the level of education and the education system concerned—it should be broken apart and reported as separate programmes under ISCED-97.

For example, if it takes four years to train a teacher and seven years to train a medical doctor in a country, then the corresponding activities should be reported as separate programmes under ISCED-97, even though they may be considered as one single type of programme from a national perspective (e.g. university education).

A fundamental aspect of these criteria is that they complement, rather than exclude, each other. For instance, while some students may be classified to the "primary level of education" on the basis of their ages, other classification criteria may be used to classify participants in adult literacy programmes.

Similarly, neither the duration of an educational programme nor its theoretical and typical starting ages should be the sole criterion for its level attribution. Australia, New Zealand, and the United Kingdom are examples of countries where the final years of secondary education and the first years of the tertiary level of education are organised according to a qualifications framework based on a recognition of competencies. This organisational framework implies that the mapping of programmes at the boundary between these educational levels cannot be solely based on either the typical entry ages of participants or the theoretical duration of the programmes.

In the area of vocational education and training, the Australian National Framework for Recognition of Training includes provisions for the recognition of prior learning, competency-based articulation of courses and credit transfer between them, accreditation of courses, registration of private providers and mutual recognition among States of qualifications obtained by individuals

through accredited courses. The National Vocational Qualification (NVQ) in the United Kingdom provides a similar competency-based model. For these types of programmes, multiple classification criteria must be utilised to map them to ISCED-97.

To the extent that data availability forces transition points in national education systems to be used as the main criteria for allocating educational programmes to a particular ISCED-97 level, it will be necessary to ensure that these transition points are consistent with the classification criteria set forth in this document. It is expected that the ISCED-97 framework will not match the data reporting framework in all countries perfectly, and that estimation procedures may need to be employed to either combine or divide national programmes for their reporting under ISCED-97.

9.3 COMPARISON OF ISCED-97 WITH ISCED-76

The biggest 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 using multiple classification criteria. These dimensions include (1) the type of subsequent education or destination to which the programme leads, (2) the programme orientation (general, pre-vocational or vocational education), (3) the programme duration (for the ISCED levels 3, 4 and 5, at which programmes that vary widely in duration exist) and (4) position in the national degree and qualification structure. In ISCED-1976, there was no such provision.

In the revised version of ISCED, a new level, **Level 4**, has been introduced to cover programmes which straddle the boundary between upper secondary and post-secondary education from an international point of view, even though some of them might be considered either upper secondary or post-secondary programmes in the national contexts. In ISCED 1976, such programmes belonged either to Level 3 or Level 5.

Tertiary education now comprises only two levels, Level 5 or Level 6, instead of the previous three levels 5 to 7. The new **Level 5** consists of programmes that do not lead directly to an advanced research qualification while Level 6, is now reserved for programmes leading to advanced research qualifications. Level 5 is subdivided into two categories, ISCED 5A and 5B. While ISCED 5A covers more theoretically based programmes that give access to advanced research qualifications or professions with high skill requirements, ISCED 5B is meant for more practically oriented or occupationally-specific programmes that provide participants with a labour-market relevant qualification. Level 5 in ISCED-97 corresponds approximately to levels 5 and 6 of ISCED-76, as well as graduate programmes (e.g. those leading to the Master's degree) in countries with an undergraduate / graduate split that were previously part of Level 7. Advanced research qualifications are now covered exclusively in the new Level 6.

Level 9 of ISCED 1976, which was reserved for the educational programmes that could not be allocated to any other level, has been eliminated in ISCED-97. It is presumed that all educational programmes can be classified in one of the proposed seven levels (0 to 6).

The correspondence between the level classifications of ISCED 1976 and ISCED 1997 is shown in the following table:

ISCED 1976	ISCED 1997
0 Education preceding the first level	0 Pre-primary level of education
1 Education at the first level	1 Primary level of education
2 Education at the second level, first stage	2 Lower secondary level of education (2A, 2B and 2C)
3 Education at the second level, second stage	3 Upper secondary level education (3A, 3B, 3C)
	4 Post secondary, non-tertiary education (4A, 4B, 4C)
5 Education at the third level, first stage, of the type that leads to an award not equivalent to a First university degree	5 First stage of tertiary education (not leading directly to an advanced research qualification (5A, 5B)
6 Education at the third level, first stage, of the type that leads to a first university degree or equivalent	
7 Education at the third level, second stage of the type that leads to a post-graduate university degree or equivalent	6 Second stage of tertiary education (leading to an advanced research qualification
9 Education not definable by level	

9.4 CLASSIFICATION OF PROGRAMMES THAT DO NOT EASILY FIT INTO THE ISCED LEVEL TAXONOMY

Some educational activities cannot be easily mapped to a particular level of education even though they clearly involve organised and sustained communication designed to bring about learning. Indeed, as countries move towards a more flexible provision of education, modelled on a life-long learning approach, characteristics such as typical entry ages, entry requirements, and programme duration may not be very useful criteria to classify such programmes.

As a result, all such educational activities should be classified based on the degree of equivalence of their educational content with programmes that can be mapped to ISCED-97 using the classification criteria detailed below. For some programmes, the equivalence of the qualifications or certifications awarded upon successful completion can help to classify an educational activity. For example, the level of educational content of a distance education programme might be classified based on the type of qualifications that are awarded upon its successful completion.

Another example of educational programmes that are typically organised outside of the regular education system are those organised by the military. As with other types of programmes, military education and training programmes should be mapped to ISCED according to the similarity of the content of these programmes to other educational programmes. For example, if a military college awards an engineering degree that has similar academic content to an engineering degree awarded by a civilian university, then the military qualification should be mapped to the same ISCED level as the civilian qualification. It should be noted, however, that since many countries do not report military qualifications in international data collections, the reporting of military degrees by only some countries may lead to data incomparability. This is an issue that must be taken up when defining the coverage of an individual data collection.

Enterprise-based education is another type of programme that can be difficult to classify under ISCED. While some enterprise training courses may have minimum entrance requirements that can be easily identified in ISCED, many will not. One option could be to assess what minimum level of skills are required to benefit from participation in a given programme, along with the typical level of educational attainment hold by typical participants of this programme. Another consideration could be to assess whether the programme prepares its participants for entry into programmes of the regular education system. By considering these three criteria jointly, and relating them to the criteria for programmes that can more easily be mapped to ISCED, the enterprise-based programmes can be mapped to particular ISCED levels.

10. LEVEL STRUCTURE OF ISCED-97 AND CORRESPONDING CLASSIFICATION CRITERIA

ISCED-97 facilitates the transformation of detailed national education statistics on participants, providers and sponsors of education, compiled on the basis of national concepts and definitions, into aggregate categories that are internationally comparable and that can be meaningfully interpreted. In ISCED-97, a 'level' of education is broadly defined as the gradations of learning experiences and the competencies built into the design of an educational programme. Broadly speaking, the level is related to the degree of complexity of the content of the programme. This does not, however, imply that levels of education constitute a ladder, where access of prospective participants to each level necessarily depends on the successful completion of the previous level. It also does not preclude the possibility that some participants in educational programmes at a given level may have previously successfully completed programmes at a higher level.

Empirically, ISCED assumes that there exists several main and auxiliary criteria which can help point to the level of education into which any given educational programme should be classified. These are the typical or minimum ages for entry, typical entrance qualifications, minimum entrance requirements, educational properties of the programme, duration of programmes, types of educational or labour market activities that programmes are designed to prepare students for, staff qualification requirements, etc.... These criteria are introduced in the following table for each ISCED-97 level and are discussed in detail for the specific ISCED levels presented in the remainder of this Chapter.

0 PRE-PRIMARY LEVEL OF EDUCATION	Main criteria	Auxiliary criteria	Sub-Categories
Initial stage of organised instruction, designed primarily to introduce very young children to a school-type environment.	Should be centre or school-based, be designed to meet the educational and developmental needs of children at least 3 years of age, and have staff that are adequately trained (i.e., qualified) to provide an educational programme for the children.	Pedagogical qualifications for the teaching staff; implementation of a curriculum with educational elements.	

1 PRIMARY LEVEL OF EDUCATION	Main criteria	Auxiliary criteria	
Normally designed to give students a sound basic education in reading, writing and mathematics.	Beginning of systematic studies characteristic of primary education, e.g. reading, writing and mathematics. Entry into the nationally designated primary institutions or programmes. The commencement of reading activities alone is not a sufficient criteria for classification of an educational programmes at ISCED 1.	In countries where the age of compulsory attendance (or at least the age at which virtually all students begin their education) comes after the beginning of systematic study in the subjects noted, the first year of compulsory attendance should be used to	

2 LOWER SECONDARY LEVEL OF EDUCATION	Main criteria	Auxiliary criteria		Destination for which the programmes have been designed to prepare students		Programme Orientation
The lower secondary level of education generally continues the basic programmes of the primary level, although teaching is typically more subject-focused, often employing more specialised teachers who conduct classes in their field of specialisation.	Programmes at the start of level 2 should correspond to the point where programmes are beginning to be organised in a more subject-oriented pattern, using more specialised teachers conducting classes in their field of specialisation.	If there is no clear break-point for this organisational change, however, then countries should artificially split national programmes into ISCED 1 and 2 at the end of 6 years of primary education.	A	Programmes designed to prepare students for direct access to level 3 in a sequence which would ultimately lead to tertiary education, that is, entrance to ISCED 3A or 3B.	1	Education which is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational/technical education programmes. Less than 25 percent of the programme content is vocational or technical.
	If this organisational transition point does not correspond to a natural split in the boundaries between national educational programmes, then programmes should be split at the point where national programmes begin to reflect this organisational change.	In countries with no system break between lower secondary and upper secondary education, and where lower secondary education lasts for more than 3 years, only the first 3 years following primary education should be counted as lower secondary education.	B	Programmes designed to prepare students for direct access to programmes at level 3C.	2	Education mainly designed as an introduction to the world of work and as preparation for further vocational or technical education. Does not lead to a labour-market relevant qualification. Content is at least 25% vocational or technical.
			C	Programmes primarily designed for direct access to the labour market at the end of this level (sometimes referred to as 'terminal' programmes).	3	Education which prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

3 UPPER SECONDARY LEVEL OF EDUCATION	Main criteria	Modular programmes		Destination for which the programmes have been designed to		Programme Orientation
The final stage of secondary education in most OECD countries. Instruction is often more organised along subject-matter lines than at ISCED level 2 and teachers typically need to have a higher level, or more subject-specific, qualification that at ISCED 2	National boundaries between lower secondary and upper secondary education should be the dominant factor for splitting levels 2 and 3.	An educational qualification is earned in a modular programme by combing blocks of courses, or modules, into a programme meeting specific curricular requirements.	A	ISCED 3A: programmes at level 3 designed to provide direct access to ISCED 5A.	1	Education which is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational/technical education programmes. Less than 25 percent of the programme content is vocational or technical.
	Admission into educational programmes usually require the completion of ISCED 2 for admission, or a combination of basic education and life experience that demonstrates the ability to handle ISCED 3 subject matter.	A single module, however, may not have a specific educational or labour market destination or a particular programme orientation.	B	ISCED 3B: programmes at level 3 designed to provide direct access to ISCED 5B.	2	Education mainly designed as an introduction to the world of work and as preparation for further vocational or technical education. Does not lead to a labour-market relevant qualification. Content is at least 25% vocational or technical.
There are substantial differences in the typical duration of ISCED 3 programmes both across and between countries, typically ranging from 2 to 5 years of schooling.		Modular programmes should be classified at level "3" only, without reference to the educational or labour market destination of the programme.	C	ISCED 3C: programmes at level 3 not designed to lead directly to ISCED 5A or 5B. Therefore, these programmes lead directly to labour market, ISCED 4 programmes or other ISCED 3 programmes.	3	Education which prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

4 POST-SECONDARY NON-TERTIARY	Main criteria	Types of programmes can fit into level 4		Destination for which the programmes have been designed to prepare students		Programme Orientation
These programmes straddle the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered as upper secondary or post-secondary programmes in a national context.	Students entering ISCED 4 programmes will typically have completed ISCED 3. As described above, successful completion of any programme at level 3A or 3B counts as a level 3 completion.	The first type are short vocational programmes where either the content is not considered "tertiary" in many OECD countries or the programme didn't meet the duration requirement for ISCED 5B--at least 2 years FTE since the start of level 5.	A	Programmes at level 4, designed to provide direct access to ISCED 5A.	1	Education which is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational/technical education programmes. Less than 25 percent of the programme content is vocational or technical.
They are often not significantly more advanced than programmes at ISCED 3 but they serve to broaden the knowledge of participants who have already completed a programme at level 3. The students are typically older than those in ISCED 3 programmes.	Programme duration: ISCED4 programmes typically have a full-time equivalent duration of between 6 months and 2 years.	These programmes are often designed for students who have completed level 3, although a formal ISCED level 3 qualification may not be required for entry.	B	Programmes at level 4, designed to provide direct access to ISCED 5A.	2	Education mainly designed as an introduction to the world of work and as preparation for further vocational or technical education. Does not lead to a labour-market relevant qualification. Content is at least 25% vocational or technical.
		The second type of programmes are nationally considered as upper secondary programmes, even though entrants to these programmes will have typically already completed another upper secondary programme (i.e., second-cycle programmes).	C	Programmes at level 4 not designed to lead directly to ISCED 5A or 5B. These programmes lead directly to labour market or other ISCED 4 programmes.	3	Education which prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

	5 FIRST STAGE OF TERTIARY EDUCATION	Classification criteria for level and sub-categories (5A and 5B			Cumulative theoretical duration at tertiary		Position in the national degree and qualifications structure
	ISCED 5 programmes have an educational content more advanced than those offered at levels 3 and 4.	Entry to these programmes normally requires the successful completion of ISCED level 3A or 3B or a similar qualification at ISCED level 4A or 4B.					
5A	ISCED 5A programmes that are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements.	The minimum cumulative theoretical duration (at tertiary level) is of three years (FTE). The factury must have advanced research credentials. Completion of a research project or thesis may be involved.	The programmes provide the level of education required for entry into a profession with high skills requirements or an advanced research programme.	A	Duration categories: Medium: 3 to less than 5 years; Long: 5 to 6 years; Very long: More than 6 years.	A	Categories: Intermediate; First; Second; Third and further.
5B	ISCED 5B programmes that are generally more practical/technical/occupationally specific than ISCED 5A programmes.	Programmes are more practically oriented and occupationally specific than programmes at ISCED 5A and they do not prepare students for direct access to advanced research programmes. They have a minimum of two years' full-time equivalent duration.	The programme content is typically designed to prepare students to enter a particular occupation.	B	Duration categories: Short: 2 to less than 3 years; 3 to less than 5 years; Long: 5 to 6 Years; Very long: More than 6 years.	B	Categories: Intermediate; First; Second; Third and further.
	6 SECOND STAGE OF TERTIARY EDUCATION (LEADING TO AN ADVANCED RESEARCH QUALIFICATION)						
	This level is reserved for tertiary programmes that lead to the award of an advanced research qualification. The programmes are devoted to advanced study and original research.	The level requires the submission of a thesis or dissertation of publishable quality that is the product of original research and represents a significant contribution to knowledge. It is not solely based on course-work.	It prepares recipients for faculty posts in institutions offering ISCED 5A programmes, as well as research posts in government and industry.				

11. ISCED 0 -- PRE-PRIMARY LEVEL OF EDUCATION

11.1 DEFINITIONS AND CLASSIFICATION CRITERIA

Pre-primary education (ISCED 0) is defined as the initial stage of **organised instruction**, designed primarily to introduce very young children to a school-type environment, that is, to provide a bridge between the home and a school-based atmosphere.

Boundary between education and child care. Some countries internally define pre-primary or early childhood education more broadly than others. Thus, the comparability of international statistics on pre-primary education depends on each country's willingness to report data for this level according to a standard international definition, even if that definition diverges from the one that the country uses in compiling its own national statistics. The distinction between programmes that would fall into ISCED 0 and programmes that would be outside of the scope of ISCED-97 rests primarily on the educational properties of the programme. As the educational properties are difficult to assess directly, several proxy measures should be used to determine whether or not a programme should be classified at this level. ISCED 0 programmes should be centre or school-based, be designed to meet the educational and developmental needs of children at least 3 years of age, and have staff that are adequately trained (i.e. qualified) to provide an educational programme for the children.

Centre-based. For a programme to be considered as pre-primary education, it must be school-based or centre-based. These terms are used to distinguish activities in organised educational settings from services provided in households or family settings, which would generally not be included at this level. These centres may come under the jurisdiction of a public or private school or other education service provider.

Age range. Programmes at this level are typically designed for children at least 3 years old and not older than 6. Most OECD countries consider the *typical starting age* of pre-primary education to be three years or older and do not include children younger than three in their own national statistics on pre-primary education. In some cases, however, programmes that are considered "educational" by the country concerned serve children as young as two or two-and-a-half. An educational programme cannot be considered as belonging to level 0 if it is primarily designed to serve children aged two years or less.

The upper age limit depends in each case on the typical age for entry into primary education, typically age 6 or 7.

Staff qualifications and educational content in the curriculum. As it is very difficult to specify precisely where child-care ends and education begins for children at very young ages, it is necessary to rely on proxy criteria. The requirement of pedagogical qualifications for the teaching staff can be a good proxy criterion to distinguish an educational programme from a non-educational programme. It serves to distinguish pre-primary education from child-care for which para-medical or no qualifications are required. In countries where the government does not closely regulate pre-primary education (e.g. there are no qualification requirements for staff), this criteria cannot be, however, the sole factor determining whether or not a programme has sufficient educational content to be classified at ISCED 0.

Formal implementation of a curriculum with educational elements is also a useful criteria to distinguish a programme that meets the educational content requirements of ISCED 0, from programmes with little or no educational content.

Special needs education. Organised instruction for children with special needs should also be included at this level if either the participants are of similar age as other students enrolled in pre-primary education, or if the instructional content is significantly lower than that of the first years of primary education. This concerns in particular education provided in hospitals or in special schools or training centres.

Programmes that combine education and child care. In some countries, institutions providing pre-primary education also provide extended day or evening child-care. In the interest of international comparability, a country whose institutions provide these extended day or evening services should attempt to exclude the cost of such services from any reported expenditure statistics relating to ISCED 0. Personnel data should also be pro-rated. This does not preclude, however, the collection of participation, personnel, of finance data on early childhood programmes that fall outside of the boundary of ISCED 0.

11.2 EXAMPLES

Long Day Care Centre (Australia). Pre-school programmes will be classified at 0. Pre-school education meets all the main and subsidiary criteria. However, programmes at formal Long Day Care centres are a "grey area" because the programmes generally have some educational content, are centre based, many of the children fall into the appropriate age range (though a large proportion do not), and some staff have teaching qualifications.

The Australians will exclude children enrolled in Long Day Care centre programmes from ISCED 0. This is because they only partially meet the ISCED 97 criteria in that:

- Many children attending are aged under 3 years
- Only a minority of staff have teaching qualifications
- The educational properties of programmes at child-care centres seem insufficient.

Day care in private homes (Denmark). In Denmark, young children can attend programmes that are offered either in educational institutions or private homes. The "day-care" offered in private homes is paid by the public authorities and controlled by them. As these programmes are not centre-based, however, they do not meet the criteria to be classified at ISCED 0.

12. ISCED 1 -- PRIMARY LEVEL OF EDUCATION

12.1 DEFINITIONS AND CLASSIFICATION CRITERIA

Primary education usually begins at age 5, 6, or 7 and generally lasts for 4 (e.g. Germany) to 6 years (the mode of the OECD countries being six years). Programmes at the primary level generally require no previous formal education, although it is becoming increasingly common for children to have attended a pre-primary programme before entering primary education.

Level of educational content. Programmes at ISCED 1 are normally designed to give students a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, arts and music. The commencement of reading activities alone is not a sufficient criterion for classification of an educational programmes at ISCED 1.

Boundary between ISCED 0 and ISCED 1. The boundary between pre-primary and primary education is typically the beginning of systematic studies characteristic of primary education, e.g. reading, writing and mathematics. It is common, however, for children to begin learning basic literacy and numeracy skills at the pre-primary level.

An additional proxy criterion for classification at ISCED 1 level is entry into the nationally designated primary institutions or programmes. In countries where primary education starts at an early age (e.g. 4 or 4 and 1/2), young children should be classified at ISCED 1 only if the school day duration, qualifications of staff, and content level of the programme are similar to those where children of age 6 are enrolled.

Although the start of compulsory education is also laid out as a subsidiary criterion for the boundary between ISCED 0 and 1, this criterion is not particularly useful in many OECD countries where the start of compulsory schooling is often not related to either the beginning of systematic studies or the typical age of entry of children. In countries where the age of compulsory attendance (or at least the age at which virtually all students begin their education) comes after the beginning of systematic study in the subjects noted above, the first year of compulsory attendance should be used to determine the boundary between ISCED 0 and ISCED 1. This latter criterion is imposed to emphasise that the start of ISCED 1 should reflect the point at which the start of systematic studies in the above subjects starts for all students, not just a select few.

In most countries, ISCED 1 will correspond to nationally designated primary education. In countries where “basic education” covers the entire compulsory schooling period (i.e. where there is no system break between primary and lower secondary education) and where in such cases “basic education” lasts for more than 6 years, only the first 6 years following pre-primary education should be counted as primary education.

Special needs education. Organised instruction for children with special needs should also be included at this level if the content of the instruction is broadly similar to that of other ISCED 1 programmes.

Adult literacy programmes. Literacy or basic skills programmes within or outside the school system which are similar in content to programmes in primary education for those considered too old

to enter elementary schools are also included at this level because they require no previous formal education.

12.2 EXAMPLES OF INTERNATIONAL VARIABILITY IN THE LENGTH OF PRIMARY PROGRAMMES IN OECD COUNTRIES

- 4 years: Austria, Germany and Hungary
- 5 years: Czech Republic, France and Italy
- 6 years: Belgium, Denmark, Finland, Greece, Japan, Mexico, Poland and Spain
- 7 years: Iceland
- 8 years: Australia
- Varying duration → report first 6 years as ISCED 1: Canada, Switzerland and the United States
- 9 to 10 years of basic education → report first 6 years as ISCED 1: Denmark, Norway and Sweden.

12.3 EXAMPLES OF COUNTRIES WITH NATIONAL VARIABILITY IN THE LENGTH OF PRIMARY PROGRAMMES

Elementary / primary schools (Canada and the United States): Primary and secondary education form a continuum, with the duration of elementary or primary school primarily based on institutional characteristics that can differ by province / state or locality (ranging from 3 grades to as many as 8). In these countries, the elementary-secondary continuum will be split at the end of grade 6 to report at ISCED 1 level, so that the grades contained in each level facilitate cross-country comparability. This method of reporting program data will ensure that, in a national context, comparable programs are allocated at each level (the content level is indeed broadly similar at a particular grade across states / provinces).

Primarschule, école primaire, scuola elementare (Switzerland). The entry age to primary education is either 6 years (4 cantons), 6 1/2 years (2 cantons) or 7 years (17 cantons). Cantons leave the decision of starting schooling ages to the communes (local authorities). Since the length of the primary and lower secondary levels combined is a uniform 9 years, the differences in starting ages translate into different starting ages throughout the whole school careers of students. Primary education lasts between 4 and 6 years (depending on cantons). Reforms under way will reduce the fraction of students in four years programmes. For comparability purposes, the first 6 years of primary / lower secondary education should be allocated to ISCED level 1.

12.4 EXAMPLES OF PROGRAMMES FOR INDIVIDUALS OUTSIDE OF THE TYPICAL AGE OF PRIMARY SCHOOLING

Adult basic academic upgrading (Canada). Less than one year programme to upgrade basic skills. Results in a Certificate of Achievement.

Enseñanzas Iniciales de Educación Básica para personas en edad adulta (Spain). Adult education programme at the primary level.

Svenska för vuxna invandrare (Sweden). This one-year programme teaches Swedish to adult immigrants. Its content is thus different from typical primary education, and it is thus not reported in the UOE data collection.

13. ISCED 2 -- LOWER SECONDARY LEVEL OF EDUCATION

13.1 DEFINITIONS AND CLASSIFICATION CRITERIA

The lower secondary level of education generally pursues the basic programmes of the primary level, although teaching is typically more subject-focused, often employing more specialised teachers who conduct classes in their field of specialisation. Lower secondary education may be either "terminal" (i.e. preparing students for direct entry into working life) and / or "preparatory" (i.e. preparing students for upper secondary education).

This level can range from 2 to 6 years of schooling (the mode of OECD countries is 3 years).

Entry requirements. Entry to an ISCED 2 programme typically requires the completion of primary education or its equivalent; that is, a demonstrable ability to handle ISCED 2 content through a combination of basic education and life experience.

Duration of ISCED 2. Entry to ISCED 2 is typically after 6 years of primary education, and the end of this level is typically after 9 years of schooling since the beginning of primary education. In many OECD countries, the end of lower secondary education is a major educational - and in some cases labour market - transition point. For this reason, the end of ISCED 2 should generally conform to the end of lower secondary or "basic" education.

Boundary between ISCED 1 and ISCED 2. The boundary between ISCED 1 and ISCED 2 coincides with the transition point in national educational structures where the way in which instruction is organised begins to change. Programmes at the start of level 2 should correspond to the point where programmes are beginning to be organised in a more subject-oriented pattern, using more specialised teachers conducting classes in their field of specialisation. If this organisational transition point does not correspond to a natural split in the boundaries between national educational programmes, then countries should split their programmes for international reporting at the point where national programmes begin to reflect this organisational change. If there is no clear break-point for this organisational change, however, then countries should artificially split national programmes into ISCED 1 and 2 at the end of 6 years of primary education.

13.2 SUB-CATEGORIES AT THIS LEVEL

Type of subsequent education or destination. ISCED level 2 programmes are sub-classified according to the destination for which the programmes have been designed to prepare students:

- *ISCED 2A*: programmes designed to prepare students for direct access to level 3 in a sequence which would ultimately prepare students to attend tertiary education, that is, entrance to ISCED 3A or 3B;

- *ISCED 2B*: programmes designed to prepare students for direct access to programmes at level 3C;

- *ISCED 2C*: programmes primarily designed for direct access to the labour market at the end of this level (sometimes referred to as 'terminal' programmes).

Programme orientation[9]. Programmes at level 2 can also be subdivided into three categories based on the degree to which a programme is specifically oriented towards a specific class of occupations or trades and leads to a labour-market relevant qualification:

- Type 1 (general): Covers education which is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational or technical education programmes. Less than 25 percent of the programme content is vocational or technical.

- Type 2 (pre-vocational or pre-technical): Covers education that is mainly designed to introduce participants to the world of work and to prepare them for entry into further vocational or technical education programmes. Successful completion of such programmes does not lead to a labour-market relevant vocational or technical qualification. For a programme to be considered as pre-vocational or pre-technical education, it should comprise at least 25 per cent of vocational or technical content.

- Type 3 (vocational or technical): Covers education that prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

In some cases the first few months or first year of a Type 3 programme have Type 2 elements. For the purpose of mapping to ISCED-97, however, only whole programmes that meet the above criteria for Type 2 should be classified in that category.

13.3 SPECIFIC CLASSIFICATION ISSUES

Use of type 2 (pre-vocational) for special education programmes Countries should attempt to classify and report programmes to students with special educational needs as type 2 (prevocational) if the programmes meet the classifying criteria of prevocational programmes. That is, education that is mainly designed to introduce special needs participants to the world of work and prepare them for entry into further vocational or technical education programmes should be classified this way. If a country has such a programme for special needs students but cannot separate it from data reported as type 1 (general) or type 3 (vocational), this should be documented in the ISCED mapping of the corresponding programme.

Boundary between ISCED 2 and ISCED 3. National boundaries between lower secondary and upper secondary education should be the dominant factor to split levels 2 and 3. As a result, the completion of lower secondary education can occur after 8, 9, or 10 years of schooling and at ages 15, 16, or even 17. For countries that have two major transition points in or around these grade and age spans (e.g. the United Kingdom at ages 14 and 16), the allocation of these will be decided on a case by case basis in consultation with the Secretariat. In countries with no system break between lower secondary and upper secondary education, and where lower secondary education lasts for more than 3

[9] ISCED-97 explicitly uses the terms General, Pre-Vocational, and Vocational to describe the different programme orientations. As these terms have different national applications in OECD countries - differences that have led to much confusion and incomparability of data - they are not used in this document. The definitions underlying these categories, which are more universal than the terms themselves, have been numbered Type 1, 2, and 3 in this Manual, an ordering that corresponds to General, Pre-Vocational, and Vocational in the UNESCO ISCED-97 framework.

years, only the first 3 years following primary education should be counted as lower secondary education.

Bridging programmes. Short programmes that follow completion of ISCED 2, but have a level of content similar to programmes at level 2, should be also categorised at level 2. For example, in Denmark, Finland, and Switzerland there is a 10th year which follows the end of lower secondary that students can use to change streams, that is, to prepare entry into a different type of programme at level 3 than they have been prepared for at level 2. These programmes will be classified at level 2.

Special needs and adult education. This level includes special needs education programmes and all adult education which are similar in content to the education given at this level, e.g. the education which gives to adults the basic skills necessary for further learning.

13.4 EXAMPLES

13.4.1 ISCED2A

13.4.1.1 TYPE 1 (GENERAL)

Canada and the United States will apportion their elementary-secondary programmes in a manner that will result in grades 7 through 9 being reported in this category.

Secondary school: 1st stage (Australia). The first stage of secondary school lasts for 3 or 4 years, depending on the length of primary school in the state concerned, and ends with the award of the Year 10 Certificate. Students follow a general school programme, offering the opportunity for further academic progression.

Lower secondary schools, access to general (Germany). Programme (grades 5 to 10) following the 4 years of primary school that is marked by the start of subject presentation. Successful completion leads to *Realschulabschluß* (*Gymnasium, Integrierte Gesamtschule; Freie Waldorfschule*). Successful graduates are entitled to enter studies at upper secondary general schools that qualify for ISCED 3A programmes.

Almen voksenuddannelse (AVU) (General adult education 9th-10th grade) (Denmark). Certificates correspond to certificates for single courses in grades 9 and 10 in basic school.

Lower secondary evening schools (Germany). Programme (of 1 to 2 years of duration) especially intended for adults with no or lower level ISCED 2 qualification (e.g. *Hauptschulabschluß*) who want to obtain a higher qualification at lower secondary level (mostly *Realschulabschluß*).

Schuljahr, Vorkurs, préapprentissage, corsi preparatori (Switzerland). These programmes last one year, are general in content and prepare students mainly for vocational education in the dual system (by "upgrading" the skills of students coming from lower secondary programmes with basic demands, for instance). However the specific vocational content is too low to warrant their classification as type 2. This group of programmes is nationally considered to be part of the lower secondary or the upper secondary level according to institutional affiliation.

13.4.1.2 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

Berufsvorbereitungsjahr (Germany). One year pre-vocational programme designed for students with 9 or 10 years of general education who did not obtain a contract in the Dual System. It prepares students for vocational training (ISCED 3B).

Muvészeti általános iskola (Hungary). Lower secondary education with additional music, dance, or sports teaching in preparation for higher studies in these areas. (National Core Curriculum Key Stage Grade 8).

13.4.1.3 TYPE 3 (VOCATIONAL OR TECHNICAL)

Deeltijds kunstonderwijs - middelbare graad (Part-time artistic education - middle degree) (Flemish Community of Belgium). Part-time artistic education focuses on the 4 traditional expression forms: image, dance, music and spoken word. The programmes are being offered on a part-time basis (evenings, Wednesday afternoons, week ends). These courses do not belong to compulsory education. In general, specific certificates, complementary to lower secondary education are granted.

Enseignement technique (dans l'enseignement secondaire traditionnel de type 2) (French Community of Belgium). This 2- to 3-years programme is intended for the school-age population having successfully completed the first 2-years cycle of secondary schooling. It aims at enabling entry into working life, although it also provides an opportunity for further educational and training.

13.4.2 ISCED2B

13.4.2.1 TYPE 1(GENERAL)

Felzárkóztató általános iskolai programok (Hungary). Remedial program for drop-outs and poor learners to provide a second chance for further education. Typically attended by late maturers and low achievers. Provides entry to ISCED 3C programmes.

13.4.2.2 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

Basic Education and Basic Employment Skills (Stream 2100) (Australia). Courses classified to Stream 2100 provide remedial education or involve preparatory activities to enable participation in subsequent education or social settings. They aim at achieving basic skills and standards and their completion can lead to entry into more advanced Vocational Education and Training (VET) courses and can also assist in gaining employment. For example, one Stream 2100 course, equivalent to about one year full time, is designed to provide Aboriginal adults with the skills necessary to manage further vocational study or raise their prospects towards base grade employment.

Brobygning (Bridge-building) (Denmark). This bridging course is a new type of programme, introduced to facilitate the transition from basic school to the vocational training system for those who have not quite decided their type of further education.

Classe préparatoire à l'apprentissage (France). This programme is designed for students who want to take an apprenticeship programme in the future. It helps them decide which field of training (i.e. trade or occupation) to aim for. The CPA is a one year programme at ISCED 2. The theoretical starting age is 14. Approximately 80 per cents of instruction take place in an educational institution (usually a school) and 20 per cent in a business enterprise.

Voorbereidend beroepsonderwijs (Netherlands). Pre-vocational education (VBO) lasts 4 years. In content – general and vocational courses – it is designed as basic training leading to further vocational training. The VBO is aimed at young people aged 12 to 16.

Curso Geral de Dança (Portugal). Dance Studies -Elemental Level.

13.4.2.3 TYPE 3 (VOCATIONAL OR TECHNICAL)

Secundair onderwijs voor sociale promotie - LSBL en LSTL (Flemish Community of Belgium). Social advancement secondary education: lower secondary vocational and technical courses. Any individual over the minimum school-leaving age may attend a part-time course for adults. Secondary education for social advancement is divided into 2 cycles: the lower and the higher secondary levels. The lower level includes lower secondary vocational courses (LSBS: '*lagere secundaire beroepsleergangen*') and lower secondary technical courses (LSTL: '*lagere secundaire technische leergangen*').

13.4.3 ISCED2C

13.4.3.1 TYPE 1(GENERAL)

Zvláštní škola – 3. stupen (Czech Republic). Remedial school – 3rd stage. Programme for children with learning problems (including those that are socially handicapped). Results in a school leaving certificate (vysvedcení).

13.4.3.2 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

Szakiskola alapfokú iskolai végzettség nélküli szakmákra (Hungary). NVQL (National Vocational Qualification List) training in programs requiring less than 10 years of completed general education.

Youth reach (Ireland). Results in a basic skills training certificate.

13.4.3.3 TYPE 3 (VOCATIONAL OR TECHNICAL)

Buitengewoon secundair onderwijs - opleidingsvorm 1 en 2 (Flemish Community of Belgium). Special secondary education - training form 1 and 2. This programme is for students with a physical or mental handicap who cannot enter the normal streams of education and training. It is tailored to their abilities and prepares them for integration into a protected environment and work situation.

Short vocational school NVQL (National Vocational Qualification List) (Hungary). Training in 2-years programmes that do not require completed basic education for entry.

Lower Secondary Job Training (Mexico). The typical duration of these programmes is 4 years, although there are also shorter programmes. Students in this programme are commonly adults. The programme is oriented to train persons (15 years and over) to introduce them to the world of work.

14. ISCED 3 -- UPPER SECONDARY LEVEL OF EDUCATION

14.1 DEFINITIONS AND CLASSIFICATION CRITERIA

ISCED 3 corresponds to the final stage of secondary education in most OECD countries. Instruction is often more organised along subject-matter lines than at ISCED 2 level and teachers typically need to have a higher level, or more subject-specific, qualifications than at ISCED 2. The entrance age to this level is typically 15 or 16 years. There are substantial differences in the typical duration of ISCED 3 programmes both between and within countries, typically ranging from 2 to 5 years of schooling. ISCED 3 may either be "terminal" (i.e. preparing students for direct entry into working life) and / or "preparatory" (i.e. preparing students for tertiary education).

Entry requirements. Admission into ISCED 3 educational programmes usually requires the completion of ISCED 2 for admission (typically 8 or 9 years of full-time education since the beginning of level 1). Alternatively, a combination of basic education and life experience that demonstrates the ability to handle ISCED 3 subject matter is sometimes sufficient.

14.2 SUB-CATEGORIES AT THIS LEVEL

Type of subsequent education or destination. ISCED level 3 programmes are sub-classified according to the destination for which the programmes have been designed to prepare students:

- *ISCED 3A*: programmes at level 3 designed to provide direct access to ISCED 5A;
- *ISCED 3B*: programmes at level 3 designed to provide direct access to ISCED 5C;
- *ISCED 3C*: programmes at level 3 designed to prepare students for direct entry into the labour market, although they also provide access to ISCED 4 programmes or other ISCED 3 programmes. Upper secondary apprenticeship programmes would fall into this category unless the programme was primarily designed to prepare students to enter ISCED 5.

Direct access should not be interpreted as either a strict legal definition of the destination of programmes (which might be far from the reality) or by looking at the actual destination of students (which might be strongly influenced by the current labour market situation). Programmes should be mapped to A, B, and C according to the orientation of **the design of the curriculum**, that is, the type of level 5 programmes (A or B) or direct labour market entry that the curriculum prepares students for. For example, in France, the *baccalauréat technologique* is designed to prepare students to enter 5B programmes (primarily the *enseignement en institut universitaire de technologie* (IUT) and not 5A (university) programmes, even though all students holding the *baccalauréat technologique* are legally entitled to enter universities. Therefore, the *baccalauréat technologique* would be classified at level 3B.

Some programmes offered at this level provide access to multiple educational and labour market destinations. Programmes *primarily* designed to provide access (as defined above) to 5A (even if most students go to 5B or the labour market) should be classified as 3A. Similarly, programmes

primarily designed to provide access to 5B should be classified as 3B; and programmes that are primarily designed for either direct labour force entry or to prepare students to enter another programme at level 3 or a programme at level 4 should be classified as 3C.

Can ISCED 3C programmes provide access to ISCED 5? It was not originally intended in the ISCED revision that ISCED 3C would include programmes that have been designed to provide access to ISCED 5. According to ISCED-97, ISCED 3C programmes are designed to prepare students for direct access to the labour market or access to either ISCED 4 or other programmes at ISCED 3. This distinction does not fully capture the degree of openness of the education system in many countries, however. In several Nordic countries, for example, there are ISCED level 3 programmes that have been primarily designed to prepare students for direct labour market entry, although they also serve as minimum entry requirements for ISCED 5B programmes. Programmes should be mapped to ISCED 3C if they are primarily designed to equip students with the skills needed for direct transition into the labour market. If, however, a programme is designed both to prepare students for further study at ISCED 5B and for students to directly enter the labour market, it should be classified at ISCED 3B.

Programme orientation. Programmes at level 3 can also be subdivided into three categories based on the degree to which they are specifically oriented towards a specific class of occupations or trades and lead to a labour-market relevant qualification:

- *Type 1* (general): Covers education that is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational or technical education programmes. Less than 25 percent of the programme content is vocational or technical.

- *Type 2* (pre-vocational or pre-technical): Covers education that is mainly designed to introduce participants to the world of work and prepare them for entry into further vocational or technical education programmes. Successful completion of such programmes does not lead to a labour-market relevant vocational or technical qualification. For a programme to be considered as pre-vocational or pre-technical education, at least 25 per cents of its content have to be vocational or technical.

- *Type 3* (vocational or technical): Covers education that prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

In some cases the first few months or first year of a Type 3 programme has Type 2 elements. For the purpose mapping to ISCED-97, however, only whole programmes that meet the above criteria for Type 2 should be classified in that category.

14.3 SPECIFIC CLASSIFICATION ISSUES

Modular Programmes. An educational qualification is earned in a modular programme by combining blocks of courses, or modules, into a programme meeting specific curricular requirements. A single module, however, may not have a specific educational or labour market destination or a particular programme orientation. Educational and labour market options are determined, at least in part, by how an individual combines different modules into a coherent programme. For example, in Denmark it is possible for students to combine different modules at level 3 into a programme that could meet the criteria of 3A, 3B, or 3C. The students themselves, however, may never be enrolled in programme with a particular destination per se, since the way modules are combined is what determines further educational or labour market access. This issue is similar to the situation encountered in many secondary institutions in Canada and the United States, where the educational and labour market access of students is determined by course or credit selection rather than a formal programme selection.

Modular programmes should not be classified as ISCED 3A, 3B or 3C simply because there is not enough information regarding what a particular student is doing at a particular point in time. For the purpose of reporting enrolment, programmes of this type should be classified at level "3" only, without reference to the educational or labour market destination of the programme. Countries with modular systems at level 3 should however make every attempt to report graduates and educational attainment according to the educational or labour market destination that completion of a particular series of modules (or courses) prepares a student for.

Successful completion of level 3 (see paragraph 74 of the UNESCO document 151 EX/8 Annex II, March 1997)**.** As widely acknowledged, difficulty in interpreting what is meant by level 3 completion under the old ISCED has led to many problems in the comparability of education data on both graduates and the educational attainment of the population. Due to the wide variability in the duration and content level of ISCED 3 programmes within and between countries, ISCED-97 has specified a requirement for level 3 programmes that are considered to be of insufficient duration. The criteria for level 3 "completion" in ISCED-97 requires either the successful completion of a 3A or 3B programme (designed to provide access to level 5) or the successful completion of a 3C programme with a cumulative theoretical duration of 3 years (FTE).

Examination of the preliminary results of the mapping of national programmes in OECD countries to ISCED 3 (3C in particular) makes it clear that the above duration requirement for 3C programmes does little to decrease the heterogeneity of ISCED 3 qualifications. In fact, this distinction may lead to even more comparability problems. For example, while both ISCED 3A and 3C programmes in Ireland have 2 years cumulative duration at ISCED 3, in the United Kingdom the cumulative duration (at ISCED 3) of an ISCED 3A completion is 4 years, while the cumulative duration of an ISCED 3C completion would be 2 years. In Iceland, a student can complete an ISCED 3C programme of 1, 2, 3 or 4 years, while an ISCED 3A programme takes 4 years. A strict application of the duration requirement would lead to the exclusion of ISCED 3C completers in both Ireland and the United Kingdom, even though students completing ISCED 3C programmes in Ireland might have completed a similar number of years of education as ISCED 3A completers. In Iceland, completers of 3 years programmes would be counted as ISCED 3 completions, even though they have completed one year of schooling less than their ISCED 3A counterparts.

The high stakes of having some 3C programmes classified as ISCED 3 completions has also led to the desire in several countries to "upgrade" the implicit duration of programmes classified at ISCED 3C so that completion of these qualifications meets the 3 years duration requirement. For example, the United Kingdom argues that 5 GCSEs [General Certificate of Secondary Education], at grades A-C, are at a sufficiently higher level of educational content than fewer GCSEs at these grade levels and that they should be classified at a higher level. If the UK upgrades a large proportion of its GCSEs and similar qualifications, then other countries will have an incentive to do so. Even though there is merit to the UK argument that there is a difference in the level of curricular coverage of students who attempt and pass 5 GCSE's at grades A-C and those who pass fewer GCSE at this level, the logical outcome is that the label "level 3 completion" becomes as diluted as it was under the old ISCED.

In order to tackle that issue, the UOE data collection allows for 2 types of reporting of ISCED 3C programmes.

- *Option 1.* In addition to collecting data on first-time ISCED 3 graduates (unduplicated) in the UOE, data on first-time ISCED 3A or 3B (unduplicated) graduates is also collected. Comparisons of graduates usually focus primarily on first time ISCED3A or 3B graduates, although the number of ISCED 3C graduates could be discussed separately as well (assuming that total graduates minus first-time ISCED3A or 3B graduates roughly equals ISCED 3C graduates). It can, then, be admitted that ISCED 3C is a wide mix of different programmes in different countries, leading directly to the labour market or to further vocational programmes at levels 3 and 4, while others are simply the first 2 years of the 4 or 5 years that have been designated as upper secondary (ISCED 3).

- *Option 2*. The duration breakdown for ISCED 3C programmes has been revised in the UOE data collection. The distinction between ISCED 3C programmes of less than 3 years and 3C programmes of 3 years or more has been dropped. This distinction is replaced, instead, by a distinction that separates ISCED 3C programmes into those of a similar length (in cumulative years at ISCED 3), at the national level, as ISCED 3A and 3B programmes from those that are significantly shorter (e.g. more than 1 year). Cumulative duration is used as a means to roughly assess the similarity in the level of educational content between ISCED 3A/B and ISCED 3C programmes. The decision can then be made of whether ISCED 3 completion should be defined as successful completion of an ISCED 3A or 3B programmes or 3C programme that is no more than 1 year (FTE) duration shorter. The change will allow to control for the wide variability in the number of years being mapped to ISCED level 3, as well as for national differences in the lengths of ISCED 3A/B and ISCED 3C programmes.

Special needs and adult education. This level includes special needs education programmes and all adult education which are similar in content to the education given at this level.

14.4 EXAMPLES

14.4.1 ISCED3 (NO CLASSIFICATION BY DESTINATION OR PROGRAMME ORIENTATION)

Both Canada and the United States will apportion their elementary-secondary programmes in a manner that will result in grade 10 to the end of secondary schooling (Grade 12 in the United States and most Canadian provinces and Grade 13 in Ontario) being reported at this category. As most of these programmes are modular in nature, that is, students combine different course offerings in order to prepare for entry into higher education or a specific trade, enrolments will be reported as ISCED3 -- all. To the extent to which student transcripts or records can be evaluated to determine the type of subsequent education or destination and programme orientation of graduates, these sub-categories should be estimated when reporting graduate data.

14.4.2 ISCED3A

14.4.2.1 TYPE 1 (GENERAL)

Upper secondary schools, general (Germany). Three years upper secondary general programme, comprising grades 11 to 13, which leads to the *Abitur (Hochschulreife)*. It is attended by students holding the *Realschulabschluß (Gymnasium, Integrierte Gesamtschule; Freie Waldorfschule)*. Successful graduates of this programme are entitled to enter ISCED 5A programmes.

Geniko lykeio (Greece). The curriculum areas from which the programme of studies in this type of Lyceum are drawn include: literature, theology, physics, mathematics and the arts. There are 30 teaching hours per week in all three grades. In grade 3, the subjects are divided into A (general education) and B (preparatory studies for universities, polytechnics and Technological Educational Institutes).

14.4.2.2 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

Szakközépiskola nappali képzés 9-12. évfolyam (Hungary). Upper level secondary education with pre-vocational elements, designed to prepare students for the Maturity Examination.

Leaving Certificate Vocational Programme (Ireland). This programme prepares students for the employment-targeted *Leaving Certificate* and combines general and vocational subjects. It is one of three streams leading up to the *Leaving Certificate*. Participants must learn a living European language and

take three compulsory modules: familiarity with the workplace, vocational preparation and work experience.

14.4.2.3 TYPE 3 (VOCATIONAL OR TECHNICAL)

Höhere berufsbildende Schulen (Austria). Secondary Technical and Vocational Colleges offer general education, technical theory and practical training (in the workshop, laboratory, kitchen or enterprise). The training is designed to give students the abilities and qualifications they need to take up skilled posts directly or to enter university. In most cases, their curriculum includes compulsory summer placements in an enterprise. The first year of training generally corresponds to the final year of compulsory education.

Gewoon secundair onderwijs - 2de graad en 1ste en 2de leerjaar van de 3de graad TSO (Flemish Community of Belgium). Regular secondary education - 2nd stage and 1st and 2nd years of the 3rd stage TSO. TSO (technical secondary education) essentially concentrates on general and technical / theoretical subjects. This programme consists in practical courses. Young people emerging from TSO can join the labour market or pursue their studies in higher education.

Istituto tecnico (Italy). Certain technical colleges train young people for technical and administrative work at intermediate level in agriculture, industry, commerce and tourism. At the end of 5 years' training, students take an examination to obtain the certificate of upper secondary education for their chosen field, which enables them to embark up a career or go on to university.

Berufsmaturität, maturité professionnelle, maturità professionale (Switzerland). The programme combines an apprenticeship of 3 or 4 years duration with additional schooling in general subjects. It gives unconditional access to the newly created "*Fachhochschulen*", classified at level 5A.

General National Vocational Qualification Advanced Level (United Kingdom). These programmes are essentially aimed at young people aged 16 to 19 in full-time education (in secondary education establishments and colleges), but they also offer part-time training for adults. They are more or less equivalent to GCE [General Certificate of Education] at grade A or a level 3 NVQ [National Vocational Qualification]. The key skills include communication, mathematics and computer skills and the development of 'employability'. The objective is to develop knowledge, skills and understanding in general vocational fields such as commerce, the manufacturing industry, retailing and distribution. These programmes can lead to a job or to post-secondary and higher education. They usually last one full time year.

14.4.3 ISCED3A OR C (DEPENDING ON THE PARTICULAR PROGRAMME), TYPE 3 (VOCATIONAL OR TECHNICAL)

Secondary Vocational Schools (Czech Republic). These technical/vocational programmes combine school and work-based elements, although the majority of instruction is given in schools. The schools prepare students for direct entry into an occupation. They also offer, however, a longer study for 4 years ending with the matriculation exam enabling the graduate to enter university (these will be classified at 3A). These professional schools specialise mostly in engineering and technical areas, and more recently in management as well. They also provide general education, including mother tongue, history, mathematics and sciences. Study at secondary vocational schools is completed with an apprentice exam and will be classified at ISCED 3C, Type 3. Graduates of four-years curricula take both apprentice exam and matriculation final exam and will be classified at ISCED 3A, Type 3.

14.4.4 ISCED3B

14.4.4.1 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

Felnottek szakközépiskolája 9-12 (Hungary). Upper level part-time, secondary education programme preparing students for the Maturity Examination. This programme has pre-vocational elements.

Listnám á framhaldsskólastigi (Iceland). Fine and applied arts programme at the upper secondary level. Designed to provide access to fine arts programmes at ISCED5B.

14.4.4.2 TYPE 3 (VOCATIONAL OR TECHNICAL)

Skilled Courses for Recognised Trades (Australia). Complete Trade Courses (Stream 3212) that provide initial education and training for entry into a specific trade. Such vocations require a high degree of skill, usually in a wide range of related activities, performed with minimal direction and supervision. In contrast with operatives, persons in such vocations are competent to carry out a broad range of related tasks. The skill level for such vocations is below that required of a para-professional within the same industry. These courses can lead to more advanced technician and supervisory courses, though only a minority of graduates currently proceed to further studies.

Lehre (Duale Ausbildung) (Austria). In this 3-years programme, learning takes place alternatively in the workplace and in a vocational education school (dual system). The apprentices are expected to attend a vocational school for further general education, study of the theoretical technical aspects of an occupation, and practical training. They are employed and paid by the enterprise. Education in part-time vocational schools takes place throughout the school year, in one- or two-day periods. Apprenticeship training is open to all young people who have completed their 9 years of compulsory schooling.

Bac professionnel (France). This programme prepares for a vocational "*baccalauréat*." It takes place mainly in an educational / training institution, but includes training periods in an enterprise and aims at helping participants to enter working life. It is also possible to earn the *Bac professionnel* by apprenticeship, with instructional time shared between an education / training institutions and an enterprise. The professional *baccalauréat* allows for immediate entry into the labour force. A minority of graduates pursues to higher studies however, mainly to earn the *Brevet de Technicien Supérieur* (BTS) at ISCED 5B.

Dual System (Germany). Special form of apprenticeship which comprising education and training both at a vocational school and in an enterprise. Students must have completed ISCED 2. Graduates qualify for entry into *Fachschulen* (5B) or into the labour market.

14.4.5 ISCED3C PROGRAMMES WITH A CUMULATIVE DURATION SIMILAR TO ISCED 3A AND 3B PROGRAMMES

14.4.5.1 TYPE 1 (GENERAL)

Allgemeinbildende Schule, école de culture générale (Switzerland). General education programmes of two years duration preparing students for vocational education at ISCED level 3B or 4A. The majority of the students will enter programmes at ISCED level 4A. The typical starting age is 15.

14.4.5.2 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

Leaving Certificate Applied (Ireland). This 2-years programme is intended to meet the needs of those students who are not adequately catered for by other Leaving Certificate programmes or who chose not to opt for such programmes. It includes theoretical and practical vocational modules. It does not provide direct access to tertiary education. This new programme was set up in 1995.

14.4.5.3 TYPE 3 (VOCATIONAL OR TECHNICAL)

Stream 3100 (Australia). Stream 3100 courses provide initial education and training for entry to vocations requiring a level and range of skills less than is normally required for a trade. Stream 3100 courses would generally require minimal educational qualifications for entry, would be of short duration, and would emphasise a single activity that can be performed upon completion of the course. Included, for example, would be courses for plant and machine operators, and cleaners. Operatives are personnel who, after training, are able to perform a limited range of skilled operations. Entrance requirements, while variable, might typically involve entrants having completers of lower secondary education.

Opleidingen in de leertijd georganiseerd door het VIZO (Flemish Community of Belgium). In this programme a youngster can enter into a contract of apprenticeship with an employer-instructor from the age of 15 or 16. He or she has an opportunity to learn a trade while taking part in the everyday activity of a workplace for four days a week. The apprentice spends the fifth day in a VIZO training centre where he or she takes an additional vocational, general and social course. The courses are heavily geared to the practical aspects of work.

Střední odborná škola, studium bez maturitou (Czech Republic). Secondary technical school without the *maturita* examination. This 3-years programme provides both general education and practical vocational apprenticeship training. Students do not have access to higher education unless they take the *maturita* examination, which can be accomplished after taking a 2-years ISCED 4A programme.

Erhvervsfaglige uddannelser (Denmark). Primarily vocational youth programme, includes training for carpenters, blacksmiths, electricians, etc. There are 86 different courses in trade and technical fields, and more than 2 specialities. Most courses last between 3 and 4 years.

Szakiskolai szakképzo évfolyamok és programok (Hungary). One to two years vocational programmes preparing for National Vocational Qualification List (NVQL) examinations. Entry requirement: the completion of Grade 10 and/or the Basic Secondary Examination (an ISCED 3C, general programmes). The typical starting ages are 16 and 17 and the cumulative years of schooling at ISCED 3 would be 3-4 years.

14.4.6 ISCED3C PROGRAMMES WITH A CUMULATIVE DURATION (MORE THAN ONE YEAR) SHORTER THAN ISCED 3A AND 3B PROGRAMMES

14.4.6.1 TYPE 1 (GENERAL)

Entry to Employment or Further Education: Educational Preparation, Stream 2200 (Australia). A one-half year course designed to provide remedial education or teach other preparatory activities to enable participation in subsequent education or social settings. The typical starting age is 15 or older.

Polytechnische Schule, pre-vocational year (Austria). One year programme in the last year of compulsory education; introduces into broad occupational fields. It is often followed by apprenticeship (ISCED 3B). The typical starting age is 14.

Általános iskola, szakiskola általánosan képzo 9-10. évfolyamai (Hungary). Basic education program of the vocational school. Grade 9-10 general subject courses preparing pupils for entrance to NVQL programmes with an entrance requirement of 10 years of general education. The typical starting age is between 14 and 15.

14.4.6.2 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

General National Vocational Qualification Foundation Level (United Kingdom). These programmes are essentially targeted at 16-19-years-olds in full-time education (secondary education establishments and colleges, although they also offer part-time training for adults. They are more or less equivalent to four GCSE [General Certificate of Secondary Education] D to G passes or a level 1 NVQ [National Vocational Qualification]. The key skills include communication, mathematics and

computer skills and the development of 'employability'. The aim is to develop information, skills and understanding in general vocational fields such as commerce, the manufacturing industry, retailing and distribution. These programmes may lead to employment or to post-secondary or higher education or training. They are full-time for a year, and there are no specific admission conditions.

14.4.6.3 TYPE 3 (VOCATIONAL OR TECHNICAL)

Gewoon secundair onderwijs - 2de graad en 1ste en 2de leerjaar van de 3de graad BSO (Flemish Community of Belgium) Regular secondary education - 2nd stage and 1st and 2nd year of the 3rd stage *Beroepssecundair onderwijs* (BSO). BSO is a vocational secondary education programme based on practical work. It gives young people specific skills at the same time as a general education. Students who wish to gain access to higher education can take an additional third year at third degree level (ISCED 4A).

Enseignement de second cycle professionnel du second degré (sous statut scolaire) (France). This 2-years programme prepares for an intermediate vocational *diploma (Brevet d'études professionnelles* / BEP) leading to a job or to further vocational education and training (at ISCED 3A or 3B). It is mainly provided in education / training institutions, but includes training periods in an enterprise. The typical starting ages are between 15 and 17.

Formazione professionale regionale (Italy). This 2-years programme, which comes after the end of compulsory education, offers a basic qualification and trains skilled workers in various sectors of the economy. Each region is in charge of setting the objectives and designing the programme. The typical starting ages are between 14 and 18.

15. ISCED 4 -- POST-SECONDARY NON-TERTIARY

15.1 DEFINITIONS AND CLASSIFICATION CRITERIA

Level 4 was introduced in ISCED-97 to cover programmes that straddle the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered as upper secondary or post-secondary programmes in a national context. According to ISCED-97 (paragraph 72), level 4 programmes cannot, considering their content, be regarded as tertiary programmes. They are often not **significantly** more advanced than programmes at ISCED 3 but they serve to broaden the knowledge of participants who have already completed a programme at level 3. The students are typically older than those in ISCED 3 programmes.

Programme duration: ISCED 4 programmes typically have a full-time equivalent duration of between 6 months and 2 years.

Entry requirements. The typical entry requirement for ISCED 4 programmes is successful completion of ISCED 3. As described above, successful completion of any programme at level 3A or 3B counts as a level 3 completion. If a course requires the completion of and ISCED 3A or 3B course for entry, it would meet the minimum entry requirements for being classified at ISCED 4. ISCED 3C programmes that have a similar duration and level of educational content to ISCED 3A or 3B programmes also serve as the minimum entry requirements for ISCED 4. In cases where ISCED 3C programmes are of significantly (e.g. more than one year) shorter duration than ISCED 3A or 3B programmes, then the criterion of successful completion of ISCED 3 should be interpreted in the context of the cumulative duration of programmes spanning both level 3 and level 4. For example, suppose a 2-years programme under consideration for classification at ISCED 4 has a 2-years ISCED 3C programme as a minimum entry requirement and corresponding ISCED 3A and 3B courses also have 2 years cumulative duration at ISCED level 3. Then the minimum cumulative duration requirement is met (2 years at ISCED3C + 2 years at ISCED4 = 4 years cumulative duration). If, however, a 6 months programme under consideration for classification at ISCED 4 has a 2 years ISCED 3C programme as a minimum entry requirement, where comparable ISCED 3A and 3B courses have a cumulative duration of 4 or more years. Then the minimum cumulative duration requirement would not be is met (2 years at ISCED3C + .5 years at ISCED4 = 2.5 years cumulative duration --- less than the comparable ISCED 3A and 3B courses). The programme in the second example would not meet the criteria for being classified at ISCED 4 and should be classified at ISCED 3.

15.2 SUB-CATEGORIES AT THIS LEVEL

Type of subsequent education or destination. Level 4 programmes are sub-classified according to the destination for which the programmes have been designed to prepare students.

- *ISCED 4A*: programmes at level 4, designed to provide direct access to ISCED 5A;
- *ISCED 4B*: programmes at level 4, designed to provide direct access to ISCED 5B;

- *ISCED 4C*: programmes at level 4 designed to prepare students for direct entry into the labour market, although they also provide access to other ISCED 4 programmes. Apprenticeships that are designed for students who have already completed an ISCED 3 (Upper secondary programme) would fall into this category unless the programme was primarily designed to prepare students to enter ISCED 5.[10]

Programme orientation. Programmes at level 4 can also be subdivided into three categories based on the vocational emphasis of the programme:

- Type 1 (general): Education which is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational or technical education programmes. Less than 25 percent of the programme content is vocational or technical.

- Type 2 (pre-vocational or pre-technical): Education which is mainly designed to introduce participants to the world of work and to prepare them for entry into further vocational or technical education programmes. Successful completion of such programmes does not lead to a labour-market relevant vocational or technical qualification. For a programme to be considered as pre-vocational or pre-technical education, at least 25 per cents of its content have to be vocational or technical.

- Type 3 (vocational or technical): Education which prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

15.3 EXAMPLES

Several types of programmes can fit into level 4. The first type are short vocational programmes where either the content would not be considered "tertiary" in many OECD countries or the programme does not meet the duration requirement for ISCED 5B (at least 2 years FTE since the start of level 5). These programmes are often designed for students who have completed level 3, although a formal ISCED level 3 qualification may not be required for entry. The second type of programmes are nationally considered as upper secondary programmes, even though entrants to these programmes typically have already completed another upper secondary programme (i.e. second-cycle programmes). Examples of these types of programmes:

15.3.1 POST-SECONDARY, BUT NOT TERTIARY PROGRAMMES FROM AN INTERNATIONAL PERSPECTIVE

15.3.1.1 ISCED4B, TYPE 3 (VOCATIONAL OR TECHNICAL)

Trade Technician / Trade Supervisory (Australia) Programmes classified nationally to Stream 3300, provide initial education and training in skills at a level higher than trade or trade-equivalent skills (which would be learned in an ISCED level 3 programme). Stream 3300 courses may include

[10] In the "Levels of Education" framework approved by the UNESCO Executive Board (151 EX/8 Annex II, March 1997), level 4 is divided into two subcategories: 4A and 4B. In order to maintain parallel structure to the educational and labour market destinations at level 3, it is proposed that level 4 be split into 3 categories: 4A, programmes designed to provide direct access to ISCED 5A; 4B, programmes designed to provide direct access to ISCED 5B; and 4C, programmes not designed to lead directly to ISCED 5A or 5B. Programmes at level 4C, then, lead directly to labour market or other ISCED 4 programmes. This proposal will be introduced at the UNESCO ISCED Task Force for approval.

skills needed for supervision, but do not provide the level of breadth of specialisation that is provided through courses for para-professionals. Examples of Stream 3300 courses are Advanced Certificates in Plumbing and other trades, Advanced Certificates in Laboratory Technology. Most courses require completion of a trade certificate course (ISCED 3), though some programmes allow for entry following completion of Upper Secondary (general).

Schulen für Gesundheits- und Krankenpflege (Austria). Three years programmes consisting of theoretical and practical courses, and leading to a diploma in the following fields: nursing, medical and various related subjects, law, psychology… These programmes are open to pupils who have successfully completed the tenth year of education (ISCED 3C). Upon completion of these programmes, students have completed one more year of schooling than graduates from ISCED 3A programmes.

15.3.1.2 ISCED4C, TYPE 3 (VOCATIONAL OR TECHNICAL)

Mittlere Speziallehrgänge (Austria). One year specialised courses designed for people who have completed initial vocational education; aim at imparting specialised theoretical and practical knowledge. The minimum entry requirement is an ISCED 3B qualification and the typical entry age is 17.

Trade and vocational certificates (Canada). Trade / Vocational Certificate (1 year), Trade / Vocational Certificate (1-2 years), Vocational Certificate Programme (less than 1 year). These programmes are allocated to this level, as they do not meet the duration criteria associated with level 5B. They range from "pre-vocational / trade" orientation, to programmes designed for people already in the work world that would like to improve or develop new skills in their occupational areas.

Vocational preparation and training II (PLC) Yr 1 & 2 (Ireland). These courses offer a range of one-year and two-years vocational training programmes directed at upper secondary completers. These programmes lead to the NCVA Level 2 Award.

Formazione professionale (post-maturità) regionale o scolastica (Italy). This programme, which follows on upper secondary education, is a preparation for highly skilled jobs in various sectors of the economy. The courses are mainly practical in content. On completion of this variable-length programme, students may obtain a certificate of attendance or, if they pass an examination, they are awarded a certificate of vocational qualification. This programme is not part of the national educational system. The typical entry ages are between 19 and 21.

Ausbildung für Krankenpflege, formation pour les professions de la santé (Switzerland). Vocational programmes for the health professions which have a minimum entrance age of 18. Not all schools require a completed ISCED level 3 programme as an entrance requirement, and there is a lively national debate on whether the content of these programmes would allow them to be classified as tertiary.

Vocational certificate (United States). Programmes of up to two years duration offered in for-profit, private institutions, community colleges and universities that lead to an occupationally specific vocational certificate. Typical entry ages for the programme are between 18 and 30.

15.3.2 UPPER SECONDARY, SECOND-CYCLE PROGRAMMES

15.3.2.1 ISCED4A, TYPE 1 (GENERAL)

TIF-kurser / værkstedskurser (Denmark). Half-year practical admittance courses for programmes at ISCED 5B.

Upper secondary evening schools (Germany). Three-years general programme for adults. Admission requirements include: minimum age 19, completion of vocational training or at least 3 years work experience. Successful graduates of this programme earn the *Abitur (Hochschulreife)* and are entitled to enter ISCED 5A programmes.

Berufsmaturität nach der Lehre, maturité professionnelle après l'apprentissage (Switzerland). Programmes offering the additional general subjects required for the *maturité professionnelle*. They can only be attended by students with a completed three or four years apprenticeship and last one year, giving a complete duration of four or five years after the beginning of ISCED level 3.

15.3.2.2 ISCED4A, TYPE 3 (VOCATIONAL OR TECHNICAL)

Gewoon secundair onderwijs - 3de leerjaar van de 3de graad BSO (Flemish Community of Belgium). The 3rd year of the 3rd stage of vocational secondary education. This specialisation year gives access to higher education.

Nástavbové studium (Czech Republic). Extension courses. Students who earned a vocational education in a 3-years programme in order to enter the labour market can re-enter the secondary school once more for a secondary education with *maturita*. Students have, therefore, a higher level of education in the labour market and this qualification also enables them to enter into higher education institutions after passing an entrance examination.

15.3.2.3 ISCED4B, TYPE 3 (VOCATIONAL OR TECHNICAL)

Berufsschulen/Duales System (Germany). Special form of apprenticeship (second cycle) which comprises education and training both at a vocational school and in an enterprise. Students must have completed an ISCED 3B programme for entry. Graduates qualify for *Fachoberschulen* (4A), *Fachschulen* (5B) or for entry into the labour market.

Berufliche Zweitausbildung auf Sekundarstufe II - Second vocational programmes at upper secondary level (1 year) (Switzerland). Short vocational programmes are offered for holders of the "*maturité gymnasiale*" (mainly in business administration) and the final exam is considered to be equivalent to a vocational education at ISCED level 3B.

15.3.2.4 ISCED4C, TYPE 3 (VOCATIONAL OR TECHNICAL)

Erikoisammattitutkinto (Finland). Specialist vocational qualification. A demonstration examination which is taken usually after some years of work experience (for example in crafts and technical skills). Participants must have completed ISCED 3 or have equivalent skills.

16. ISCED 5 -- FIRST STAGE OF TERTIARY EDUCATION

ISCED 5 programmes have an educational content more advanced than those offered at levels 3 and 4. Entry to these programmes normally requires the successful completion of ISCED level 3A or 3B or a similar qualification at ISCED level 4A or 4B. Programmes at level 5 must have a cumulative theoretical duration of at least 2 years from the beginning of level 5 and do not lead directly to the award of an advanced research qualification (those programmes are at level 6). Programmes are subdivided into 5A, programmes that are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements, and into 5B, programmes that are generally more practical / technical / occupationally specific than ISCED 5A programmes.

17. ISCED 5A

17.1 DEFINITIONS AND CLASSIFICATION CRITERIA

The curriculum of programmes at this level has a strong theoretical foundation, emphasising the liberal arts and sciences (history, philosophy, mathematics, etc.) or preparing students for professions with high skills requirements (e.g. medicine, dentistry, architecture, etc.). As the organisational structure of tertiary education programmes varies greatly across countries, no single criterion can be used to define boundaries between ISCED 5A and ISCED 5B. The following criteria are the minimum requirements to classify a programme as ISCED 5A, although programmes not satisfying a single criterion should not be automatically excluded.

Programmes at level 5A:

- have a minimum cumulative theoretical duration (at tertiary level) of **three** years,' full-time equivalent, although they are typically 4 or more years. If a programme has 3 years' full-time equivalent duration, it is usually preceded by at least 13 years of previous schooling at the primary and secondary level. For systems in which degrees are awarded by credit accumulation, a comparable amount of time and intensity would be required;

- provide the level of education required for entry into a profession with high skills requirements or an advanced research programme;

- typically require that the faculty have advanced research credentials. This criterion is not meant to draw an institutional boundary, that is, 5A programmes do not have to take place in the same institutions in which advanced research degrees are awarded (e.g. universities). In general, the faculty in 5A programmes should be qualified to teach students at a level that can prepare them to enter an advanced research programme or for entry into a profession with high skills requirements.

- may involve completion of a research project or thesis.

When programmes meeting the above criteria are organised and provide sequential qualifications it is often the case that only the last qualification gives direct access to level 6, although each of the programmes in this sequence should be allocated to level 5A. For example, although many Ph.D. programmes in the United States may require that a student earn a Master's degree prior to entry, the Bachelor's degree would still count as an ISCED 5A qualification.

17.2 SUB-CATEGORIES AT THIS LEVEL

Cumulative theoretical duration. ISCED 5A programmes can be sub-classified by their theoretical cumulative duration. 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 programmes that require completion of other tertiary programmes prior to

admission (see national degree and qualification structure below), cumulative duration is calculated by adding the minimum entrance requirements of the programme (i.e. full-time equivalent years of tertiary education prerequisites) to the full-time equivalent duration of the programme. For degrees or qualifications where the full-time equivalent years of schooling is unknown (i.e. courses of study designed explicitly for flexible or part-time study), cumulative duration is calculated based on the duration of more traditional degree or qualification programmes with a similar level of educational content.

Duration categories[11]:

⇒ Short: 2 to and 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, less than 3 years programmes must be a component or a stage of a longer programme in order to be classified at level 5A. Individuals who complete these intermediate programmes would not be counted as 5A graduates, however.

Theoretical versus typical duration. In some countries the theoretical duration of a programme does not accurately reflect the amount of time that it takes for a typical full time student to complete. This is particularly the case where theoretical duration has a legal basis (e.g. it is tied to the amount of time students receive a subsidy) rather than a credit or course hour requirement. In cases where the theoretical duration is thought to be distortionary, that is, reflects a requirement laid out in law but not the reality, the typical duration may be used as a proxy for theoretical duration in assigning a programme to the above duration categories.

National degree and qualification structure. This dimension cross-categorises ISCED 5A and 5B qualifications by their position in the national qualification structure for tertiary education within an individual country. The main reason the national degree and qualification structure is included as a separate dimension is that the timing of these awards mark important educational and labour market transition points within countries. For example, in Australia, Canada, New Zealand, and the United Kingdom students who complete a three years Bachelor's degree have access to a wide range of occupations and opportunities for further education. On the contrary, Austrian or German students only obtain a labour market relevant qualification after completion of a full five-years degree, even though the level of content of the latter programme may be similar to that of a second (Master's) degree programme in many English-speaking counties.

The 'position' of a degree or qualification structure is assigned (intermediate, first, second third, etc.) based on the internal hierarchy of awards within national education systems. For example, a first theoretically-based degree or qualification (cross-classifying 'theoretically-based' type of programme 5A with 'first' in the national degree and qualifications structure) would necessarily meet all of the criteria listed above for a theoretically-based programme and lead to the first important educational or labour market qualification within this type of programme. It is only by combining national degree structure with other tertiary dimensions, such as cumulative theoretical duration and

[11] These duration categories differ slightly from the categories described in ISCED-97, which are 2 and less than 3 years; 3 and less than 4 years; 4 and less than 5 years; 5 and less than 6 years; 6 years and more. The categories described in this OECD implementation Manual have been designed to group ISCED 5 programmes with similar levels of educational content and are considered to be the categories that would most likely be employed in a data collection.

programme orientation, that enough information is available to group degrees and qualifications of similar education content.

Categories:

- Intermediate[12];
- First;
- Second and further.

Bachelor's degrees in many English-speaking countries, the '*Diplom*' in many German-speaking countries, and the '*Licence*' in many French-speaking countries meet the content criteria for the first theoretically-based programmes. Second and higher theoretically based programmes (e.g. *Master's degree* in English-speaking countries and *Maîtrise* in French-speaking countries) would be classified in ISCED 5A separately from advanced research qualifications, which would have their own position in ISCED 6.

17.3 SPECIFIC CLASSIFICATION ISSUES

ISCED 5A intermediate qualifications -- where do they go? ISCED-97 requires ISCED 5A first degrees to have a minimum 3 years full-time equivalent duration. ISCED 5A intermediate was developed explicitly because some countries have shorter programmes in the 5A trajectory, which were not considered long enough to be comparable to the majority of 5A qualifications -- including the *DEUG* in France, *Laurea Breve* in Italy and the *University Transfer Programme* in Canada. Qualifications that are awarded for less than 3 years FTE study at ISCED 5A are, from an international perspective, to be considered intermediate qualifications. No information on the award of intermediate qualifications will be collected in the UOE data collection, and thus, no 2-years awards should be included in the graduate data (e.g. the *DEUG* and 2-years *Laurea Breve*, should not be included). In principal, we could collect and report 5A intermediate graduates, although the reporting might get a bit confusing, as most countries do not have intermediate qualifications and, in most cases, the intermediate qualification are often not required for progressing on to earn the 1st 5A degree.

This procedure is, however, not sufficient to classify individuals according to their level of educational attainment. From a Human Capital perspective, individuals who have earned a 5A intermediate qualification are likely to have a higher level of skill than a ISCED3 completers. It would also be quite strange, from the point of view of similar programme content, for them to be placed in either ISCED 5B (even though this might be considered the point at which most are nationally "equivalent") or at ISCED 4. From an educational attainment perspective, there are at least two main options:

1. classification at ISCED3 (reflecting the last completed level of educational attainment in the ISCED framework);

2. specific classification in a category for intermediate 5A qualifications (which could then be combined with either ISCED3, 4, 5B, or 5A, depending on analytical purpose).

The INES Technical Group concluded that the latter solution be recommended to Network B for the collection of educational attainment data by ISCED-97.

[12] Although ISCED-97 does not specifically mention "intermediate" qualifications at ISCED 5A, it is introduced in this document as a means of classifying ISCED 5A programmes that do not meet the duration requirements for their completion to be counted as an ISCED 5A graduation. Examples include the University Transfer Programme in Canada and the *Laurea Breve* in Italy.

Programmes that span the boundary between ISCED 3 and ISCED 5. Primary teacher education in Switzerland is an example of a programme that spans the boundary of education levels 3 and 5B. This programme requires a lower secondary qualification for entry, has 5 years duration, and awards a qualification that is nationally deemed as equivalent to other qualifications at the ISCED 5B level. For programmes of this type, the enrolment should be apportioned across the two levels and the number of students that would have received an ISCED 3 qualification, had the programme given this option at the midway point, should be estimated for the calculation of graduates.

Post-graduate diplomas. ISCED-97 states that ISCED level 5A programmes are tertiary programmes that are largely theoretically based and are intended to provide sufficient qualifications to gain entry into advanced research programmes and professions with high skills requirements. Post-graduate diplomas are qualifications that are earned in some countries after the successful completion of a 5A programme. The programmes are often geared to broaden or specialise one's knowledge at a particular level (e.g. pedagogy, urban planning), although they do not directly lead to an advanced research programme. For example, in Canada, post-graduate certificate programmes are for students who have already completed a Bachelor's degree (1st ISCED5A qualification of medium duration) or higher academic certificate. The content covered in this programme includes 3rd and 4th year undergraduate courses as well as graduate courses. Depending on the institution offering the programme and the subject field being pursued, completion of this programme may involve a research project. Its completion leads to the awarding of a certificate or diploma that is subsequent to a first degree at level 5A. These qualifications should be counted as ISCED 5A if they require a 5A qualification for entry and build on the knowledge gained in the 5A programme. It is not necessary that these programmes lead directly to an advanced research qualification.

Requirements for classification at ISCED 5A, second programmes. The preliminary ISCED-97 country mappings indicate that there is a wide variability in the length of programmes being classified as ISCED 5A (2nd). In Australia for example, the Graduate Certificate (.5 years FTE), Bachelor's Graduate Entry (1 year FTE), Graduate Diplomas (1.5 years) and Master's degrees (2 years FTE) are all proposed to be classified as ISCED 5A (2nd) programmes. This variability in duration can lead to wide variation in the cumulative duration of programmes at ISCED 5 leading to as second qualification.

In order to improve the comparability of data reported under ISCED-97, the following criteria for classification at ISCED 5A 2nd are introduced:

1. ISCED 5A 2nd programmes require an ISCED 5A first qualification (or equivalent level of educational content) for entry. The programme should be at a significantly higher level of educational content than ISCED 5A first programmes. Programmes that are designed to allow students to earn a qualification in a different field from their first 5A qualification should not be classified as ISCED 5A 2nd programme if the curriculum is broadly similar to the curricular offered in first programmes. For example, if the programme content of graduate certificate in accounting is generally similar to the level of curriculum offered in a 1st 5A course in accounting, then the certificate programme should be mapped to 5A, 1st rather than to 5A 2nd.

2. If a country cannot separately report ISCED 5A (2nd) degrees by cumulative duration, second programmes should be excluded from the UOE data collection on graduates. This second recommendation would also pertain to the collection of data on educational attainment.

Degrees in medicine, dentistry, and veterinary medicine. First degrees in medicine, dentistry, and veterinary medicine should be classified at level 5A, unless they met the research requirements at ISCED level 6. It is unlikely, however, that many first degrees in these fields will meet the advanced research requirements of ISCED 6.

Advanced qualifications (or "specialist" degrees) in these fields should also be classified at level 5A, unless they meet the research requirements at level 6. There is wide variability in the degree

to which programmes of this type have a substantial research component. There is apparently also a wide variability in the degree to which qualifications of this type would come under the coverage of the collection of education statistics. In Germany for example, these specialist qualifications would be considered professional qualifications (rather than educational qualifications) and would not be counted in educational statistics, while in France and Switzerland these would be considered as educational qualifications and would be counted. For individual data collections, it will need to be considered whether or not the collection of specialist degrees in these fields can lead to comparable results across countries. In general, however, these qualifications should only be classified at ISCED level 6 if they meet the advanced research guidelines outlined for ISCED 6. In most cases, specialist degrees in these fields would be classified at level 5A.

Research Qualifications at ISCED 5A. ISCED-97 also allows for the separate categorisation of programmes leading to the award of a research qualification at the 5A level. This category is intended for the countries which have a sub-doctoral research qualification, designed explicitly to prepare recipients to conduct original research. These programmes often meet many criteria of an ISCED 6 programme, although they tend to be of shorter duration (5 to 6 years cumulative FTE duration from the start of tertiary) and typically lack the level of independence required of students seeking an advanced research qualification. Examples of 5A research degrees include the *Research Master's degree* in Australia, Ireland, New Zealand, and the United Kingdom. As many long ISCED 5A programmes have a research component even though they are not explicitly designed to prepare participants for research positions, it is likely that 5A research qualifications and long 5A programmes be grouped for analytical purposes.

17.4 EXAMPLES

17.4.1 ISCED5A, SHORT, INTERMEDIATE

University Transfer Programmes (Canada). These are programmes of one or two-years duration offered by non-university institutes under special arrangements with the universities whereby the college offers the first year(s) of a university degree programme. Students who complete the programmes at the colleges can then transfer their credits to university *Bachelor degree* programmes. Although enrolments in these programmes count at ISCED 5A, students who complete these programmes are not counted as ISCED 5A graduates.

17.4.2 ISCED5A, MEDIUM, 1ST QUALIFICATION

Programmes in polytechnics (ammattikorkeakoulu) (Finland). Programmes (3.5 to 4.5 years) that prepare for occupations with high skill requirements. These programmes combine theoretical studies (basic and professional studies) with work and practical training. They involve the completion of a large research project or thesis. Students must have completed ISCED 3A prior to entry.

Licence (France). This programme unit, the licence year, follows the 2 years of the *Diplôme d'études universitaires générales (DEUG).* For the purpose of ISCED classification, the *DEUG* is considered an intermediate qualification and all three years of the combined programmes are allocated to the licence. Students can also enter the licence year, however, after completing a *Diplôme Universitaire de Technologie* (DUT) at a University Institute of Technology (IUT) or after completing the preparatory course for entry into the *grandes écoles* (CPGE). As the DUT is primarily designed to prepare students for direct labour market entry, and not for transferring to a university, enrolment in DUT programmes are classified at ISCED 5B. The licence is earned in a university.

Hoger beroepsonderwijs (Netherlands). In these four-years higher vocational education (HBO) programmes, teaching is of a more practical nature than in the universities. The most common fields studied are agriculture, teacher education and training, social work and community education, health

care and the arts. HBO graduates can be admitted to the *promotie*, the procedure to obtain a *doctoraat* (an ISCED 6 qualification).

Høgre utd. lavere grad (Norway). These are 4-years degree programmes leading to *Candidatus magisterii, allmennlærer*, or *siviløkonom*. They can serve as the first part of a longer degree programme or as a more vocationally-aimed independent education.

Diplomatura Universitaria (Spain). Three-years professional training courses leading to the *Diplomado Universitario, Arquitecto Técnico* or *Ingeniero Técnico* in a particular field. Holders of these qualifications may enter professional practice or obtain admission to second-stage higher education.

Fachhochschule, haute école spécialisée (Switzerland). This type of programme was officially inaugurated in 1998. It requires a *"Berufsmaturität / maturité professionnelle*" (ISCED 3A vocational education of three or four years duration with a substantially enlarged general education part) for entry, lasts three or four years, and prepares for highly skilled professions such as architecture, engineering, business administration or design. Other fields will follow.

Bachelor's degree programme (United Kingdom). First degree, awarded usually after three years of study (although 5 years is common in medicine and related fields). There are two kinds of bachelor's degrees. The first type is the honours degree, which is at a higher level than the second type and usually comprises the study on one main and one subsidiary subject only. The second type is the ordinary or pass degree, study for which may included several subjects (often three) and which the depth of studies is not carried to the degree of specialisation required for the honours degree. Students usually have to satisfy examiners in a series of annual examinations or by a system of continuous assessment, as well as sit for a final degree examination.

Bachelor's degree programme (United States). Typically a 4-years programme undertaken at colleges or universities. These undergraduate programmes typically require a high school diploma or equivalent for entry. Bachelor's degree recipients can enter the labour force or pursue their education in graduate (Master's or Ph.D.) or first-professional (law, medicine, dentistry) degree programmes.

17.4.3 ISCED5A, MEDIUM OR LONG, 1ST QUALIFICATION

Enseignement des écoles de commerce leading to *Diplôme d'ingénieur commercial* (France). There are different types of commercial and business *grandes écoles*. They recruit from the *classes préparatoires aux grandes écoles* (CPGE) or from the universities (*licence, maîtrise*). Enrolment in the CPGE should also be classified as ISCED5A.

Corsi di Laurea (Italy). University-level studies generally last from four to six years, depending on the field of study. At the end of the course, successful candidates in the final examination (*esame di laurea*) become holders of the *laurea* diploma and are awarded the title of *dottore* (Dott.).

Daigaku Gakubu (Japan). A university undergraduate programme. The *gakushi* is the first qualification awarded after four years of study in most subjects (six years in medicine, veterinary medicine and dentistry). In addition to study in a specialised field, general education (which include humanities, social and natural sciences) is compulsory for all students. At the end of each semester, candidates must take an examination in each subject, usually in the form of written tests, and sometimes as research progress reports.

Bachelor's degree programmes (Mexico). The requirement to enter this programme is the successful completion of 12 years of schooling. Bachelor's degrees can be earned in universities, technological institutes, or teacher training schools. The duration depends on the field of education: 4 to 5 years (6 years in some cases, like medicine). Four-years bachelor's degree programmes should be allocated to ISCED 5A medium and 5 to 6 years programmes allocated to ISCED 5A long.

17.4.4 ISCED5A, MEDIUM AND LONG, 1ST AND 2ND QUALIFICATION

University programmes (Czech Republic). The typical length of university programmes has traditionally been 5 years (the first qualification being the Master's). Recently, a shorter Bachelor's programme has been introduced, which is either more practically oriented or serves as a first stage of a five-years university programme. In principle, both the Bachelor's and the Master's degree can be first qualifications, as not all students earn the Bachelor's degree prior to earning the Master's degree. In several programmes like medicine, architecture and veterinary medicine, the length of the programme is 6 years. Studies to train teachers for basic school, 1st stage (primary level) last four years. University study ends with the defence of a thesis and the passing of state exams. University graduates receive the titles of Bachelor, Master or Engineer, while graduates of medical and veterinary faculties receive the title of Doctor.

Lange videregående uddannelser, kandidatuddannelser (Denmark). Long-cycle tertiary education leading to the degree of *candidat*, which is awarded to students who have passed the final examination after studies lasting four-and-a-half to six years, or to a professional title (civil engineer) after five years. In some fields, students may acquire a bachelor of arts' degree after three years of study. The *candidat*is a first or second degree depending on whether or not an individual student earned a bachelor's degree first.

17.4.5 ISCED5A, LONG, 1ST QUALIFICATION

Bachelor's degrees in professional areas (Australia). Undergraduate studies lasting between 5 (veterinary science, dentistry, architecture) and 6 years (medicine and surgery), and leading to a Bachelor's degree.

Fachhochschulen (Germany). Programme (4 or 5 years) at the university level that prepares for occupations requiring the application of scientific findings and methods. Students must at least have completed *Fachoberschule* (ISCED 3A or 4A) or equivalent. Leads to a first degree, *Diplom* (FH).

17.4.6 ISCED5A, LONG OR VERY LONG (DEPENDING ON PARTICULAR PROGRAMME), 1ST QUALIFICATION

Universitäten (Germany). Programme at universities (i.e. in academic disciplines) of 5 to 7 years that prepares for occupations which requiring the application of scientific knowledge and methods. Students must have completed ISCED 3A. First degree. Graduates may enter ISCED 6.

17.4.7 ISCED5A, LONG AND VERY LONG, 2ND QUALIFICATION

Master's degree (Australia). Higher degree, obtained after a period of typically two years following upon a bachelor's degree (honours). Following upon a bachelor's degree (pass), entry to a master's degree may be obtained by completing a master's qualifying course of one year. Master's degrees may be obtained by research (usually entered after a period of employment) culminating in the submission of a thesis or by course-work often undertaken in conjunction with professional employment.

Daigakuin Shushi katei (Japan). A university graduate programme leading the *shushi* (master's degree). Completion of the *shushi* degree requires two years of full-time study (at least 6 years cumulative at the tertiary level) after the *gakushi*. It includes 30 credit hours and a substantial amount of research culminating in a thesis.

Master's degree programmes (Mexico). This programme involves advanced research and complete knowledge about specific subjects and fields of study. The duration of the programme is commonly 2 years. The entry requirement is a 4 or 5 years Bachelor's degree programme.

Universität Nachdiplom, troisième cycle, diplôme postgrade or *Fachhochschule Nachdiplom, haute école spécialisée diplôme postgrade* (Switzerland). After the first degree, universities offer specialisation programmes not leading to a research degree. They generally last one or two years. Some examples are

specialisation in urban planning, in health care management or in environmental studies. The *"Fachhochschulen"* also offer programmes for specialisation after the first degree. They typically last one year. Examples include business administration for engineers or specialisation in environmental aspects for chemical engineers. The cumulative duration at ISCED 5 ranges from 4 to 6.5 years, depending on the specific programme.

First-professional degree programmes (United States). Completion of these programmes signifies both completion of the academic requirements for beginning practice in a given profession and a level of professional skill beyond that normally required for a Bachelor's degree. These degree programmes typically require at least two years at ISCED 5A prior to entrance (although most require a 4-years Bachelor's degree) and a cumulative total of between 6 and 8 years of full-time equivalent study at ISCED 5A to be completed. First professional degrees are awarded in dentistry, medicine, optometry, pharmacy, veterinary medicine, law and theological professions.

18. ISCED 5B

18.1 DEFINITIONS AND CLASSIFICATION CRITERIA

ISCED 5B programmes are generally more practically / technically / occupationally specific than ISCED 5A programmes. Qualifications in category 5B are typically shorter than those in 5A and focus on occupationally specific skills geared for direct entry into the labour market, although some theoretical foundations may be covered in the respective programme.

A 5B programme typically meets the following criteria:

- it is more practically oriented and occupationally specific than programmes at ISCED 5A and does not prepare students for direct access to advanced research programmes;
- it has a minimum of **two** years' FTE duration. For systems in which qualifications are awarded by credit accumulation, a comparable amount of time and intensity would be required;
- the programme content is typically designed to prepare students to enter a particular occupation.

18.2 SUB-CATEGORIES AT THIS LEVEL

Cumulative theoretical duration. Like ISCED 5A programmes, 5B programmes can be subdivided based on the cumulative theoretical full-time equivalent duration from the beginning of level 5. Calculation of the cumulative theoretical duration is done similarly to 5A programmes (see description above).

Duration categories:

- Very short: Less than 2 years;
- Short: 2 to and less than 3 years;
- Medium: 3 to less than 5 years;
- Long: 5 to 6 years;
- Very long: More than 6 years.

As "very short" programmes would not meet the minimum duration requirement for classification at ISCED 5B, this category is only appropriate for intermediate programmes in the national qualification and degree structure (see below). That is, less than 2 years programmes must be a component or a stage of a longer programme in order to be classified at level 5. Individuals who

complete these intermediate programmes would not be counted as 5B graduates, however. Most ISCED 5B programs would fall into the short and medium categories.

National degree and qualification structure. As with 5A programmes, this dimension cross-categorises 5B qualifications by their position in the national qualification structure for tertiary education within an individual country.

Categories:

- Intermediate;
- First;
- Second and further.

18.3 EXAMPLES

18.3.1 ISCED5B, SHORT, 1ST QUALIFICATION

3400 Initial Vocational Courses: Paraprofessional - Technician (Australia). Para-professional / Technician courses classified to Stream 3400 are designed to provide initial education and training to develop the breadth of specialised skills required for employment in para-professional vocations. Common awards are Associate Diploma or Advanced Certificate, and entry requirements usually specify that entrants hold a Certificate in the relevant field. Courses are generally of the order of 2 years FTE duration.

Kollegs (Austria). Two-years, post-secondary courses in technical and vocational education (TVE). This programme is designed to provide the holders of a long type secondary education diploma (ISCED 3A) or a technical and vocational education diploma (especially general education) with vocational qualifications similar to those acquired in secondary technical and vocational college.

Vocational colleges (ammatillinen opisto) (Finland). Advanced vocational programmes (2 to 3 years) leading to the Diplomas or the title of Technician Engineer.

Enseignement en institut universitaire de technologie (IUT) (France). A two-years programme in technology leading to the *Diplôme universitaire de technologie* (DUT). Holders of a DUT may continue in university studies to earn the *licence* (a 1st ISCED5A qualification), although the programme is primarily designed to prepare students for direct labour market entry. The entry qualification is the *baccalauréat*, complemented by an academic record submitted for assessment by the admissions board.

Enseignement des classes des sections de techniciens supérieur (sous statut scolaire) (France). A two-years programme leading to the *Brevet de technicien supérieur* (BTS). The admission requirement is the *baccalauréat* or the *brevet de technicien* complemented by a satisfactory school record. Holders of a BTS may, under certain conditions, pursue their studies at university or in higher schools. This qualification is at the same level as the DUT, although it is more specialised and offers fewer opportunities for further studies.

Vocational Associate Degree programmes (Mexico). These programmes are offered in Technological Universities. Graduates from these 2-years programmes are considered qualified technicians.

Ciclos Formativos de Formación Profesional de Grado Superior (Spain). Specific Vocational Training-Advanced Level leading to the qualification *Técnico Superior*. This programme offers structured training through which the skills, abilities and knowledge needed in a specific occupation can be acquired. The qualifications obtained on completion of training are equivalent to those of a

skilled technician in that occupation. Admission is based on successful completion of the *bachiller* (ISCED 3A).

Höhere Fach- und Berufsschule, école technique (Switzerland). Programmes lasting at least two years of full-time school. The typical prerequisite is a vocational education of at least three years or an equivalent general education at ISCED level 3. The programmes prepare for a variety of skilled professions such as technician, manager in tourism or the lower echelons of upper business management.

Higher National Diploma (United Kingdom). To be admitted to this programme participants must be at least 18 and have an appropriate national qualification awarded by the BTEC [Board for commercial and technological education] or equivalent or a GCE A level. The aim is to develop skills and provide training that will lead to many vocational activities. The training is designed to meet employers' needs. It is provided by colleges, certain universities and some training centres. It generally leads to the level of senior technician or junior management. The duration is either two years full time or three years part time.

18.3.2 ISCED5B, SHORT AND MEDIUM, 1ST QUALIFICATION

2-3 years college; 3-4 years college; Occupational / Technology programmes; Vocational Diploma (27 months) (Canada). These are technical programmes designed to prepare students for direct entry into the labour force and last two, three or four years. These programmes do not provide access to advanced research programmes. The admission requirements for eligibility into these college programmes are completion of high school (ISCED 3), eligibility as a mature student or the completion of a certain level of Adult Upgrading programmes.

Fachschulen - 2 to 4 jährig (Germany). Advanced vocational programmes of 2 to 4 years duration. Attended after completion of the Dual System and several years of work experience to obtain master's / technician's qualifications or to qualify for occupations in the social sector.

18.3.3 ISCED5B, MEDIUM, 1ST QUALIFICATION

Bakalárské univerzitní studium (Czech Republic). Three-years university programme leading to the *bakalár* (bachelor's degree). Programmes that do not give direct access to *magistr* or *inzenýr* programmes (Master's) are classified at ISCED 5B, while programmes providing direct access to *magistr* or *inzenýr* programmes are classified at ISCED 5A

Hogescholenonderwijs van 1 cyclus (Flemish Community of Belgium). First-cycle of higher education provided by *hogescholen*. These 3- to 4-years programmes usually last three years and lead to a final diploma that qualifies the holder for immediate employment. Qualifications are awarded in nursing, social work, librarianship, engineering, and teaching.

College of public administration / Verwaltungsfachhochschulen (Germany). Special type of "*Fachhochschulen*" run by the public administration to provide training for medium-level, non-technical careers within the public sector. Entrants must hold a qualification that would allow them to enter ISCED 5A. Designed for direct entry into civil service.

Schulen des Gesundheitswesens - 3 jährig (Germany). School-based vocational education (3 years) for nurses, midwives, etc. Often, these schools are associated with hospitals where training is provided in theory and practice. Designed for direct labour market entry.

Diploma programmes (New Zealand). Vocationally oriented 2- to 3-years (cumulative) programmes leading to Diplomas and National Diplomas (levels 5,6).

Foreign language teacher training college (Poland). A three-years programme leading to a qualification to teach West European languages (English, German and, to a limited degree, Spanish) at pre-school institutions, primary schools and secondary schools. Requires the secondary school leaving certificate, *matura*, for entry.

18.3.4 ISCED5B, MEDIUM, 2ND QUALIFICATION

Stream 3600 - Initial Vocational Courses - Professional (Australia). Initial Vocational Courses - Professional are classified to Stream 3600 and provide initial education and training at a higher level than para-professional courses, and include courses that lead to employment in vocations comparable to those entered by graduates of Diploma (UG2) courses. Awards are typically Advanced Diploma and entry requirements are usually completion of a Diploma or equivalent course. Courses are commonly of about 2 years FTE duration in addition to the pre-requisites. Examples include Advanced Diplomas in Information Technology or in Rural Management.

19. ISCED 6 - SECOND STAGE OF TERTIARY EDUCATION (LEADING TO AN ADVANCED RESEARCH QUALIFICATION)

19.1 DEFINITIONS AND CLASSIFICATION CRITERIA

This level is reserved for tertiary programmes that lead directly to the award of an advanced research qualification. The theoretical duration of these programmes is 3 years full-time in most countries (for a cumulative total of at least 7 years FTE at the tertiary level), although the actual enrolment time is typically longer. The programmes are devoted to advanced study and original research.

For a programme to be classified at ISCED 6, it:

- Requires, for successful completion, the submission of a thesis or dissertation of publishable quality that is the product of original research and represents a significant contribution to knowledge;
- is not solely based on course-work;
- prepares recipients for faculty positions in institutions offering ISCED 5A programmes, as well as research posts in government and industry.

Although most countries only have a "first" advanced research qualification (e.g. the Ph.D. in the United States), some countries do award an "intermediate" advanced research qualification (e.g. the *Diplôme d'études approfondies* (DEA) in France) and others award a "second" advanced research qualification (e.g. *Habilitation* in Germany and *doktor nauk* in the Russian Federation). Accounting for these intermediate and second awards in the classification scheme is important to define the boundary around the first advanced research qualifications, although they might be ignored in a data collection.

Programmes leading to intermediate research qualifications should either be counted as 1st stage component of level 6 programmes (where completing this component would not count as a level 6 completion) or as level 5A programmes. This allocation decision should be based on the degree to which the programme is designed to lead directly to the award of an advanced research qualification. Programmes that are primarily designed to prepare students for direct labour market entry with either basic or intermediate research skills should be classified at ISCED 5A, even if these programmes also allow students to continue toward an advanced research degree.

19.2 EXAMPLES

19.2.1 ISCED6, INTERMEDIATE STAGE, NO QUALIFICATION

Diplôme d'études approfondies (DEA) (France). Qualification awarded after the first year of preparation for research work, which is compulsory to prepare a *doctorat*. Enrolment to the DEA is open to holders of the *maîtrise* after a selection process among holders of this diploma. While

enrolments in the DEA year are included at ISCED 6, the DEA does not count as an ISCED 6 completion.

19.2.2 ISCED6, 1ST QUALIFICATION

Doctor's degree or doctorate (Australia). These are degrees obtained after a bachelor's degree (high honours) or a master's degree and they usually last three years' full-time. The study is devoted to the preparation of a thesis based on an original research project, and results in a significant contribution to knowledge or understanding and/or the application of knowledge within the field of study.

Doctorat (France). The *Doctorat* is awarded after three years of study following the DEA (8 years of tertiary) in the humanities, science, economics, law, pharmacy and dentistry after the submission of a thesis based on original research acceptable to the *responsable de l'école doctorale* or the *Conseil Scientifique* of the university. Candidates carry out personal research work constituting an original contribution to the subject.

Promotion (Germany). Doctoral studies programme (2 to 5 years). In most cases students must have successfully completed programmes at universities. A doctoral degree is awarded to successful students on the basis of a thesis and oral examination.

Dottorati di ricerca (Italy). This diploma is the highest academic degree awarded. It is granted after a minimum of three years spent in a university department carrying out a specific research programme under the direction of university professors. Admission to the *Dottorati di ricerca* is restricted and is made by competitive examination among holders of the *laurea.*

Hakushi (Japan). The highest degree, awarded to students who have completed a doctorate course at a postgraduate school or have been recognised as holding equivalent qualifications. The requirement for completion of the doctorate course is more than five years of study at a postgraduate school (in addition to 4 years undergraduate), with 30 or more credits, the submission of a dissertation and success in a final examination. Those who have completed highly qualified research work may be awarded the *hakushi* after three years of study in a postgraduate school.

Doctor of Philosophy (Ph.D.) (United States). The Ph.D. is the highest academic degree and requires mastery within a field of knowledge and demonstrated ability to perform scholarly research (three to five years usually beyond the Master's degree--which is 8 to 10 years of tertiary study).

Chapter 3

Instructions concerning the completion of the tables

This chapter provides technical explanations for the completion of tables in addition to the definitions, explanations, and guidelines provided in Chapters 1 and 2 of this binder. Note that instructions concerning the use of the UOE ELECTRONIC QUESTIONNAIRE (design of tables, coding of missing data, provisionnal or estimated data, annotations…) are detailed in the UOE ELECTRONIC QUESTIONNAIRE Manual.

20. TECHNICAL INSTRUCTIONS FOR THE COMPLETION OF SPECIFIC DATA COLLECTION TABLES

20.1 TABLE ENRL-1A

Table ENRL-1a collects data on the total student enrolment by level of education and type of programmes (orientation and destination). The full break-down by age is asked in the table ENRL-1. It is only asked for the total over full-time and part-time students and for full-time students. For part-time students only totals are requested in order to allow cross-checks for unclassified elements

Note that at the pre-primary level there is a distinction made for pre-primary service providers between school establishments and non-school establishments.

20.1.1 SYSTEM LEVEL DATA

Complete the information on the beginning and end of the school year, the data collection period, the reference date for ages, and the theoretical starting and ending, ages as described in Section 0 of Chapter 1.

If there are differences in the school year for different levels of education, and/or different types of educational programmes, these should be recorded in rows S3 and S4 (yellow fields). Note that the default values for the beginning and ending of the school year will be taken from the header.

The data collection period can be different for different levels of education and/or different types of educational programmes (header). Where such differences occur, provide a corresponding note. Note that the default value for the data collection period will be taken from the header.

If data on the theoretical ages are different (and available) by type of educational programme within the levels of education, then these should be reported at the programme level in rows S1-S2(yellow). If data are not available by programme but only by level of education, then

the theoretical ages should be reported in the fields "All educational programmes" of rows S1-S2 (red) and the remaining fields should be coded to "m". Data on theoretical ages that countries have provided in previous data collections are shown below.

For each level and type of educational programme, the number of part-time students that correspond to one full-time student (with respect to student participation) should be recorded in row S5 (yellow fields). Use one decimal place.

References to data sources (including information on the type of source, reference to publication, publication date, publisher); estimation / imputation methods; and to the documentation regarding missing data should be provided in the corresponding green field at the right hand side of the table. Please use the note / comment attachment feature of EXCEL or provide references to the corresponding documents.

References to collection methods should be provided in the corresponding green field at the right hand side of the table. Please use the note / comment attachment feature of EXCEL or provide references to the corresponding documents.

20.1.2 TECHNICAL NOTES ON COMPLETION OF DATA CELLS

If all students are classified by type of institutions, complete the rows for public and private institutions only (rows B1, C5, C9). The totals for all types of education s (rows A1, A5, A10, A12 (yellow)) will then be calculated automatically. Similarly, if data are available for all types of educational programmes at the ISCED levels 3 to 6 and if sum of their sub-categories represents the unduplicated total, then complete the sub-categories only (white cells). Finally, if data are available for independent private institutions and government dependent private institutions and if the sum of these equals the totals for all private institutions, then complete the sub-categories only (white cells).

Please note, that the totals by gender are only collected for all types of institutions. For the educational programmes that have to be reported the table ENRL-1 the totals by gender in ENRL-1a (rows A2,A3 A6,A7) for should be equal to the according rows in ENRL-1 (rows A37, A73, A145 and A181).

All residual categories (age unknown, not allocated by level and unexpected age ranges) have been pre-coded with "not applicable"-codes. Overwrite these only where they should contain non-zero values.

Data providers are asked to enter the number of full-time plus part-time students (head counts) that are in combined school and work-based programmes into row A4.

The number of full-time students in combined school and work-based programmes should be entered into row A8, the number of part-time students (head counts) that are in combined school and work-based programmes into row A11. Please note that in order to distinguish between full-time and part-time students both components of the educational programme, the work-based as well as the school-based should be taken into consideration.

Data providers are requested to report full-time equivalents. The reported number of full-time equivalents should include both, the full-time equivalents of the part-time students as well as the full-time equivalents of the full-time students, which usually is equal to the number of full-time students. ✎ For example, if a country reports 1000 full-time students participating in a programme and 200 part-time students with a study load of 50 per cent, the number of full-time equivalents would be 1100, 1000 full-time equivalents representing the full-time students and 100 full-time equivalents representing the part-time students.

Data providers are requested to provide data for the work-based component of the combined school-and work based programmes for full-time equivalent students enrolled in row

A13. Here only the part of the actual study load that takes place at the work place should be taken into consideration. .

✎ For example, if a programme takes place for 70 per cent of the instruction time at the school and for 30 per cent at the work place and there are 100 full-time students attending this programme, then ALL 100 full-time equivalents (FTEs) should be included in the total of all FTEs, reported in row A12 and the 30 FTEs that take place at the work place should be included in row A13: "Of which work-based component of combined school and work-based programme".

20.1.3 DATA VERIFICATION

The enrolment of ISCED 3 and ISCED 4 is broken down by two independent dimensions, programme destination (A, B, C) and type of programme (general, pre-vocational and vocational). The sum of both dimensions should add up to the same total. For ISCED 3 the sum of columns 13 to 15 should equal the sum of columns 16 to 18. For ISCED 4 the sum of columns 20 to 22 should equal the sum of columns 23 to 25. Any deviation from this rule should be explained.

20.2 TABLE ENRL-1

Table ENRL-1 collects data on the student enrolment by bye age. Data by age are only requested for the total of all institutions for the total of full-time and part-time students and for full-time students. Data by age are also only requested for a limited number of educational programmes.

20.2.1 SYSTEM LEVEL DATA

All system level information has to be added in the table ENRL-1a. Since the table ENRL-1 requests a further break down of data provided in the table ENRL-1a is assumed that all system level information is identical to the table ENRL-1a.

20.2.2 DATA VERIFICATION

Undertake the cross-checks indicated in the second column of the table. If you use formulas for the calculation of totals, check the correctness of the totals (marked in yellow). In particular, check the correctness of the cells that have been marked in red. Ensure that columns 8, 11, 13, 16, 18, 22, and 24 represent unduplicated counts.

Explain any deviations from the following rules:

Table	Row	Column		Table	Row	Column
ENRL-1	A1	All	=	ENRL-1a	A1	1
ENRL-1	A109	All	=	ENRL-1a	A5	1, 2, 5/6 ,7, 8, 12,13/14, 15, 16/17, 18, 19, 20/21, 22, 23/24, 25, 26, 27, 30, 33, 34

20.3 TABLE ENRL-2

Table ENRL-2 aligns the coverage of the data on enrolments, educational finance and educational personnel. It contains data on student enrolment by level of education*type of educational programme (destination and orientation) *type of institution*mode. The rows "aligned to data on educational finance" should be completed with the enrolment statistics for which the coverage of the statistics is reduced to the coverage reported in the tables FINANCE-1

and FINANCE-2. The rows “aligned to data on educational personnel” should be completed with enrolment statistics for which the coverage is reduced to the coverage reported in table PERS-1.

✎ For example, if the statistics on educational finance do not cover expenditures for a particular type of service provider, then the students enrolled in this type of service providers should be excluded from Table ENRL-2. Similarly, if the data on educational personnel do not cover certain types of programmes or delivery mechanism (e.g. distance education), then the students enrolled in these programmes should be excluded from Table ENRL-2.

20.3.1 SYSTEM LEVEL DATA

Complete the information on the start and end of the school year in the table ENRL-1a.

The enrolment data adjusted to educational finance should be according to the same academic year as the data given in the table ENRL-1a and should not be adjusted to the financial year. The information on the start and end of the academic year, the data collection period, and the data sources and data collection methods should be entered in the table ENRL-1a. It is assumed, that the data on educational personnel and the data on enrolment refer to the same reference period, so that the reference period for the data on personnel, as indicated in the table PERS-1, is identical to the one for enrolment, as indicated in ENRL-1a. If the reference periods for data on personnel and enrolments differ, the data in ENRL-2 should be reported according to the reference period for all enrolment data and no adjustment of the enrolment data to the reference period should be done. Please explain differences in the reference periods in a note on the table ENRL-2.

The necessary adjustments of the enrolment figures to the financial year will be done by the OECD using the weighted enrolment data for the two academic years that fall in the financial year. If the reference period for the table ENRL-2 differs from the reference period given in the table ENRL-1a, this should be noted in the header of the table ENRL-2.

20.3.2 TECHNICAL NOTES ON COMPLETION OF DATA CELLS

Data cells for which the coverage between Tables ENRL-1, FINANCE-1, and FINANCE-2, and similarly between Tables ENRL-1 and PERS-1 diverges should be completed with the corresponding reduced enrolment figures. In cases where the coverage of the data on educational finance and educational personnel an explanation should be provided.

Data cells for which the discrepancies are unknown should be coded to “m”.

Students that are classified as ISCED 4 students in the table ENRL-1a but are reclassified as ISCED 3 or ISCED 5 students in the table ENRL-2 should be reported in columns 9 and 21. For details see 3.8.

20.4 TABLE ENRL-3

Table ENRL-3 collects data on the number of students enrolled and the number of repeaters at the primary level , lower secondary level (general programmes) and upper secondary level General programmes) by level of education * sex and grade.

20.4.1 TECHNICAL NOTES ON COMPLETION OF DATA CELLS

At the secondary level of education only enrolment in general educational programmes should be reported.

Grades are counted within levels of education. ✎ For example, at the primary level "Grade 1" refers to the first grade in the primary level of education, whereas at the upper secondary level "Grade 1" refers to the first grade of the upper secondary level of education, which might be the 10th or 11th grade in the school carrier of the students.

Students not classifiable by grade should be reported under "grade unknown".

If in a country different programmes at the primary and secondary level have a different number of grades, e.g. in consequence of structural differences between states or regions, it might be necessary to complete the table ENRL-3 two times by region in order to reflect the structure of the system properly and to allow a correct calculation of repeater and drop-outs over time.

20.4.2 DATA VERIFICATION

The total of all grades plus the number of students not classifiable by grade, reported in column A1, should be equal to the equivalent columns in the table ENRL-1a. Undertake the cross-checks indicated in the second columns. Explain any deviations from the following rules:

	Table	Row	Column		Table	Row	Column
Primary	ENRL-3	A1	1	=	ENRL-1a	A1	6
Lower Secondary	ENRL-3	A1	2	=	ENRL-1a	A1	9
Upper Secondary	ENRL-3	A1	3	=	ENRL-1a	A1	16

20.5 TABLE ENRL-4

Table ENRL-4 collects data on student enrolment in Grade 1 at the primary level of education by sex and ageA distinction between the different age groups is made.

20.5.1 DATA VERIFICATION

Undertake the cross-checks indicated in the second columns. Explain any deviations from the following rules:

Table	Row	Column		Table	Row	Column
ENRL-4	A1	1	=	ENRL-3	A2	1

20.6 TABLE ENRL-5

This table does not apply to WEI participants.

Table ENRL-5 collects data on student enrolment at the tertiary level of education by level of education * type of ISCED 5 educational programme * sex * field of education.

20.6.1 DATA VERIFICATION

Ensure that un-duplicated counts are reported. Undertake the cross-checks indicated in the second columns. Explain any deviations from the following rules:

Table	Row	Column		Table	Row	Column
ENRL-5	A1	1	=	ENRL-1a	A1	26
ENRL-5	A1	2	=	ENRL-1a	A1	30
ENRL-5	A1	3	=	ENRL-1a	A1	27
ENRL-5	A1	4	=	ENRL-1a	A1	33

20.7 TABLE ENRL-8

Table ENRL-8 collects data on the number of foreign students at the tertiary level of education by level of education*programme destination and country of citizenship. The list of countries is adopted from UNESCO.

In case of geopolitical changes countries are requested to provide estimates for the countries that are reported in this table.

20.7.1 DATA VERIFICATION

Ensure that un-duplicated counts are reported. Explain any deviations from the following rules:

Table	Row	Column		Table	Row	Column
ENRL-8	A1	1	=	ENRL-7	A1	8
ENRL-8	A1	2	=	ENRL-7	A1	12

20.8 TABLE ENTR-1

This table does not apply to WEI participants.

20.8.1 DATA VERIFICATION

Explain any deviations from the following rules:

Table	Row	Table	Row
ENRL-1	A1	ENTR-1	A1
ENTR-1	A1	ENTR-1	A2 +A3 + A4
ENTR-1	B1	ENTR-1	B2 + B3

20.9 TABLE ENTR-2

Table ENTR-2 collects data on new entrants to ISCED 3, 4, 5A, 5B and 6 by level of education * sex * age. Separate information for resident and non-resident foreign new entrants is also collected.

Foreign students who are enrolling for the first time in the country for which the data are being collected should be counted as New Entrants to their level of study independent of their previous education in other countries.

20.9.1 TECHNICAL NOTES ON COMPLETION OF DATA CELLS

The following types of students should *not* be included in the statistics on new entrants. If, however, the national statistics available do not allow the separation of these from the statistics

on new entrants, then please check the check-boxes in Table ENTR-2 indicated below. Provide additional information where necessary.

New entrants to a ISCED level

If your statistics include students who were enrolled in an earlier reference period in any programme at the same ISCED level (and which, in principle, should not be included in the statistics of new entrants), then please record "YES" in the according column of row [SE-1] of Table ENTR-2.

These students are further sub-classified into entrants which previously obtained an qualification at this level (and who are referred to as returnees to a second programme) and those who did not obtain an qualification at this level(and who are referred to as returnees to a first programme). If possible, provide the following additional information: If your statistics include returnees to a second programme, please record "YES" in the according column of row [SE-2]. If your statistics include returnees to a first programme, please record "YES" in row [SE-3].

20.9.2 DATA VERIFICATION

Ensure that un-duplicated counts are reported. Explain any deviations from the following rules:

Table	Row		Table	Row
ENTR-2	A1	=	ENTR-1	A2
ENTR-2	A1	=	ENTR-1	A2
ENTR-2	A1	=	ENTR-1	A2

20.10 TABLE GRAD-2

Table GRAD-2 collects data on the number of graduates at the upper secondary (ISCED 3) and post-secondary non tertiary (ISCED 4) levels of education by type of educational programme (orientation and destination) * type of institution and sex. For the total public and private institutions, an additional sub-classification by age has been introduced. Finally, data is also collected on foreign graduates (without distinction between resident and non-resident) by level of education * type of educational programme (orientation and destination) and sex at the total public and private institutions.

20.10.1 SYSTEM LEVEL DATA

Complete the information on the beginning and end of the school year, the data collection period, the reference date for ages, and the theoretical graduation ages as described in Section 0 of Chapter 1.

If data on the theoretical graduation ages are different (and available) by type of educational programme within the levels of education, then these should be reported at the programme level in rows S1 (yellow). If data are not available by programme but only by level of education, then the theoretical ages should be reported in the fields "All educational programmes" of rows S1 (red) and the remaining fields should be coded to "m".

References to data sources (including information on the type of source, reference to publication, publication date, publisher); estimation / imputation methods; and to the documentation regarding missing data should be provided in the corresponding green field at the right hand side of the table. Please use the note / comment attachment feature of EXCEL or provide references to the corresponding documents.

References to collection methods, especially to the calculation of the unduplicated count of graduates, should be provided in the corresponding green field at the right hand side of the table. Please use the note/comment attachment feature of EXCEL or provide references to the corresponding documents.

20.10.2 TECHNICAL NOTES ON COMPLETION OF DATA CELLS

Double counting of graduates must be avoided: The table requested special totals that should be unduplicated. For detailed instructions on how to calculate unduplicated counts, please refer to section 4.3.1.

20.11 TABLE GRAD-4

The content for this table is more limited for WEI participants.

Table GRAD-4 collects data on the number of graduates at the tertiary level of education by programme destination * sex * age. Additional information foreign graduates (without distinction between resident and non-resident) is also collected.

20.11.1 SYSTEM LEVEL DATA

Complete the information on the beginning and end of the school year, the data collection period, the reference date for ages, and the theoretical graduation ages as described in Section 0 of Chapter 1.

If data on the theoretical graduation ages are different (and available) by type of educational programme within the levels of education, then these should be reported at the programme level in rows S1 (yellow). If data are not available by programme but only by level of education, then the theoretical ages should be reported in the fields “All educational programmes” of rows S1 (red) and the remaining fields should be coded to “m”.

References to data sources (including information on the type of source, reference to publication, publication date, publisher); estimation/imputation methods; and to the documentation regarding missing data should be provided in the corresponding green field at the right hand side of the table. Please use the note/comment attachment feature of EXCEL or provide references to the corresponding documents.

References to collection methods, especially to the calculation of the unduplicated count of graduates, should be provided in the corresponding green field at the right hand side of the table. Please use the note/comment attachment feature of EXCEL or provide references to the corresponding documents.

20.11.2 TECHNICAL NOTES ON COMPLETION OF DATA CELLS

Double counting of graduates must be avoided: If degree B is obtained at a certain level after degree A was obtained at the same level of education, then degree B should not be counted. The table requested special totals that should be unduplicated. For detailed instructions on how to calculate unduplicated counts, please refer to section 4.3.1 and 4.3.2.

20.12 TABLE GRAD-5

Information is collected for graduates from prevocational/vocational programmes at levels 3 and 4 and from teriary programmes by level of education * programme destination for tetriary programmes * sex and field of education.

This table does not apply to WEI participants.

20.12.1 DATA VERIFICATION

Explain any deviations from the following rules:

Table	Row	Column		Table	Row	Column
GRAD-5	A1	1	=	GRAD-2	A1	10 + 11
GRAD-5	A1	2	=	GRAD-2	A1	12
GRAD-5	A1	3	=	GRAD-4	A1	4
GRAD-5	A1	4	=	GRAD-4	A1	6
GRAD-5	A1	5	=	GRAD-4	A1	7+8
GRAD-5	A1	6	=	GRAD-4	A1	9+10+11
GRAD-5	A1	7	=	GRAD-4	A1	12
GRAD-5	A1	8	=	GRAD-4	A1	17+18
GRAD-5	A1	9	=	GRAD-4	A1	19

20.13 TABLES PERS-1, PERS-2 AND PERS-3

Table PERS-3 does not apply to WEI participants. PERS-1 content is more limited for WEI participants

In table PERS-1, classroom teachers should be prorated between instructional personnel and school level management if information is available on the amount of time these personnel spend on different duties and responsibilities. Table PERS-2 collects data on classroom teachers and academic staff by age by sex by employment status. Data by age are only requested for all full-time and part-time teacher in all institutions. Classroom Teachers and Academic Staff without school management responsibilities should be reported by gender and age in the table PERS-2. School management personnel with at least some teaching responsibilities at ISCED 1-3 should not be included in counts of classroom teachers in table PERS-2.

PERS-2 should also not include Teacher Aides and Teaching/Research Assistants.

20.13.1 SYSTEM LEVEL DATA

All system level information has to be added in the table PERS-1. Since the tables PERS-2 and PERS-3 request a further break down of data provided in the table PERS-1 it is assumed that all system level information is identical.

ANNEXES

ANNEX 1: EXCERPT FROM THE FRASCATI MANUAL

3. INSTITUTIONAL CLASSIFICATION

3.7 HIGHER EDUCATION SECTOR

3.7.1 COVERAGE

190. This sector is composed of:

> - All universities, colleges of technology, and other institutes of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating **under the direct control of** or **administered by** or **associated with** higher education establishments.

191. This sector is not a SNA sector. It has been separately identified by the OECD (and by UNESCO) because of the important role played by universities and similar institutions in the performance of R&D.

192. The above definition describes the general coverage of the sector. However, it is difficult to provide clear guidelines which ensure internationally comparable reporting of data because it is not backed by SNA. As it is based on mixed criteria, it is particularly susceptible to varying interpretation resulting from national policy preoccupations and definitions of the sector.

193. The core of the sector in all countries is made up of universities and colleges of technology. Where treatment does vary, it does so with respect to other institutes of post-secondary education and above all to several types of institutes that are linked to universities and colleges. The main borderline problems are considered below:

- post-secondary education;
- university hospitals and clinics;
- borderline research institutions.

3.7.1.1 POST-SECONDARY EDUCATION

194. The sector includes all establishments whose **primary activity** is to provide post-secondary (third level) education regardless of their legal status. They may be corporations, quasi-corporations

belonging to a government unit, market NPIs or NPIs controlled and mainly financed by government or by NPSHs. As noted above, the core is made up of universities and colleges of technology. The number of units in the sector has grown as new universities and specialised post-secondary educational institutions have been set up and secondary level units, some of which may supply education services at both secondary and post-secondary level, have been upgraded. If such units supply post-secondary education as a primary activity, they are always part of the higher education sector. If their primary activity is the provision of secondary level education or in-house training they should be allocated by sector in line with the other general rules (market or non-market production, sector of control and institutional funding, etc.). If, however, their post-secondary activities can be identified separately, they may be judged under the "associated" rule (see below).

3.7.1.2 UNIVERSITY HOSPITALS AND CLINICS

195. Inclusion of university hospitals and clinics in the higher education sector is justified both because they are post-secondary educational institutions (teaching hospitals) and because they are research units "associated with" higher education institutions *(e.g.* advanced medical care in clinics at universities).

196. Academic medical research is traditionally funded from many sources: out of the institutions' general "block grant" (GUF); from the institution's "own funds"; directly or indirectly (via a medical research council, for instance) from government funds or from private funds.

197. Where all or nearly all activities in the hospital/medical institution have a teaching/training component, the entire institution should be included as part of the higher education sector. If, on the other hand, only a few of the clinics/departments within a hospital/medical institution have a higher education component, **only** these teaching/ training clinics/departments should be classified as part of the higher education sector. All other non-teaching/training clinics/departments should, as a general rule, be included in the appropriate sector (corporations, quasi-corporations belonging to a government unit, and market NPIs in the business enterprise sector; NPIs controlled and mainly financed by government in the government sector, NPIs controlled and mainly financed by NPSHs in the PNP sector). Care must be taken to avoid double-counting of R&D activities between the various sectors concerned.

3.7.1.3 BORDERLINE RESEARCH INSTITUTIONS

198. Traditionally universities have been major centres of research, and when countries have wished to expand their R&D in specific fields, they have frequently been considered appropriate locations for setting up new institutes and units. Most such institutions are principally government-financed and may even be mission-oriented research units; others are financed by private non-profit sector funds and latterly by the business enterprise sector.

199. A particular case arises when special funds are used to set up and finance mainly basic research managed by agencies which not only pay grants to universities proper, but also have their "own" research institutes, which may or may not be situated on university campuses.

200. One factor which determines the classification of such research institutions is the purpose for which the research is being carried out. If it is predominantly to serve government's needs, countries may decide to classify the institution as part of the government sector. This is the case of "mission-oriented" R&D institutions financed from the budget of their sponsoring ministry or department. Alternatively, if the R&D is basic in nature and adds to the general body of knowledge in a country, then some Member countries may have opted to classify the institutions as part of the higher education sector, regardless of its teaching/training activities.

201. A higher education unit may have "links" with other research institutions not directly concerned with teaching or other non-R&D functions. One example might be the mobility of personnel between the higher education units and the research institution concerned (or *vice versa)*, and another the sharing of equipment facilities between institutions classified in different sectors.

202. Furthermore, in some countries, such borderline institutions may have a private legal status and carry out contract research for other sectors, or may be government financed research institutions. It is difficult to decide, in such cases, whether the links between the units are strong enough to justify including the "external" unit in the higher education sector.

203. A more recent development concerns the "science parks" situated at or near universities and colleges which host a range of manufacturing, service, and R&D institutions. It is recommended that, for science parks and other borderline institutions, physical location and use of common resources with the higher education sector should not be used as a classification criterion for the institutions associated with them, except when individuals, such as postgraduate students or fellows financed by direct grants or their own resources, perform R&D using higher education facilities are not actually on the university payroll (or that of any other sector, see Section 3.6.1).

204. Units administered by post-secondary teaching units (including teaching hospitals) as defined above, which are not primarily market producers of R&D, should be included in the higher education sector. The same applies if they are mainly financed from university block grants. If they are primarily market producers of R&D, they should be included in the business enterprise sector despite any links with higher education units; this is particularly relevant for science parks.

205. In the case of science parks also, any units controlled and mainly financed by government should be included in the government sector, while those controlled and mainly financed by the private non-profit sector should be included in the private non-profit sector.

206. In the case of classic associated "research institutes", it is not possible to give more definite instructions; further detailed discussion will be found in the supplement to the 1980 Frascati Manual (OECD, 1989*c*).

207. It is recommended that R&D expenditure and personnel of all institutes at the borderline with the higher education sector be reported separately.

6. MEASUREMENT OF EXPENDITURES DEVOTED TO R&D

6.1 INTRODUCTION

333. Expenditures on R&D may be spent within the statistical unit (intramural) or outside it (extramural). The full procedures for measuring these expenditures are:

a) to identify the intramural expenditure on R&D performed by each statistical unit;

b) to identify the sources of funds for these intramural R&D expenditures as reported by the performer;

c) to identify the extramural R&D expenditures of each statistical unit;

d) to aggregate the data, by sectors of performance and sources of funds, in order to derive significant national totals. Other classifications and distributions are then compiled within this framework.

334. Nevertheless, it is the first two stages which are essential and which generally suffice for stage *d)*. R&D expenditure data should be compiled on the basis of performers reports of intramural expenditures. The collection of extramural expenditures is, however, also desirable as a supplementary source.

6.2 INTRAMURAL EXPENDITURES

6.2.1 DEFINITION

335.

> Intramural expenditures are all expenditures for R&D performed within a statistical unit or sector of the economy, whatever the source of funds.

336. Expenditures made outside the statistical unit or sector but in support of intramural R&D (*e.g.* purchase of supplies for R&D) are included. Both current and capital expenditures are included. (See Annex 4 for guidelines on the classification of R&D expenditures in the software area.)

6.2.2 CURRENT EXPENDITURES

337. Current expenditures are composed of labour costs and other current costs (see also Section 6.2.3.3).

6.2.2.1 LABOUR COSTS OF R&D PERSONNEL

338. These comprise annual wages and salaries and all associated costs or fringe benefits such as bonus payments, holiday pay, contributions to pension funds and other social security payments, payroll taxes, etc. The labour costs of persons providing indirect services and which are not included in the personnel data (such as security and maintenance personnel or the staff of central libraries, computer departments, or head offices) should be excluded and included in other current costs.

339. Labour costs are almost always the largest component of current expenditure. Member countries may find it useful to collect or otherwise secure labour costs by personnel element ***(e.g.*** researchers, technicians and equivalent staff, other supporting staff, etc.). These extra classifications will be particularly helpful in the construction of cost indices for R&D expenditures.

6.2.2.1.1 Labour costs of postgraduate students engaged in R&D

340. Calculation of the salary element for postgraduate students poses a problem in most countries. Only those postgraduate students who are on universities' payrolls (as research assistants, for instance), and/or in receipt of external funds for R&D (such as research scholarships) should be included in the statistics. Very often, the monies they receive are lower than the "market value" of their work. Frequently, such students supplement their low R&D income with monies from non-R&D activities or from personal resources. The measure of R&D labour costs should, at least in theory, include these personal funds.

341. There may be a temptation to inflate R&D labour costs to take account of the difference between the "market value" mentioned above and the amounts actually spent in order to derive a "true" value of their R&D activities. This is, however, a questionable approach.

342. Only the actual "salaries"/stipends and similar expenditures associated with postgraduate students should be reported in the R&D statistics and accordingly no inflated values should be derived.

6.2.2.2 OTHER CURRENT COSTS

343. These comprise non-capital purchases of materials, supplies and equipment to support R&D performed by the statistical unit in a given year. Examples are: water and fuel (including gas and electricity); books, journals, reference materials, subscriptions to libraries, scientific societies and so on; imputed or actual cost of small prototypes or models made outside the research organisation; materials for laboratories (chemicals, animals, etc.). Administrative and other overhead costs (such as interest charges and office, post and telecommunications, and insurance costs) should also be included, pro-rated if necessary to allow for non-R&D activities within the same statistical unit. All expenditures on indirect services should be included here, whether carried out within the organisation concerned or hired or purchased from outside suppliers. Examples of such services are security; storage; use, repair and maintenance of buildings and equipment; computer services; and printing of R&D reports.

6.2.2.3 INDIRECTLY PAID CURRENT COSTS

344. R&D activities may incur costs that are often not paid by the sector itself but are borne by institutions classified in other sectors of the economy, usually the government sector. Two examples are discussed in the following sections.

6.2.2.3.1 Rents for research facilities

345. In many countries, responsibility for "housing" public institutions (including universities, etc.) is undertaken by a central agency which is most likely to be included in the government sector in R&D surveys and whose accounts would not reflect the functional breakdown between R&D and "other" activities. This may apply to the administration of ongoing accommodation and temporary arrangements concerning premises and equipment. This is particularly relevant for the higher education sector.

346. In some cases, such facilities are available to institutions free of charge, or are not accounted for in the institutions' books. If a realistic cost of R&D is to be assessed, all fees/rents, etc., associated with R&D should be included in expenditure data. Where the fee or rent is charged to a unit within a sector, this is easily done. If, however, there is no such charge, it might still be desirable, for reasons of international comparability, to include a notional amount which represents an actual payment known to have been made between agencies in different sectors. This might be, for example, an estimated "market value", to be included in "other current costs". Care must be taken to avoid "double-counting" of costs between the suppliers and the recipients of these services.

347. Provided actual payments are made (even if not necessarily revealed by the R&D surveys), an adjustment – to account, for instance, for the estimated market value of the facilities concerned – should be made by the national authorities in their data series. It should be classified as "other current cost" in the receiving sector and should be subtracted, as appropriate, from the accounts of the other donating sectors concerned. If no actual provisions and/or payments exist, no such adjustments should be made.

6.2.2.3.2 Social security costs and pensions for R&D personnel

348. Labour costs of R&D personnel "comprise annual wages and salaries and all associated costs or fringe benefits such as bonus payments, holiday pay, contributions to pension funds and other social security payments, payroll taxes, etc." (para. 338).

349. While there is no ambiguity as to whether pension and other social security payments should be included in R&D cost data, the problem is that identification of such funds is extremely difficult in a sector such as higher education, where R&D is not readily identifiable as a separate area of activity. This problem is compounded by the complexity of national health, social security, retirement, and other systems.

350. Where there is an actual provision for social security and/or pensions for R&D personnel, such amounts should be included in R&D labour costs. These provisions need not necessarily be visible in the bookkeeping accounts of cost to the sector concerned but may often involve transactions within or between sectors. Care should be taken to avoid double-counting of such expenditure.

6.2.2.4 VALUE ADDED TAX (VAT)

351. Data on R&D expenditure on both a provider and funder basis should be at factor cost. This means excluding VAT and similar sales taxes from the measured cost of the R&D and specifically of R&D financed by government (for the treatment of subsidies, see Section 6.3.2). Not only will this aid in making valid international comparisons, but it will also assist countries' internal analyses, for example when looking at the opportunity cost of funds devoted to R&D or when deriving ratios using national income and government expenditure statistics, which generally exclude VAT.

352. In the case of the business enterprise sector, this should present very few problems since separate recording of VAT input costs is part of standard accounting procedures and is reclaimable if offset against any VAT charged on outputs. In the case of the government sector, VAT on input costs may generally be reclaimable, and therefore separately identifiable.

353. More difficulties may arise in the higher education and private non-profit sectors where VAT included in goods and services purchased as part of an R&D project may not be reclaimable and will therefore be regarded by the respondents as a legitimate part of their expenditures. Countries should make every effort to exclude VAT from expenditure figures for these sectors, making an adjustment centrally if necessary. It is recommended, therefore, that the figures returned to the OECD should be exclusive of VAT.

6.2.2.5 EXCLUSION OF DEPRECIATION

354. All depreciation provisions for building, plant, and equipment, whether real or imputed, should be excluded from the measurement of intramural expenditures. This approach is proposed for three reasons:

a) If depreciation (an allowance to finance the replacement of existing assets) were included in current expenditures, then the addition of capital expenditures would result in double-counting.

b) The actual sums set aside for depreciation are useless for purposes of international comparison because of differences in tax laws.

c) In the government sector, no provision is normally made for depreciation of fixed assets. Consequently, even within a country, comparisons between sectors cannot be made unless depreciation provisions are excluded, and aggregates for a national series cannot be compiled unless the sector totals are put on a comparable basis.

6.2.3 CAPITAL EXPENDITURES

355. Capital expenditures are the annual gross expenditures on fixed assets used in the R&D programmes of statistical units. They should be reported in full for the period when they took place and should not be registered as an element of depreciation (see para. 354).

They are composed of expenditures on:

- land and buildings;
- instruments and equipment.

6.2.3.1 LAND AND BUILDINGS

356. This comprises land acquired for R&D *(e.g.* testing grounds, sites for laboratories and pilot plants) and buildings constructed or purchased, including major improvements, modifications, and repairs.

357. The R&D share of the costs for new buildings is often difficult to quantify and many countries ignore this element of R&D expenditure (in the higher education sector), or at best estimate it, based on scheduled use (see Section 6.2.3.4).

358. Purchase of new research equipment is often included in the cost of new buildings, without being separately identifiable. This can result, in some years, in an underestimation of the "instruments and equipment" component in total capital R&D expenditures.

359. Countries should maintain a consistent methodology with regard to these costs.

6.2.3.2 INSTRUMENTS AND EQUIPMENT

360. This comprises major instruments and equipment acquired for use in the performance of R&D.

6.2.3.3 CONVENTIONS FOR DISTINGUISHING BETWEEN CURRENT AND CAPITAL ITEMS

361. In measuring actual capital expenditure, small tools and instruments and minor improvements to existing buildings will normally be excluded, as in most accounting systems these items are usually carried on current expenditure accounts. The boundary between "minor" and "major" items varies slightly among countries according to taxation practices and among different firms and organisations in the same country according to accounting practices. But these differences are rarely significant, and it is neither necessary nor practical to insist on any rigid standard for this purpose. Thus, national conventions will govern allocations to current or to capital expenditures. Nevertheless, in those countries where expenditures on very expensive prototypes *(e.g.* aircraft) or equipment with a limited life *(e.g.* launching rockets) are considered current expenditures, such conventions should always be made explicit.

6.2.3.4 IDENTIFYING THE R&D CONTENT OF CAPITAL EXPENDITURES

362. Occasionally, the R&D term of a fixed asset may be known at the time of acquisition. In this case, only a portion of the cost should be attributed to R&D capital expenditures. Similarly, when a fixed asset will be used for more than one activity and neither the R&D nor the non-R&D activities predominate *(e.g.* computers and associated facilities; laboratories used for R&D, testing, and quality control), the costs should be prorated between R&D and other activities. In the first case, the R&D share could be based on R&D term compared to the expected life of the asset. In the second case, the proportion could be based on numbers of R&D personnel using the facility, compared to total personnel, or on administrative calculations already made *(e.g.* the R&D budget may be charged a certain portion of the capital cost; a certain proportion of time or floor space may be assigned to R&D).

6.2.3.5 SALE OF R&D CAPITAL GOODS

363. The sale or transfer of fixed assets originally acquired for R&D creates a problem. The disposal of such assets could be considered as a disinvestment in R&D. However, no adjustment to recorded capital expenditures should be made. The statistical unit's capital R&D expenditures should not be reduced accordingly, either currently or retrospectively (for the years in which the capital costs were recorded). Current revisions can cause anomalies such as negative intramural R&D expenditures. Retrospective revisions are difficult and confusing.

6.2.3.6 LIBRARIES

364. Another case worthy of attention is that of libraries. Even though payments for the current purchase of books, periodicals, and annuals should be assigned to "other current costs", expenditure for the purchase of complete libraries, large collections of books, periodicals, specimens, etc., should be included in the data reported to UNESCO under expenditure on major equipment", especially when made at the time of equipping a new institution (see Section 3.2.1 of UNESCO, 1984c).

365. Each country should adopt the UNESCO approach in reporting data to the OECD. If this is not possible, a consistent methodology should be maintained with regard to the classification of the above costs, thus making it possible to observe changes in the pattern of such expenditure.

6.3 SOURCES OF FUNDS

6.3.1 METHODS OF MEASUREMENT

366. R&D is an activity where there are significant transfers of resources between units, organisations, and sectors. Every effort should be made to trace the flow of R&D funds. These transfers may be measured in two ways:

- **Performer-based** reporting of the sums which one unit, organisation, or sector has received from another unit, organisation, or sector for the performance of intramural R&D.
- **Source-based** reporting of extramural expenditures which are the sums a unit, an organisation, or a sector reports having paid to another unit, organisation, or sector for the performance of R&D.

367. The first of these approaches is strongly recommended.

6.3.2 CRITERIA FOR IDENTIFYING FLOWS OF R&D FUNDS

368. For such a flow of funds to be correctly identified, two criteria must be fulfilled:

- there must be a direct transfer of resources;
- this transfer must be both intended and used for the performance of R&D.

6.3.2.1 DIRECT TRANSFER

369. Such transfers may take the form of contracts, grants, or donations and may take the form of money or of other resources *(e.g.* staff or equipment lent to the performer). When there is a significant

non-monetary transfer, the current value has to be estimated since all transfers must be expressed in financial terms.

370. Resources may be transferred in a number of ways, not all of which may be considered direct.

371. Contracts or grants paid for the performance of current or future R&D are clearly identifiable as a transfer of funds. Transfer of funds from the government to other sectors is particularly important to the users of R&D data.

372. Two categories of such government funds may be identified:

a) those which are specifically for the procurement of R&D, *i.e.* the results of the R&D belong to the recipient of the output or product of the R&D, who is not necessarily the funder of the R&D;

b) those which are provided to the performers of R&D in the form of grants or subsidies, with the results of the R&D becoming the property of the R&D performers.

373. It is recommended that, if possible, both categories of transfer of government R&D funds be identified in the R&D data of the business enterprise sector. If possible, a similar breakdown should be made for government funds going to the higher education sector.

374. In theory, when a government allows a firm or university to use, free of charge, facilities such as a wind-tunnel, observatory or launching site while carrying out R&D, the value of the service (an imputed rental) should be identified as a transfer. In practice the beneficiary would not normally be able to make such an estimate, and the donor might not be able to do so either.

375. In some cases, a firm's R&D project may be financed by loans from a financial institution, an affiliated company, or a government. Loans which are to be repaid are not to be considered transfers; loans which may be forgiven are to be considered transfers (by convention).

376. There are also a variety of other government incentives for R&D in the business enterprise sector. Examples are the remission of income taxes for industrial R&D, the payment by a government, on demand and after audit, of a certain portion of some or all of a firm's R&D expenditures, bonuses added to R&D contracts to encourage a firm in its own R&D, remission of taxes and tariffs on R&D equipment, and the reimbursement of part of a firm's costs if it hires more R&D staff. For the present, even where these transfers can be separately identified, they should not be counted as direct support for R&D. The statistical units should therefore report gross expenditures as incurred, even when their actual costs may be reduced because of remissions, rebates, or post-performance grants.

6.3.2.2 TRANSFER BOTH INTENDED AND USED FOR R&D

377. In many R&D transfers this criterion can be taken for granted. There are instances, however, where its application can clarify the situation (particularly where there is a difference between the performer's and the funder's report):

a) In one case, a unit gives funds to another in return for equipment or services needed for its own R&D. If the provision of this equipment or these services does not require the second unit to carry out R&D, it cannot report that it performed R&D funded by the first unit. For example, a government laboratory buys standard equipment or uses an outside computer to perform calculations required for an R&D project. The equipment supplier or the computer service firm carry out no R&D themselves and would report no R&D funded by the government. These expenditures should be considered by the government laboratory, for R&D statistics, to be intramural capital and intramural other current costs, respectively.

b) In a second case, there are transfers of funds which are loosely described by the source as "development contracts" for "prototypes", but no R&D is performed by the funder and very little by the recipient. For example, the government places a contract with an industrial firm to "develop" a "prototype" civil aircraft for a specific use *(e.g.* treatment of oil slicks). The aircraft is largely constructed by the performer using existing materials and existing technology, and R&D is only needed to meet the new specifications. Only this portion of the contract should be reported by the performer as R&D financed by the government sector, even though the funder's accounts may suggest at first sight that the entire contract was for R&D.

c) In a third case, one unit receives money from another and uses it for R&D although the funds were not paid out for that purpose. For example, a research institute may finance some of its work through receipts from royalties and profits from the sales of goods and services. Although these funds are received from other units and other sectors, they should not be considered as transfers for R&D but as coming from the "retained receipts" of the performing unit itself, as the purchasers of the institute's goods and services did not intend to transfer funds for R&D.

6.3.3 IDENTIFYING THE SOURCES OF FLOWS OF R&D FUNDS

378. Performers are usually asked to distribute their intramural expenditures between funds of the performing unit (own funds), funds from other units in the same sector or subsector, and from other sectors and subsectors. They can usually do so relatively easily, but there are one or two problem areas.

6.3.3.1 INFLUENCE OF THE TYPE OF THE STATISTICAL UNIT

379. The amount of transferred funds reported will be affected by the type of statistical unit on which the data are based. This particularly concerns flows between organisations within the same sector. For instance, government departments may well charge one another for the performance of R&D, but this will usually be considered as intramural to the government sector. Similarly, a business enterprise may, for accounting reasons, charge for the R&D done by one of its establishments for another, but consider the work to be intramural as far as the enterprise is concerned. The decision on where to draw the boundary is an arbitrary one, and the important point again is to comment fully in any published tables.

6.3.3.2 SUBCONTRACTING AND INTERMEDIARIES

380. Further problems arise when money passes through several organisations. This can occur when R&D is subcontracted, as is sometimes the case in the business enterprise sector. The performer should indicate, so far as possible, the original source of the funds for R&D. In some countries, intermediary non-performing organisations play an important role in the financing of R&D by distributing among performers grants received from several different sources but not "earmarked" for specific purposes. Well-known examples are the Stifterverband für die Deutsche Wissenschaft and the Deutsche Forschungsgemeinschaft in Germany. In such cases it is acceptable to regard these organisations as the source, although it is preferable to attempt to trace the funds to their original sources.

6.3.3.3 PUBLIC GENERAL UNIVERSITY FUNDS (GUF)

381. Probably the largest single area of disagreement about sources of funds occurs with public general university funds (GUF). Universities usually draw on three types of funds to finance their R&D activities:

a) R&D contracts and earmarked grants received from government and other outside sources. These should be credited to their original source.

b) Income from endowments, shareholdings, and property, plus receipts from the sale of non-R&D services such as fees from individual students, subscriptions to journals, and sales of serum or agricultural produce. These retained receipts are clearly the universities' "own funds". In the case of private universities, these may be a major source of funds for R&D.

c) The general grant they receive from the Ministry of Education or from the corresponding provincial or local authorities in support of their overall research/teaching activities. This case gives rise to a conflict between the principle of tracing the original source and that of using the performer's report and also to some disagreement about how the criterion concerning the intentions of the funder (para. 377) should be applied. In the first approach one argues that, as government is the original source and has intended at least part of the funds concerned to be devoted to R&D, the R&D content of these public general university funds should be credited to government as a source of funds. Using the second approach, one argues that it is within universities that the decisions are taken to commit money to R&D out of a pool which contains both "own funds" as narrowly defined in *b)* and public general university funds; therefore, the sums concerned should be credited to higher education as a source of funds. While no recommendation can be made for national practice, government-financed GUF should be credited to the public sector as a source of funds for the purposes of international comparisons. For clarity, publicly financed GERD is divided into two sub-categories:

- direct government funds;
- GUF.

382. In line with the findings of a study by a group of experts, the following procedures should be adopted:

a) GUF should be separately reported and any adjustments to the R&D costs series should take account of real or imputed social security and pensions provisions, which should be credited to GUF as a source of funds;

b) monies from the higher education "block grant" should be classified as GUF, and other monies generated by the sector should be considered as "own funds";

c) adjustments related to "other current costs" to account for real or imputed payments of rents, etc., should be debited to direct government funds.

6.4 EXTRAMURAL EXPENDITURES

383. Data on the extramural R&D expenditures of statistical units are a useful supplement to the information collected on intramural expenditures. These extramural expenditure data are essential for providing statistics on R&D performed abroad but financed by domestic institutions. They may also be helpful to those analysing the flows of funds reported by performers, particularly if there are gaps in the survey coverage.

384. The concept of "techno-globalism" is a rapidly evolving one in the context of the increasingly world-wide organisation of R&D. As the focus of R&D data is necessarily on the individual country, it is very difficult to track international flows of R&D funds. In the future, more use should be made of analysis of extramural R&D funds to address this problem. The internationalisation of R&D activities mainly affects the business enterprise sector, and it is therefore recommended that analysis of business enterprise extramural R&D expenditure be done according to the institutional subclassification described in the sector "Abroad" (paras. 217-219), with the following subclassification system:

- subsidiary or associated company;
- joint ventures;
- other business enterprise company located abroad;
- foreign government;
- EC;
- international organisations;
- other.

6.5 NATIONAL TOTALS

6.5.1 GROSS DOMESTIC EXPENDITURE ON R&D (GERD)

385.

> GERD is total intramural expenditure on R&D performed on the national territory during a given period.

386. It includes R&D performed within a country and funded from abroad but excludes payments made abroad for R&D. GERD is constructed by adding together the intramural expenditures of the four performing sectors. It is often displayed as a matrix of performing and funding sectors (see Table 6.1). The GERD and GERD matrix are fundamental to the international comparison of R&D expenditures. They also provide the accounting system within which the institutional classifications and functional distributions may be applied.

387. It would be useful to have separate tables for defence and civil GERD, in order to map how treads in these areas affect the level and structure of total GERD. This is particularly true for those countries with significant defence R&D programmes.

6.5.2 GROSS NATIONAL EXPENDITURE ON R&D (GNERD)

388. The GNERD is an optional supplementary aggregate which comprises total expenditure on R&D financed by institutions of a country during a given period. It includes R&D performed abroad but financed by national institutions or residents; it excludes R&D performed within a country but funded from abroad. It is constructed by adding the domestically financed intramural expenditures of each performing sector and the R&D performed abroad but financed by domestic funding sectors (see Table 6.2).

389. To allow the identification of R&D activities of international organisations, the “Abroad” sector should have as a subcategory “International Organisations” as recommended in the institutional subclassification (see Section 3.8.3).

ANNEX 2: OECD/DSTI DATA PROVIDERS

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for

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ANNEX 3: EXCERPT FROM SYSTEM OF NATIONAL ACCOUNTS 1993

Imputed social contributions (D.612)

8.71. An entry is needed in the secondary distribution of income account for the imputed social contributions payable by employees when employers operate unfunded social insurance schemes. For convenience, the discussion of the corresponding item in chapter VII, paragraphs 7.45 to 7.47 is repeated here.

8.72. Some employers provide social benefits themselves directly to their employees, former employees or dependants out of their own resources without involving an insurance enterprise or autonomous pension fund, and without creating a special fund or segregated reserve for the purpose. In this situation, existing employees may be considered as being protected against various specified needs, or circumstances, even though no payments are being made to cover them. Remuneration should therefore be imputed for such employees equal in value to the amount of social contributions that would be needed to secure the de facto entitlements to the social benefits they accumulate. These amounts depend not only on the levels of the benefits currently payable but also on the ways in which employers' liabilities wider such schemes are likely to evolve in the future as a result of factors such as expected changes in the numbers, age distribution and life expectancies of their present and previous employees. Thus, the values that should be imputed for the contribution ought, in principle, to be based on the same kind of actuarial considerations that determine the levels of premiums charged by insurance enterprises.

8.73. In practice, however, it may be difficult to decide how large such imputed contributions should be. The enterprise may make estimates itself, perhaps on the basis of the contributions paid into similar funded schemes, in order to calculate its likely liabilities in the future, and such estimates may be used when available. Otherwise, the only practical alternative may be to use the unfunded social benefits payable by the enterprise during the same accounting period as an estimate of the imputed remuneration that would be needed to cover the imputed contributions. While there are obviously many reasons why the value of the imputed contributions that would be needed may diverge from the unfunded social benefits actually paid in the same period, such as the changing composition and age structure of the enterprise's labour force, the benefits actually paid in the current period may nevertheless provide the best available estimates of the contributions and associated imputed remuneration. ion.

8.74. The two steps involved may be summarized as follows;

(a) Employers are recorded, in the generation of income account, as paying to their existing employees as a component of their compensation an amount, described as imputed social contributions, equal in value to the estimated social contributions that would be needed to provide for the unfunded social benefits to which they become entitled;

(b) Employees are recorded, in the secondary distribution of income account, as paying back to their employers the same amount of imputed social contributions (as current transfers) as if they were paying them to a separate social insurance scheme.

ANNEX 4: ISCED MAPPINGS

ISCED Mappings available to the international organisations for OECD countries

ISCED Mappings available to the international organisations for WEI countries

ISCED Mappings available to the international organisations for PHARE countries