UOE data collection on education systems

Volume1

Manual

Concepts, definitions and classifications

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Data Collection on Education Statistics

Manual

0.1 INTRODUCTION

The objective of the UNESCO-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.

Participating 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*.

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

Participants of the OECD / UNESCO-UIS World Education Indicators pilot project (for simplicity, we will henceforth refer to them as WEI participants) complete instruments very similar to the UOE instruments. However, WEI deviations from the UOE core data collection do exist, and are indicated in shadowed boxes (see below), so that WEI data providers can easily track them.

For **WEI participants**, 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.

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, repeaters, educational personnel, class size and expenditure).

The preparation of the data collection tables is guided by the search for a common denominator between OECD, EUROSTAT, and UNESCO-UIS. This common denominator is reflected in the UOE tables on students, new entrants, graduates, educational personnel, finance, class size and the ISCMAP tables. In addition there are EU specific tables introduced by the European Commission (Eurostat). In 2005 these tables covered *regional data on enrolment,* data on *foreign languages* and data on *graduations in ISCED 5A following the implementation of the Bachelor – Master degree structure according to the Bologna process*. This EU specific part of the UOE data collection is managed by Eurostat.

EU and candidate countries do not have to deliver DEM-1: "Total population by sex and age-group" as the demographic data used for these countries will come from the Eurostat Demographic database at national and regional level.

Moreover since 2005 a limited set of data on specific subjects are collected using the UOE data collection through a small number of additional tables ("ad hoc module"). The subject of the ad hoc module changes from year to year. However some subjects may be repeated regularly following an agreement between the UOE data requesters and data providers.

The list of standard tables is the following:

- Table ENRL-1: Number of students by level of education, programme orientation, programme destination, intensity of participation, sex and age.
- Table ENRL-1_ADULT: Number of students in adult education programmes reported in ENRL-1 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-1a_ADULT: Number of students in adult education programmes reported in ENRL-1a by level of education, programme orientation, programme destination, type of institution, intensity of participation and sex.
- 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 students (ISCED 56) by residential status, prior education outside the reporting country, citizenship, level of education, programme destination and field of education.
- Table ENRL-7: Number of students by level of education, programme destination, residence status, country of prior education, citizenship, EU/non EU membership and sex.
- Table ENRL-8A: Number of students (ISCED 5/6) by level of education, programme destination, country of permanent residence and citizenship status.

- Table ENRL-8B: Number of students (ISCED 5/6) by level of education, programme destination, country of prior education and citizenship status.
- Table ENRL-8C: Number of students (ISCED 5/6) 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, sex and age.
- Table ENTR-3: Number of new entrants by level of education, sex and field of education.
- Table GRAD-1: Number of graduates (ISCED 3 and 4) by level of education, programme destination, programme orientation, type of institution, sex and by residence, country of prior education and citizenship status.
- Table GRAD-2: Number of graduates (ISCED 3 and 4) by level of education, programme destination, programme orientation, age and sex.
- Table GRAD-3: Number of graduates (ISCED 5/6) by level of education, programme destination, cumulative duration, type of institution, sex and by residence, country of prior education and citizenship status.
- Table GRAD-4: Number of graduates (ISCED 5/6) by level of education, programme destination, cumulative duration, age and sex.
- Table GRAD-5: Number of graduations (ISCED 3, 4, 5 and 6) by level of education, programme orientation, sex and field of education.
- Table PERS_ENRL-2: Number of students with coverage adjusted to statistics on educational personnel by level of education, programme orientation, programme destination, type of institution and mode.
- Table PERS-1: Classroom teachers (ISCED 0-4) and academic staff (ISCED 5-6) by level of education, programme orientation, sex, age, type of institution and employment status.
- Table PERS-2: School level management personnel and teacher aids (ISCED 0-3) by type of institution and employment status.
- Table FIN_ENRL-2: Number of students with coverage adjusted to statistics on educational finance by level of education, programme orientation, programme destination, type of institution and mode.
- 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-PROG: Mapping of national educational programmes.
- Table ISCMAP-QUAL: Mapping of national educational qualifications.
- Table CLASS-1: Average class size by level of education and type of institution.
- (Table DEM-1: Total population by sex and age-group.)

Please note that the list of tables above refers to the UOE common data collection. Minor WEI-specific adjustments within tables are documented in section 0.

0.3 CONTENTS OF THE PRESENT VOLUME

The present volume, called "UOE manual", presents the concepts, definitions and classifications used for the UOE data collection. It constitutes the theoretical background of the UOE data collection and is complemented each year with 2 additional volumes "UOE tables and instructions for their completion and submission" and "UOE electronic questionnaire – user guide" , which are specific to the data collection year and provide more practical guidance to the UOE data providers.

The "UOE manual" includes two 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.
- Chapter 2 provides instructions relating to the ***implementation of the 1997 version of the International Standard Classification of Education*** (ISCED-97) in the UOE Data Collection and mapping of current education programmes for 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.

All data collection tools are available on the Eurostat Education, Training and Culture Statistics public web site at the address:

http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection

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Chapter 1

Definitions, explanations and instructions for the UOE data collection

1. OVERVIEW

This chapter is organised as follows:

- Section 1 provides a general overview.
- Section 2 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 3 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 4 defines the ***classification categories*** that are used as breakdowns in the tables.
- Section 5 provides specific instructions on concepts and definitions used to report on ***educational expenditure***.

■ Participating countries 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, countries are asked to document them accordingly. The documentation of such cases is of crucial importance for the future credibility of international education statistics.

2. COVERAGE OF THE DATA COLLECTION

2.1 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 or ISCED 97 available at: http://www.uis.unesco.org/ev.php?ID=3813_201&ID2=DO_TOPIC). 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 all of a country's domestic educational activity (i.e. within its own territory) regardless of

- ownership or sponsorship of the institutions concerned (whether public or private, national or foreign) and

- 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, with the exception of combined school- and work-based programmes that are explicitly deemed to be parts of the education system and that the school based component accounts for at least 10 percent of the study over the whole length of the programme (➢ see Section 2.5). However, specific instructions relate to the coverage of personnel and expenditure related to the work component of school- and work-based programmes (➢ see 5.1.1.3.8).
- Entirely work-based education and training for which no formal education authority has oversight. Correspondingly, all continuing training of employees by their employers should be excluded from the statistics that are reported.
- Programmes of shorter duration than one semester, full time equivalent duration as defined nationally. This applies to programmes specifically designed as adult education as well as to any initial programmes of this short duration.

2.2 COVERAGE OF EARLY CHILDHOOD EDUCATION PROGRAMMES

Tables ENRL-1, ENRL-1a, ENRL-7 request data on pupils enrolled in early childhood education 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.

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).

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).

2.3 COVERAGE OF "SPECIAL EDUCATION"

Students and personnel involved in special education should be included in all tables of the ENRL, ENTR, GRAD and PERS questionnaires. However, students with special needs should be excluded from CLASS questionnaires.

Countries have various programmes and delivery mechanisms to provide educational services to mentally, physically, emotionally or socially disadvantaged students and other groups with special learning needs (in some countries gifted children are regarded as part of the special needs group).

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. Special education as it is defined nationally is included in the data collection (wherever it takes place: mainstream schools, special educational institutions, or unit or hospitals). However, it is included only **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.

2.4 COVERAGE OF "ADULT EDUCATION" AND "CONTINUING EDUCATION"

Students and personnel involved in adult education programmes which are **similar** to regular education programmes (see below) should be included in all tables of the ENRL, ENTR, GRAD, PERS, CLASS and FINANCE questionnaires. Since the 2005 data collection year, the

specific tables ENRL-1_Adult and ENRL-1a_Adult were introduced requesting separate reporting of data on students enrolled in adult education programmes which are already reported in other tables.

Adult education or continuing education covers the learning activity of those returning to education after having left initial (or "regular") education. **Initial education** is defined as education taken by people in preparation for their initial entry into work. It thus includes early childhood programmes, through compulsory schooling and beyond to post-secondary education. Initial education typically takes place in an organised, structured setting and is usually provided in the formal system of schools, colleges and universities within a country. Initial education typically follows a continuous path or paths of progression prior to initial entry into full-time employment.

In most countries what is defined nationally as "adult" or "continuing" or "non-regular education", falls into this category.

Educational activities classified as "continuing", "adult" or "non formal" education (henceforth referred to as "adult education" for convention) should be **INCLUDED** in the statistics *provided that:*

- The activities involve studies with subject content similar to regular educational programmes, ***or***

- That the underlying programmes lead to similar potential qualifications as corresponding regular educational programme.

Activities satisfying these criteria of similarity should be included regardless of whether:

- They are classified as general or vocational-technical education,

- The programmes are provided by the same educational institutions which provide initial education or by educational institutions (or components of institutions) specialising in adult or other continuing education.

Consequently programmes or studies designated as "adult education" or "continuing education" but which are not similar to regular educational programmes as defined above should be **EXCLUDED**. 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 "continuing education" or "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.

2.5 COVERAGE OF VOCATIONAL AND TECHNICAL EDUCATION

Students and personnel involved in vocational and technical education within the scope of the data collection should be reported in all tables from ENRL, ENTR, GRAD, PERS, CLASS and FINANCE questionnaires.

The coverage of vocational and technical training in the statistics is dependent upon where the training takes place: *at school, in the work place or a combination of both.*

❍ The following programmes are **INCLUDED**:

- Solely school-based vocational and technical training, in the same way that any other school based study is covered in the statistics,

- Combined school- and work-based programmes (such as dual-system apprenticeship): both the school- and work-based components are included if:

  - they are explicitly deemed to be parts of the education system and an education authority has oversight of them,

  - the school-based component accounts for at least 10 percent of the study over the whole length of the programme.

  Correspondingly, all training of employees by their employers should be excluded from the statistics that are reported.

As stated before, vocational and technical training conducting solely in enterprises should be excluded from the coverage of this data collection. Then are **EXCLUDED**:

- work-based study or combined school-and work-based study in which the work-based component represents 90 percent or more of the total study over the whole length of the programme and for which no education authority has oversight,

- Training of employees by their employers unless there is an element of school based study associated with it which represents 10 percent or more of the total study.

♦ The coverage of combined school- and work-based programmes extends to vocational and technical programmes provided by *instructional educational institutions* (➢ see definition in Section 4.3.2). 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.

For details on the definitions of "school-based programmes" and "combined school and work-based programmes" see section 4.7.

Examples of *combined school-and work-based* programmes included:

- 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).

Example of programme included: in Greece, the programmes of ISCED 5B comprise 7-8 semesters, the last one of which is entirely work-based. As the solely work-based element comprises only between one-eighth and one-seventh of the total study in the programme, the programmes are regarded as combined school and work-based programmes and both the school and work-based components should be recorded in the statistics.

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 and 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 no or almost no 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 PERS_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, the number of full-time equivalents given in table PERS_ENRL-2, for the calculation of student-teacher ratios, should be adjusted to reflect only the school-based part. The number of full-time equivalents is now calculated as number of students times 0.3, or 39,000 FTEs.

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

All tables from ENRL, ENTR, GRAD, PERS, CLASS and FINANCE questionnaires include data on 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 **INCLUDED** in the statistics if the main aim of the programme is the educational development of the individual (☞ For example, students in nursing and paramedical programmes).

2.7 COVERAGE OF MOBILE/INTERNATIONAL STUDENTS

All tables from ENRL, ENTR, GRAD and CLASS questionnaires request data on all students, including mobile (or international) students. Tables ENRL-6, ENRL-7, ENRL-8A, ENRL-8B, ENRL-8C, GRAD-1 and GRAD-3 ask for specific information on mobile/international students.

Mobile/international students are defined on the basis of one of the following criteria (see section 4.6 for definitions):

- their country of citizenship,
- their country of permanent or usual residence,
- their country of prior education.

❍ Unless otherwise indicated, all data on students enrolled, entrants, new entrants, and graduates should include mobile/international students, independent of whether the individuals are integrated into normal educational institutions or are in special educational institutions. The only exceptions are the tables ENRL-6 and ENRL-7 , which request data on mobile/international students only (see section 4.6 for a definition of mobile/international students)

❍ The data collection on mobile/international students has changed in UOE 2005. Previously to the 2005 data collection, only mobile/international students defined on the basis of their country of citizenship were distinguished in the UOE data collection. The revision of the data collection in 2005 aimed at scrutinising student mobility where previous year's data collections have not been sufficient. The 2005 UOE tables are considered a full-scale pilot. The 3 data requesters will draw their conclusions and propose amendments or further instructions in the 2006 data collection.

Remarks:

- **Distance learning**: Students from country A who are enrolled with institutions in country B should be reported in the statistics of country B and not in the statistics of country A. This applies equally to students who enrol in distance learning programmes with an

institution based in country B but who remain resident in country A. However, in cases where it is not possible in practice to report these students, documentation must be provided.

- **Foreign campus**: Also, an institution in country A may have a campus or out-post in country B (i.e. a ***foreign campus***). Here country B should report the enrolments and finance for the foreign campus in the same manner as it reports activities of its domestic educational institutions. The mobile/international status of the students at these campuses should be determined in relation to the country reporting the data. So, all students enrolled at campuses outside their home country should be recorded as mobile/international students. Conversely, students enrolled in their home country at campuses of universities headquartered in another country (i.e. foreign campuses of universities of another country) are **not** to be recorded as mobile/international students.

  Foreign campuses that in practice do not accept students from the host country (for example schools provided for the children of military personnel based outside their home country) should be treated in the same way as other foreign campuses. Although, in practice, the host country may not have access to the data to report such students, their numbers are not likely to be statistically significant. However, in cases where it is not possible in practice to report these students, documentation must be provided.

- **Exchange programmes**: All students in exchange programmes, on short-term postings (a school-year or less than a full school year) to institutions in other countries should be excluded in the enrolment statistics of the host country but be reported only in the home country, the country of original enrolment. It is recognised that this will result in an undercount of student mobility, but as data on participants in exchange programmes are available from other sources, it can be overcome.

2.8 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 tables PERS_ENRL-2 and FIN_ENRL-2 (See vol. 2 "UOE tables and instructions for their completion and submission"). These tables collect data on the number of students enrolled by level of education with some breakdowns by type of programme and by type of institution 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 FIN_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 PERS_ENRL-2.

2.9 COVERAGE OF EDUCATIONAL EXPENDITURE

2.9.1 FRAMEWORK FOR EDUCATIONAL EXPENDITURE

Ideally, for the purposes of international comparison, educational expenditure should 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.

In practice, however, national data collections have educational institutions as their defining units rather than the educational goods and services, reflecting the traditional interest in how much schools, colleges and universities cost, and how much of that is paid for by the government. But whilst an institutional dimension is important for the finance data, it is problematic for international comparisons because some of the goods and services provided by educational institutions in one country may in fact be provided outside educational institutions in another country. Furthermore, it is often difficult to neatly separate out the educational and non-educational goods and services offered by institutions. It is necessary therefore to consider a framework for educational finance data that is built around three dimensions:

- The type of **goods and services** provided or purchased (core and peripheral goods and services);
- The **service provider** (educational and other institutions (e.g. bus company)) and
- The **Source of funds** that finance the provision or purchase of these goods and services (public, private sources).

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, type of 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;
- Subsidies to students from government and other private entities; plus
- Transfers and payments to other private entities.

All (public and private) 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.

Figure 1. Framework for educational expenditure

<table>
<tr><th colspan="2" rowspan="2">Type of goods and services</th><th colspan="2">Location</th></tr>
<tr><th>Inside educational institutions</th><th>Outside educational institutions</th></tr>
<tr><td colspan="2" rowspan="3">Educational core goods and services</td><td>Public funds</td><td>Subsidised
(books, materials, extra tuition)</td></tr>
<tr><td>Subsidised private</td><td rowspan="2">Private funds</td></tr>
<tr><td>Private funds
(tuition fees, other private entities)</td></tr>
<tr><td rowspan="2">Educational peripheral goods and services</td><td>R&D</td><td>Public funds
Private funds (other private entities)</td><td></td></tr>
<tr><td>Non-instruction</td><td>Public funds
Ancillary services: (meals, transport to schools, housing on the campus)
Subsidised private
Private funds (fees for services)</td><td>Subsidised private
(living costs, transport , …)
Private funds</td></tr>
</table>

Legend:

Public funds

Private funds (net of subsidies)

Public subsidies to private entities

Expenditure not within the scope of this data collection

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

Educational core goods and services:

- The first row, labelled "**educational core goods and services**", includes all expenditure that is directly related to instruction and education. It covers 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 or services provided by institutions for the general public.

The columns in figure 1 reflect the location of the different service providers in relation to educational institutions (i.e. inside or outside educational institutions).

- The first column, "inside **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 educational 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 educational institutions.

The third dimension in the framework – **sources of funds –** is represented by the colours in the diagram.

- Public sector and international agencies sources of funds are indicated by horizontally shading
- Households and other private entities are indicated by the dark shading
- Private expenditure on education that is subsidised by public funds is indicated by the vertically shading.

The white, un-shaded cells indicate the parts of the framework that are ***excluded*** from the coverage of the data collection on finance.

2.9.2 ACCOUNTING PRINCIPLES

In keeping with the system used by many countries to record government expenditures and revenues, the UOE educational expenditure data are compiled on a cash accounting rather than an accrual accounting basis. That is to say that expenditure (both capital and recurrent) is recorded in the year in which the payments occurred. This means in particular that:

- Capital acquisitions are counted fully in the year in which the expenditure occurs;
- Depreciation of capital assets is not recorded as expenditure, though repairs and maintenance expenditure is recorded in the year it occurs;
- Expenditure on student loans is recorded as the gross loan outlays in the year in which the loans are made, without netting-off repayments from existing borrowers.

One noted exception to the cash accounting rules is the treatment of retirement costs of educational personnel (see section 5.1.1.3.9.) in situations where there is no (or only partial) on-going employer contributions towards the future retirement benefits of the personnel. In these cases countries are asked to impute these expenditures in order to arrive at a more internationally comparable cost of employing the personnel.

A consequence of the accounting basis used is that sharp fluctuations in expenditure can occur from year to year owing to the onset or completion of school building projects which, by their nature, are sporadic.

3. STATISTICAL UNITS IN THE DATA COLLECTION

3.1 STUDENTS ENROLLED

3.1.1 THE NUMBER OF STUDENTS ENROLLED

All tables from ENRL, ENTR, GRAD and CLASS questionnaires request data on students.

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.

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).
- 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 vol.2 "UOE tables and instructions for their completion and submission", Section 9).

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.

- 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.

Another statistic that can be used to measure the activity of students is **the number of registrations:** the count of enrolments within the reference period.

The number of students enrolled and the number of registrations 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. **The number of registrations is however NOT collected in the UOE data collection.**

3.1.2 MOBILE/INTERNATIONAL STUDENTS

All tables from ENRL, ENTR, GRAD and CLASS questionnaires request data on all students, including mobile/international students. Tables ENRL-6, ENRL-7, ENRL-8A, ENRL-8B, ENRL-8C, GRAD-1 and GRAD-3 ask for specific information on mobile/international students (see section 4.6 for definitions).

3.2 NEW ENTRANTS AND ENTRANTS

Tables ENTR-1, ENTR-2 and ENTR-3 request data on entrants and new 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.

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.

Students can be either ***entrants*** to a specific level of education or ***continuing students***.

❍ ***An entrant*** is a student who is enrolled into a programme during the current reference period but who was not enrolled in that programme during the previous reference year**.**

Entrants can be either ***new entrants*** into a level of education or ***re-entrants***.

❖ ***New entrants into a level of education*** are students who, during the course of the current reporting period, enter 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 (e.g. by virtue of credits gained for work experience or courses taken at another level).

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

❖ ***Re-entrants into a level of education*** are students who return to a level of education following a period of absence of at least one year from studying at that same level. Thus, re-entrants 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.

Re-entrants can be further sub-classified as entrants who previously obtained a certification at that level (who are referred to ***returnees to a second programme***) ***or as entrants*** who previously did not obtain a certification at that level (who are referred to as ***returnees to a first programme***).

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

For each level of education, the sum of ***Entrants (New entrants and* R*e-entrants into a level of education)*** and ***Continuing students*** should equal the total number of students enrolled as reported in ENRL1a.

3.2.1 NEW ENTRANTS INTO LEVELS OF EDUCATION

Table ENTR-1 and ENTR-2 request data on new entrants into a level of education.

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

Non-citizen 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 into 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*

into this level. If national statistics count entrants to a programme as new entrants into a level of education, then this must be documented.

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 into the programme, but should not be included in the count of new entrants into the level.

3.2.2 NEW ENTRANTS INTO FIELDS OF EDUCATION

Table ENTR-3 request data on new entrants into fields of education.

❍ ***New entrants into a field of education*** are students who have not been enrolled before in this field at this level. The new entrant into a field may be a new entrant also into the level, or can be a re-entrant or a continuing student, enrolled in other fields the previous years. All new entrants into the level of education are however also new entrants into a field.

A new entrant into a field of education is a student who started a programme within a new field of education during the actual school-year.

Students which enter into multiple fields during the reference year should be reported in each of the fields and thus be multiple counted. If the student enters into more than one programme within the same field, he/she should however be counted only once.

☞ For example, a student entering programmes Teacher training (ISC 141) and Education science (ISC 142) should be counted as an entrant in both these fields but only once in the broad field of Education (ISC 14), but only once in the row Total: All fields of education.

☞ A student entering programmes Teacher training (ISC 141) and Mathematics and statistics (ISC 46) should be counted once in both these fields and once also in the broad fields of Education (ISC 14) and of Science (ISC 4), but only once in the row Total: All fields of education.

The narrow fields therefore will not sum up to the broad fields and the broad fields will not sum up to the total, Total: All fields in row A1 – except if no student has entered multiple fields.

Annotations

♦ Some countries do not have data on new entrants. These countries should use the best substitute available (in the worst case the total number of entrants) and document this. 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.

3.3 GRADUATES, GRADUATIONS AND FIRST-TIME GRADUATES

Tables GRAD-1, GRAD-2, GRAD-3 and GRAD-4 request data on **graduates**.

Tables GRAD-2 and GRAD-4 also request data **on first-time graduates.**

Table GRAD-5 requests data on **graduations**.

3.3.1 GRADUATES DURING THE REFERENCE CALENDAR YEAR

Graduates are those who **successfully complete** an educational programme during the reference calendar year.

Students should fulfil simultaneously some pre-set requirements for a successful completion, which include:

- attendance requirements (be enrolled and attend fully the final year of a programme) **and**

- demonstration that they have acquired the expected skills and knowledge of someone at the level of education of the programme completed.

Countries should apply their *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.

The requirement to demonstrate that the student has acquired the expected skills and knowledge of someone at the level of education of the programme completed can be accomplished through either:

- passing a final, curriculum-based examination or series of examinations; or

- accumulating the specified number of study credits throughout the programme; or

- a formal assessment of the skills/knowledge acquired by the student during the programme (where no formal examinations exist).

In all cases, a successful outcome should result in certification which is recognised within the educational system and the labour market.

In some countries, students enrolled in a given ISCED level may complete a programme and/or obtain a qualification after a period of time, which may be considered too short for the purposes of classification as successful 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.

☞ NEW since the 2005 data collection:

- the decision not to collect graduates from ISCED 6 for degrees **below** the PhD/Doctorate degree. Even if the programmes are considered as ISCED 6 programmes, the degrees are considered not to be counted in the UOE data collection as ISCED 6 graduations for comparability reasons. See chapter 2 for further details.

- in a few countries, there are ISCED 6 degrees **above** PhD/Doctorate degrees. The number of graduates in these post-doctorate degrees are now included in a separate column in GRAD-3, GRAD-4 and GRAD-5. For most countries, this column should be coded with 'a' (not applicable).

Graduates should be reported in the reference calendar year in which all of the pre-set requirements for successful completion are finally met.

☞ For example, a student who was enrolled and has completed (attendance requirement) the final year of an upper secondary programme earlier than the reference calendar year A, but passed the final examination (requirement for successful completion) during the year A, should be counted as a graduate of ISCED 3 in the reference calendar year A.

A student who has not completed 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.

3.3.2 GRADUATES AND GRADUATION

Graduates refer to head-counts – the individual is only counted once per reference year even if he or she has obtained multiple qualifications in multiple fields within a category of qualification.

Graduations refer to the number of qualifications taken during the reference period. One graduate is counted once for every qualification obtained.

GRAD-1, GRAD-2, GRAD-3 and GRAD-4 collect data on graduates. No double-counting of individuals who have graduated from more than one qualification during the year is allowed within the same category of qualification (ISCED 3A, 3B etc, ISCED 5A - 1st degree, ISCED 5A - 2nd and further degrees, ISCED 5B - 1st qualification, ISCED 5B 2nd and further qualifications). Graduates, who qualify for and receive more than one qualification within the same category of qualification, should be reported only once.

GRAD-5 collects data on graduations. Graduates who award more than one qualification within different fields are counted in each of these fields.

3.3.3 FIRST-TIME GRADUATES

GRAD-2 and GRAD-4 also collect the number of first-time graduates: GRAD-2 for those who have graduated from ISCED 3 and ISCED 4; GRAD-4 for those who have graduated from ISCED 5A (first and second degree) and from ISCED 5B (first and second qualification) for the first

time during the reference year. First-time graduates only include graduates in the reference year that have never been graduated from programmes of the ISCED level and programme destination requested in the column. The number of first-time graduates is in general smaller than the total of all graduates in the reference year.

The ***flow of graduates*** within the reference period records the number of students who have graduated in the reference period. Graduates in the reference period can be either ***first-time graduates*** or ***repeat graduates***.

A ***first-time graduate*** is a student who has graduated for the first time at a given level of education – or in the case of ISCED 5, in type 5A or type 5B programme – in the reference period. So, if a student has graduated multiple times over the years, he or she is counted as a graduate each year but as a first-time graduate only once.

Double-counting of individuals across categories over time is permissive (i.e. a student obtaining a first-time 5A degree in the reference calendar year who had obtained a 5B qualification in an earlier calendar year should be reported as first-time 5A graduate).

In ISCED 5A and 5B, the first-time graduates normally graduate from a 1st degree/qualification in the national degree structure. It may however occur in some countries that students also graduate for the first time from 2nd or further degrees. These students should of course be included as first-time graduates in column 19 according to the unduplicated count method.

☞ In the UK, students can graduate for a first-time with the Bachelor, which is a first degree. Students can graduate for the first time with the MBA as well, which is a second degree. In UK 25% of the students which graduated from MBA has not obtained a first degree but have been admitted in MBA because of professional experience. In this case, the sum of first time graduates will include this 25% percent of students that are first time graduates from a second degree.

3.3.4 UNDUPLICATED COUNT METHOD

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 (see table below), System A offers a short first degree with 3-years duration and a second degree with 5-years cumulative duration. System B offers only a long first degree programme with 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 year programmes, and 11 per cent for 5 year 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.

	Cohort	yr. 1	yr. 2	yr. 3	yr. 4	yr. 5	Graduation rate	
	(entering)	1st degree			2nd degree		1st degree	2nd degree
System A	100	33			11		22 %	11%
System B	100	25					25%	

3.3.5 GRADUATIONS BY FIELD OF EDUCATION

Table GRAD-5 collects data on the number of graduations by field of education, in the sense that students graduating from more than one qualification in different fields the same reference year should be counted in each of these fields. If the qualifications are within the same field, the graduate should however be counted only once.

☞ A student graduated both from the field of Teacher training (ISC 141) and from the field of Education science (ISC 142) should be reported in both these fields, but only once in the broad field of Education (ISC 14) and only once in the row Total: All fields of education.

☞ A student graduated both from the field of Teacher training (ISC 142) and in the field of Mathematics and statistics (ISC 46) should be reported in both these fields and once also in the broad fields of Education (14) and of Science (4), but only once in the row Total: All fields of education.

The narrow fields will therefore not sum up to the number of graduations in broad fields and the broad fields will not sum up to the total of all fields, if some students have graduated in more than one field during the reference year.

3.4 REPEATERS

Table ENRL-3 request data on 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). A repeater is one who repeats predominantly the same subject matter within the programme.

♦ Data on repeaters are collected only for students enrolled in general and academic educational programmes.

3.5 EDUCATIONAL PERSONNEL

Tables PERS-1 and PERS-2 request data on Teachers (ISCED 0-4) and Academic staff (ISCED 5-6) and on School level management personnel and Teachers aides (ISCED 0-3). Data collection on all types of personnel employed in educational institutions will continue on a non-annual basis, as a part of the system of ad-hoc modules in the UOE data collection. The next data collection on all types of education personnel is foreseen in 2007 or later.

Educational personnel comprises all those employed in educational institutions (as defined in section 5.3) covering both instructional and non–instructional institutions.

The coverage of the term *Education personnel* is broad in that it

INCLUDES:

- Those involved in student instruction
- Those providing professional support for students (whether it is academic support or health/social support)
- Those involved in the management and administration of the education service (both inside and outside of school); and
- Personnel who support the maintenance and operations of the schools.
- *Personnel temporarily not at work* (e.g. for reasons of illness or injury, maternity or parental leave, holiday or vacation).-
- Personnel working for enterprises that provide services to schools or other educational institutions as sub-contractor **–** are included **if** the personnel hired by the subcontractor are working exclusively or mainly for the school / educational institution throughout the period of the contract. For example, if the preparation of school meals is subcontracted to a catering company, but staff are working exclusively at the school for which they provide food they should be included as if they were employed by the educational institution

EXCLUDES:

- If services are subcontracted and the personnel cannot be distinguished from other non-education services provided by the subcontractor, the personnel should be excluded 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.
- *Retired teachers* including those who retire early regardless of whether their salaries are still reported amongst the expenditure on teacher salaries in the finance data.
- Educational personnel in the *work-based component* of combined school and work-based programmes**.** This approach is designed to improve comparability across countries because virtually no country is able to report personnel in the work-based component. This exclusion, however conflicts with the coverage of the student data where both the work and school based elements are normally counted. For the calculation of student-staff ratios, therefore, it is necessary to collect a version of student full-time equivalents which similarly excludes the work-based element.

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 the **primary or major functions** performed by staff 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:

3.5.1 INSTRUCTIONAL PERSONNEL

3.5.1.1 CLASSROOM TEACHERS AND ACADEMIC STAFF

Table PERS-1 (and ad-hoc module on all types of personnel employed in educational institutions) requests data on classroom teachers (ISCED 0-4) and academic staff (ISCED 5/6).

❍ ***In ISCED levels 0-4: Classroom Teachers*** This sub-category covers professional personnel involved in direct student instruction: it involves the planning, organising and conducting of group activities whereby students' knowledge, skills and attitudes develop as stipulated by educational programmes

The classification **INCLUDES**:

- Classroom teachers;

- Special education teachers in whichever setting they teach;

- 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,

but **EXCLUDES**

- Educational staff who have some teaching duties but whose primary function is not teaching (e.g. it is managerial or administrative).

- Student teachers, teachers' aides, and paraprofessionals

❍ ***Academic Staff (ISCED 5-6)*** - This sub-category **INCLUDES**:

- Personnel whose primary assignment is instruction, research, or public service.

- 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,

- 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 **EXCLUDES** student teachers, teachers' aides and paraprofessionals.

3.5.1.2 TEACHER AIDES

Table PERS-2 (and ad-hoc module on all types of personnel employed in educational institutions) requests data on teachers aides (ISCED 0-3).

❍ ***Teacher Aides (ISCED 0-4)***

This category **INCLUDES**:

- Non-professional personnel who support teachers in providing instruction to students,

- Teachers' aides and other paraprofessional personnel who are employed on a full-time or part-time basis by an education system.

It **EXCLUDES** student teachers or other personnel who do not get paid for their employment.

3.5.1.3 TEACHING/RESEARCH ASSISTANTS (ISCED 5/6)

Only the ad-hoc module on all types of personnel employed in educational institutions requests data teaching/research assistants (ISCED 5/6).

❍ ***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 usually graduate students who hold such titles as teaching assistant, teaching associate, teaching fellow, research assistant, or equivalent personnel with other titles.

3.5.2 PROFESSIONAL SUPPORT FOR STUDENTS

Only the ad-hoc module on all types of personnel employed in educational institutions requests data on teaching/research assistants (ISCED 5/6).

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 covers 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 covers all personnel whose primary responsibility is to support the academic program of students. It **INCLUDES**:

- All staff included under ***Pedagogical support***, as well as

- Other professional support staff employed in tertiary education institutions.

❍ ***Health and Social Support*** covers 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.

3.5.3 MANAGEMENT/QUALITY CONTROL/ADMINISTRATION

3.5.3.1 SCHOOL LEVEL MANAGEMENT PERSONNEL

Table PERS-2 (and ad-hoc module on all types of personnel employed in educational institutions) requests data on School level management personnel.

❍ ***School Level Management Personnel (ISCED 0-4)*** covers 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 **EXCLUDES** however receptionists, secretaries, clerks, and other staff who support the administrative activities of the school.

❍ At **ISCED 5-6**, ***School Level Management*** this staff sub-category covers 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.

3.5.3.2 HIGHER LEVEL MANAGEMENT

Only the ad-hoc module on all types of personnel employed in educational institutions requests data on higher level management.

❍ At ***ISCED 0-4, Higher Level Management*** covers 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, and also

- Other administrative / management positions that are specific to the tertiary education sector.

3.5.3.3 SCHOOL LEVEL ADMINISTRATIVE PERSONNEL

Only the ad-hoc module on all types of personnel employed in educational institutions requests data on school level administrative personnel.

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

❍ At **ISCED 5-6**, ***School Level Administrative Personnel*** covers:

- 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.

Higher level administrative personnel

❍ At all ISCED levels ***Higher Level Administrative Personnel*** covers 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.

School level management with teaching responsibilities – some analysis will wish to record the teaching responsibilities of all staff whether classified as instructional personnel or not. For this purpose, 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"**.

3.5.4 MAINTENANCE AND OPERATIONS PERSONNEL (ISCED 0-6)

Only the ad-hoc module on all types of personnel employed in educational institutions requests data on Maintenance and Operations personnel (ISCED 0-6).

❍ At *all* ISCED levels, ***Maintenance and Operations*** Personnel covers 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,

- 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.

3.5.5 COVERAGE OF DATA ON PERSONNEL

Activity remains a criterion for the inclusion of teacher and other personnel. As a consequence early-retired teachers (or other personnel) 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 4.9. 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.

3.6 CLASS SIZE

Questionnaire CLASS-1 requests data on average class size for primary and lower secondary education.

In general, the calculation of ***average class size*** is simply the total number of pupils divided by the total number of classes. Students attending **special needs programmes** should be

excluded from this data collection in order to simplify the questionnaire and to ensure comparability between countries.

At primary and secondary education levels, class size is computed on the base of the **division concept**.

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.

In term of methodology, two distinct methods are found in countries in the presentation of statistics on average class size:

- average based on the concept of **"division"**

- average based on the concept of **"group".** 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 classes (e.g in modern or ancient languages). In fact, pupils can be enrolled in a class and follow different partitions in the programme.

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 though 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. CLASSIFICATION CRITERIA IN THE DATA COLLECTION TABLES

4.1 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.

4.2 FIELDS OF EDUCATION

Tables ENRL-5, ENRL-6, ENTR-3 and GRAD-5 request data by 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 education and training defined in the FIELDS OF EDUCATION AND TRAINING - MANUAL (EUROSTAT, 1999, available at the following address:
http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/measuring_lifelong/classifications/isced97_fields&vm=detailed&sb=Title.

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".

4.3 TYPE OF EDUCATIONAL INSTITUTIONS

4.3.1 BASIC DEFINITION OF EDUCATIONAL INSTITUTIONS

Educational institutions are defined as entities that provide either educational core or peripheral goods and services to individuals and other educational institutions.

Remark:

Even if an entity is classified as an educational institution, this does not imply that all of its expenditure is included.

☞ 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 do not fall under the scope of the UOE data collection, e.g. child care services.

4.3.2 INSTRUCTIONAL AND NON-INSTRUCTIONAL EDUCATIONAL INSTITUTIONS

Educational institutions can be either *instructional* or *non-instructional* institutions.

Instructional educational institutions are those that provide ***educational programmes*** for students that fall within the scope of education statistics (see chapter 3).

Non-instructional educational institutions are educational institutions that provide education- related administrative, advisory or professional services for individuals or other educational institutions.

Remark:

Whether or not an entity qualifies as an educational institution is not contingent upon which public or private 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.

Non-Instructional Educational Institutions include the following entities:

Entities administering educational institutions: 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 analogous bodies in the private sector (e.g. diocesan offices that administer Catholic schools, and agencies administering admissions to universities).

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 item c below).

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.

Entities providing ancillary services: separate organisations that provide such education-related services as vocational and psychological counselling, placement, transportation of students, and student meals and housing. 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 and personnel committed to the education-related services they provide are included in the data collection. In that sense, general-purpose units of public authorities are treated as educational institutions to the extent that they provide services to schools or students.

Institutions administering student loan or scholarship programmes: examples are the Swedish CSN and the German *BAFÖG Ämter*.

Entities performing curriculum development, testing, educational research and educational policy analysis: 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).

4.3.3 CLASSIFYING BETWEEN PUBLIC AND PRIVATE INSTITUTIONS

Tables ENRL-1a, ENRL-1a_Adult, GRAD-1, GRAD-3, FIN_ENRL-2, FINANCE-1, FINANCE-2, PERS_ENRL-2, PERS-1 and CLASS-1 request data distinguishing between public and private institutions.

4.3.3.1 BASIC CLASSIFICATION CRITERIA

Educational institutions are classified as either ***public*** or ***private.*** Private institutions are further classified between ***government dependent private*** and ***independent private institutions***.

The classification between ***public*** and ***private*** is made according to whether a public agency or a private entity has the ultimate control over the institution. *Ultimate control* is decided with reference to who has the power to determine the general policies and activities of the institution and to appoint the officers managing the school. Ultimate control will usually also extend to the decision to open or close the institution. As many institutions are under the operational control of a governing body, the constitution of that body will also have a bearing on the classification.

An institution is classified as **public** if it is controlled and managed:

- Directly by a public education authority or agency or,

- 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

- Its Governing Board consists mostly of members not selected by a public agency.

Remarks:

Classification criteria: In classifying educational institutions as either public or private, only the school-based component of combined school- and work-based programmes is 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 is 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 is reported under the "public" heading.

- Source of funds: The extent to which an institution receives its funding from public or private sources does not determine the classification status of the institution between public and private. 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.

- **Ownership**: 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.

- **Regulation**: Privately managed but publicly funded schools may be subject to some regulation or control by public authorities, but these institutions are nevertheless be classified as private, provided that they are ultimately subject to private control. Public 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 all of which may be shared between a public authority and a Governing Board. Also, 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.

- **Legal basis**: 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.

4.3.3.2 DIFFICULT CASES FOR CLASSIFICATIPON BETWEEN PUBLIC AND PRIVATE INSTITUTIONS

- Public authorities in many countries 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

- 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.

4.3.3.3 CLASSIFYING BETWEEN GOVERNMENT DEPENDENT AND INDEPENDENT PRIVATE 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 either receives 50 per cent or more of its core funding from government agencies or one whose teaching personnel are paid by a government agency – either directly or through government.

An **independent private** institution is one that receives less than 50 per cent of its core funding from government agencies and whose teaching personnel are not paid by a government agency.

The "**Core funding**" refers to the funds that support the basic educational services of the institutions. It therefore **EXCLUDES**:

- 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.

Tuition fees and other fees paid to institutions by students are **not** considered government funds unless the fees are financed by government scholarships or loans to the students or households **and** the student has no choice but to use the fee in that class of institution.

The classification of institutions as government-dependent or independent is 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 depends 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 are considered to be government-dependent, even if it happens that some individual schools in the class receive less than a majority share of core funds.

4.4 GRADE

Tables ENRL-3 and ENRL-4 request data on grades.

Students at the primary and secondary level of education are classified by the grade in which they are enrolled.

A **grade** is a stage of education within which a group of students (class or classes), usually of a similar age, study approximately the same curriculum. First grade usually corresponds to the first year of ISCED 1. Students generally remain within the same grade for the duration of the school year and on successful completion, proceed to the next grade the following year. If a grade is not successfully completed then it may be repeated.

Students taking subjects in more than one grade should be allocated to the grade where they spend the greatest amount of their time.

4.5 AGE

Tables ENRL-1, ENRL-1_Adult, ENRL-4, ENTR-2, GRAD-2, GRAD-4 and PERS-1 request data by age.

According to the common reference point for ages, students and teachers are classified by their **age as of 1st January (2004 for academic year 2003/2004)** for most countries, or the date filled in the header of the corresponding data collection table. Age at 1st January 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".

For example, in a country whose school year runs from September 2003 to August 2004, a teacher born on 1st January 1975 will be reported as aged 28, whereas a teacher born on 2 January 1976 will be reported as aged 27.

The choice of a common reference date, such as 1st January, across all countries can however be problematic when the school years being reported vary greatly between countries. This particularly applies in Australia, New Zealand and Korea where the school year begins early in the year and so a reference date of 1st January would record students' ages at the end of the school year. This is in contrast to most other countries where the 1st January reference date falls towards the start of the school year. This anomaly may affect the comparability of net enrolment rates by single year of age, particularly before and after compulsory schooling. Therefore, in those countries where the choice of 1st January would fall at the end of the school year it is more appropriate to reference the ages at some time closer to the start of the school year and use population data on that same basis in calculating participation rates.

Where the available data on enrolment or graduates or educational personnel for a country refer to the age of pupils at some date other than December 1st, data providers should re-distribute total enrolment data or educational personnel numbers 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 1st January under the assumption that one quarter of any given age-group enrolled on September 30th attain a higher age within the following three months.

4.6 MOBILE/INTERNATIONAL STUDENTS

Tables ENRL-6, ENRL-7, ENRL-8A, ENRL-8B, ENRL-8C, GRAD-1 and GRAD-3 request data on mobile/international students. These UOE 2005 tables are considered a full-scale pilot and it is not likely that all the break-downs to capture mobile/international students will be included in following data collections. The three data requesters will draw their conclusions and propose amendments or further instructions in 2006.

Mobile/international students are those who are leaving their country of origin and move to another country with the objective to study. Data on mobile/international students have been increasingly used within the organisations of the three data requesters. It has been clear however that the data collected previously to the 2005 UOE data collection are not appropriate for measuring all mobile/international students.

In the UOE data collection, data have up to the 2004 UOE data collection been collected on country of citizenship of students in ISCED 5-6 and on citizenship status and non-resident/resident status in all ISCED levels. Citizenship alone is however not an appropriate and sufficient variable to measure in-coming and out-going students.

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

It is thus of the utmost importance to improve the reporting by other criteria than citizenship. In the 2005 UOE data collection new concepts are introduced to better capture student mobility across countries:

- **Country of citizenship** (kept for time-series reasons and as an important variable to measure participation rates of specific communities within countries)

- **Country of permanent residence** (to identify physical mobility)

- **Country of prior education** (to identify mobility between education systems as a proxy for physical mobility wherever the residence criterium cannot be applied, e.g. EU countries)

4.6.1 COUNTRY OF CITIZENSHIP

Tables ENRL-6, ENRL-7, ENRL-8A, ENRL-8B, ENRL-8C, GRAD-1 and GRAD-3 request data on country of citizenship.

Most countries have data on country of citizenship, which in most cases is a clear and well-defined variable.

Students are ***non-citizens students*** if they do not have the citizenship of the country for which the data are collected.

- Normally *citizenship* corresponds to the nationality of the passport which the student holds or would hold. Countries unable to provide data or estimates for non-citizens on the basis of the passport held should fill other parts of the data collection on mobile/international students depending on the concept available in their data sources (country of permanent or usual residence, country of prior education).
- Distinguishing between students that are **citizens from EU-countries** and students that are **citizens from non-EU countries**. The membership count of the EU should correspond to the membership as it was in the year to which the data relate and not the membership at the time of reporting the data. If the membership changed during the reference period, the data collection should stipulate whether the membership that applies is that at the start or the end of the reference period. The membership of the EU up to April 2004 was: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. This is used for the last time for reporting in the 2005 UOE data collection.
- Distinguishing between **non-citizens students resident in reporting country** and **non-citizens students who received their prior education in the reporting country** from all non-citizens students. This distinction is essential for analyses of international student mobility across countries, it is thus essential to provide this information whenever possible.

4.6.2 COUNTRY OF PERMANENT OR USUAL RESIDENCE

Tables ENRL-6, ENRL-7, ENRL-8A, GRAD-1 and GRAD-3 request data on country of permanent or usual residence.

Permanent or usual residence in the reporting country or in other countries should be counted according to the national legislations and no attempt is done to harmonize. Legislation concerning residence can vary widely between countries and countries are asked to complete the tables in the way they can apply the concept of "permanent or usual residence". In practice, distinguishing between “resident” and “non-resident” students can be done in a number of ways, for example according to whether students hold a student visa or permit or had a foreign country of domicile in the year prior to entering the education system of the country reporting data.

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 resident student.

4.6.3 COUNTRY OF PRIOR EDUCATION

Tables ENRL-6, ENRL-7, ENRL-8B, GRAD-1 and GRAD-3 request data on country of prior education.

Prior education refers to the education which qualified for entrance to the ISCED level the student is enrolled in. Prior education refers to ISCED 3 or 4 for students enrolled in ISCED 5A or 5B and to ISCED 5A for students enrolled in ISCED 6.

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

Table ENRL-1a requests data distinguishing between school-based and combined school- and work-based 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 2.5)

- 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.

In *school-based programmes* instruction takes place (either partly or exclusively) in educational institutions. These include special training centres for vocational education run by public or private authorities or enterprise-based special training centres if these qualify as educational institutions. These programmes can have an on-the-job training component, i.e. a component of some practical experience at the workplace.

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. 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).

Note that 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.

- 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.

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

Tables ENRL-1, ENRL-1_Adult, ENRL-1a, ENRL-1a_Adult, PERS_ENRL-2 and FIN_ENRL-2 request data on mode of study of students (full-time and part-time).

Students should be classified between full-time and part-time on the basis of ***study load of the student*** within the reference period. 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.

4.8.1 MEASURES OF STUDY LOAD FOR STUDENT PARTICIPATION

Ideally the ***study load*** should be measured in terms of the ***academic value or progress*** which the study represents e.g. student X's study load in the reference year equates to one unit of progress towards a qualification whereas student Y's study equates to 2 units of progress. Such an approach requires an integrated framework of qualifications/study which incorporates relative academic values for each educational programme. The ***progress towards a qualification*** focuses 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.

If countries do not have such systems/data (and few typically do) student study load should instead be measured in terms of the ***time/resource commitment*** of the student. For study that is predominantly class-room based, an adequate proxy for this would be ***time in classroom***. ***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 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 in education, either part or full-time.

4.8.2 CLASSIFICATION INTO FULL-TIME AND PART-TIME STUDENTS

The definition of a full-time and of a part-time student therefore depends on which measure is being used for student study load

- **Academic value/progress**:

- a ***Full-time student*** is one whose study within the reference period represents an academic value (e.g. number of study units towards a qualification) that would typically be achieved with a full-time commitment of time by the student **and** if they would normally be expected to be in the programme for the entire school/academic year. A full-time commitment of time equates to 75% or more of the typical school week as it applies locally at that level of education.

- Otherwise the student should be recorded as ***part-time***.

So for example, if a qualification is made up of 4 units and it would normally take a full-time commitment of time (75% or more of the typical school week) to complete 1 unit in the reference year, then a full-time student is one whose study is planned to complete at least 1 unit in the reference year. Any student whose study is planned to result in the completion of less than 1 unit should be recorded as part-time.

Time commitment:

- a ***Full-time student*** is one whose commitment of study time (both institution and non-institution based) represents 75% or more of the school week, as it applies locally at that level of education **and** if they would normally be expected to be in the programme for the entire school academic year.

- a ***Part-time student*** is one whose commitment is less that 75% of the school week or a student who is expected to be in the programme for less that the full school year. For example, if the school week is typically 30 hours and the student attends the institution for 15 hours and is expected to engage in a further 10 hours study outside the institution (e.g. at home), then the student should be recorded as a full-time student.

Time in classroom (for study that is predominantly classroom based):

- a ***Full-time student*** is one who attends school for at least 75% of the school week as it applies locally for that level of education **and** if they would normally be expected to be in the programme for the entire school academic year.

- Otherwise, they should be considered ***part-time***.

Pre-primary level is a special case, since this level sometimes involves large non-educational components which can lead to large variations in the daily/weekly duration of these programmes. So, students enrolled in *pre-primary* programmes should be considered full-time if they attend school for at least 75% 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.

In practice, the national data available to countries tends to dictate which of these methods countries use to categorise students as full-time or part-time and these tend to vary by level of education. For pre-primary, primary and secondary student attendance at the institution or time in classroom is used most frequently, whereas at tertiary level study load is more likely to be measured in terms of teaching hours and credit accumulation.

An important consequence of each of these three definitions is that a part-time student will usually require a longer period of time than a full-time student to complete an equivalent programme.

- 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.

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 weighted 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.

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 3.1.

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.

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

Tables ENRL-1a, ENRL-1a_Adult, PERS_ENRL-2 and FIN_ENRL-2 request data on full-time equivalent students.

The conversion of headcounts to full-time equivalents (FTE) aims to standardise a student's actual load during the reference period against the normal load for the reference period. As the measures of study load may be based on a period which is different from the reference period (e.g. number of hours per week rather than number of hours per school year), it is important to ensure that the study load is calculated over the whole reference period.

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

- Where data and norms on individual participation are available, then the calculation of FTE should be:

*FTE=[actual study load/normal study load] * [actual duration of study during reference period/normal duration of study during reference period].*

So, for example if the normal study load for a full-time student during the reference period is 30 hours per week for 20 weeks, a student who studies 30 hours per week for 10 weeks would have an FTE of 0.5. Given the definitions of full-time and part-time stated in the previous section, it is of course possible for a full-time student to have an FTE of less than 1.

- Where data and norms on individual student study load are 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. The estimation of FTE for part-time should then be estimated on the best available data which reflects the rules described above. 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.
- 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.

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 vol. 2 "UOE tables and instructions for their completion and submission", Section 9).

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

Tables PERS-1 and PERS-2 request data on personnel according to their employment status (full-time and part-time).

4.9.1 TEACHERS' WORKING TIME, TEACHING TIME AND NON-TEACHING TIME

Teachers' specified working time is defined as the number of hours per year that a full-time teacher is expected to work according to the formal policy of that country. This should, *exclude* overtime, non-specified preparation time, and days that the school is closed for holidays, according to the formal policy of that country.

Where there is no national policy specifically defining teachers' working time but teachers are under the jurisdiction of other labour regulations (such as regulations for public employees), the working time of the relevant part of the labour force is used instead.

Teachers' working time includes both ***teaching time*** and ***non-teaching time***.

4.9.2 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.

❍ **Full-time educational personnel**: Educational staff employed for at least 90% of the normal or statutory number of hours of work for a full-time employee over a complete school year is classified as a full-time educational personnel for the reporting of head-count data.

❍ **Part-time educational personnel**: Educational staff employed for less than 90% of the normal or statutory number of hours of work for a full-time employee over a complete school year is classified as a part-time educational personnel.

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

Classification of teachers involved in multi-educational programmes. The classification of teachers whose work is divided for example between different types of institutions (public/private), different levels of education, different functions, between vocational and general programmes or between teaching and administration, is problematic.

☞ 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).

The guidance that countries should follow in these circumstances differs depending on whether the reported data are *headcounts* or *full-time equivalents*. In all such cases, the following provisional recommendation is made:

♦ For the reporting of **head-counts**, firstly, the total numbers of teachers should be accurately split into those who are full-time and those who are part-time by aggregating their statutory working hours over all of their activities. The FT and PT numbers should then be pro-rated between education levels, educational programmes, types of institutions, and functions on the basis of the most appropriate data available relating to the splits. For example, in the absence of any better information, the numbers of teachers who work exclusively in public and private institutions respectively can be used to pro-rate the numbers who share their time between the two.

So, for example, if 100 teachers are teaching both ISCED 2 and ISCED 3, and their working hours are such that this equates to 60 FT and 40 PT teachers, then the 60 and the 40 would be pro-rated

between ISCED 2 and ISCED 3 on the basis of the relative proportions of teachers teaching solely ISCED 2 and those teaching solely ISCED 3.

As a last resort, pupil numbers can be used as the basis for pro-rating though this will introduce circularity in the calculation of staff to student ratios.

- For the reporting of **full-time equivalents**, data on teachers should be apportioned to the different levels, educational programmes, types of institutions, and functions based on the proportion of their working time that they spend on each function.

So, for example a teacher whose working time totals 0.8 of an FTE and who spends 50 per cent of their time teaching ISCED 2 and 50 per cent teaching ISCED 3 should have 0.4 FTE allocated to each of ISCED 2 and ISCED 3.

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.

4.9.3 REDUCTION TO FULL-TIME EQUIVALENTS

Tables PERS-1 and PERS-2 request data on full-time equivalent personnel.

- 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 FTE calculation is 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).

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 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.

Note also that, given the definition of Full-time and Part-time not all staff recorded as Full-time in the statistics will have an FTE of 1.0. For example employees who work 90% of the

normal or statutory working hours of a full-time employee should be recorded as Full-time but their FTE should be 0.9.

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

Tables PERS-1 and PERS-2 request data on teachers by orientation of educational programmes.

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.

5. EDUCATIONAL EXPENDITURE

Tables FINANCE-1 and FINANCE-2 request data on educational expenditure.

5.1 EXPENDITURE ON EDUCATIONAL GOODS AND SERVICES AND ITS LOCATION IN RELATION TO THE EDUCATIONAL INSTITUTION

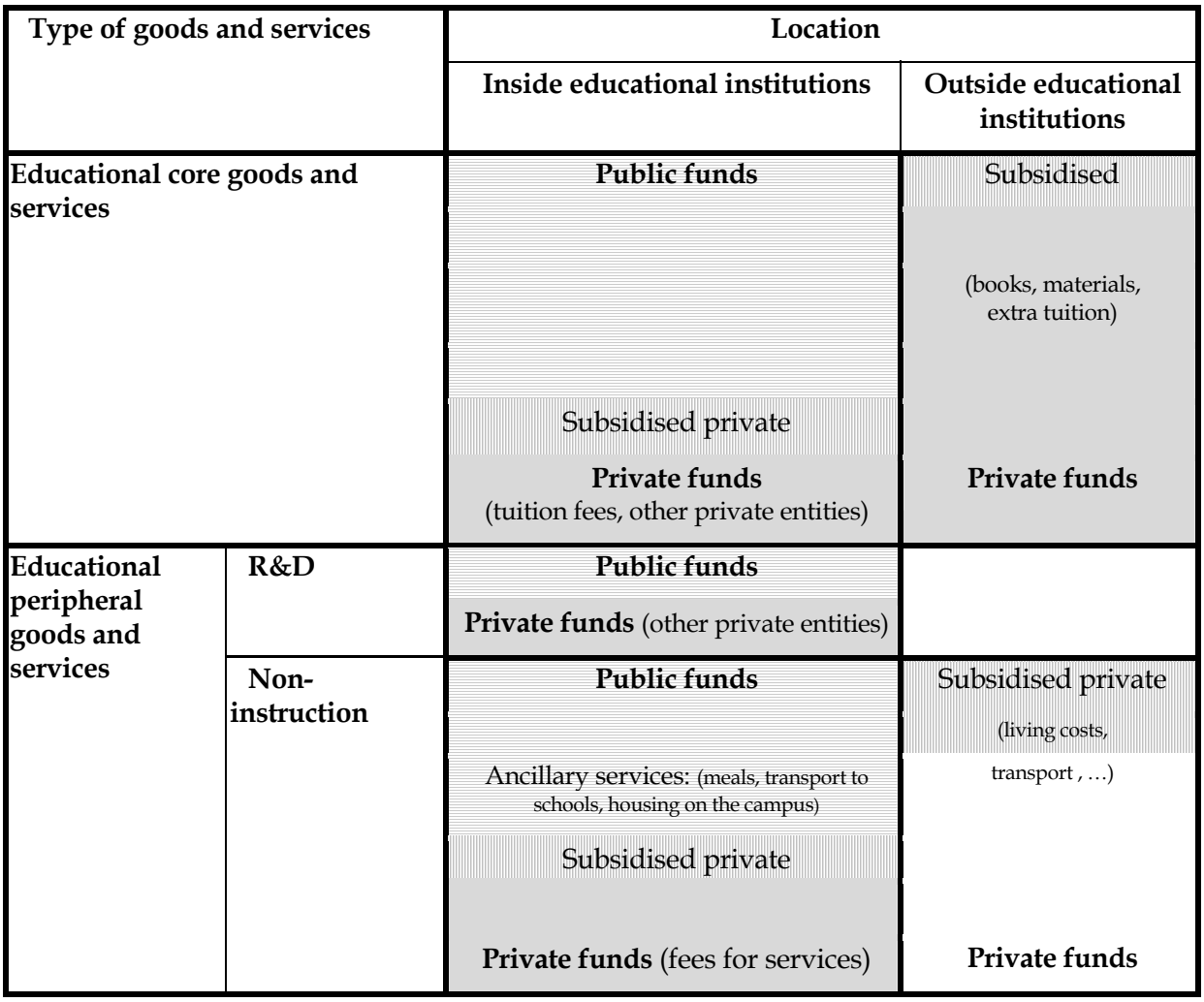
Educational goods and services can be purchased inside or outside educational institutions.

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;
- Subsidies to students from government and other private entities; plus
- Transfers and payments to other private entities.

All (public and private) 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.

Figure 2. Framework for educational expenditure



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

Educational core goods and services:

- The first row, labelled "**educational core goods and services**", includes all expenditure that is directly related to instruction and education. It covers 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 or services provided by institutions for the general public.

The columns in figure 1 reflect the location of the different service providers in relation to educational institutions (i.e. inside or outside educational institutions).

- The first column, "inside **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 educational 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 educational institutions.

The third dimension in the framework – **sources of funds –** is represented by the colours in the diagram.

- Public sector and international agencies sources of funds are indicated by horizontally shading
- Households and other private entities are indicated by the dark shading
- Private expenditure on education that is subsidised by public funds is indicated by the vertically shading.

The white, un-shaded cells indicate the parts of the framework that are ***excluded*** from the coverage of the data collection on finance.

Thus coverage of the finance data (see section 6.1.4 for more details):

INCLUDES:

- Goods and Services of educational institutions: All direct public, private and international expenditure whether educational or non educational (e.g. ancillary services) but with one or two exceptions (see below)and ;
- Goods and Services purchased outside educational institutions: private expenditure on educational goods and services; plus
- Public subsides to students for student living costs regardless of where or how the student spends these subsidies.

EXCLUDES:

- R&D outside of educational institutions – as this is clearly outside the scope of education
- Private, non-subsidised expenditure on student living costs outside of educational institutions

5.1.1 EXPENDITURE ON GOODS AND SERVICES INSIDE EDUCATIONAL INSTITUTIONS:

The following list indicates the coverage within the expenditure data of goods and services provided by educational institutions**:**

5.1.1.1 INCLUSION OF:

5.1.1.1.1 Educational core goods and services

- Instruction (i.e., teaching costs), including in teaching hospitals as it relates to the teaching of medical students;
- Educational goods (books, materials, etc) provided by institutions;
- Training of apprentices and other participants in combined school and work-based educational programmes at the workplace.
- Administration;
- Capital expenditure and rent;
- Special educational needs; guidance;

5.1.1.1.2 Educational peripheral goods and services:

- R&D

- Educational research and curriculum development (including in teaching hospitals- but see below);
- Research and development performed at higher education institutions;

- Non-instructional goods and services (Ancillary Services)

- Student transportation, school meals, student housing, boarding, student health services;
- Services for the general public provided by educational institutions;

5.1.1.2 EXCLUSION OF:

- Child care or day care provided by schools and other instructional;
- Expenditure on educational activities outside the scope of the data collection (e.g. continuous education, private language courses, leisure courses,)
- Activities of public authorities (e.g. Ministries etc.) that is not directly related to education (e.g. culture, sports, youth activities etc.) **unless** it is provided as ancillary service
- Teaching hospitals' expenditure as it relates to patient care and other non-education related general expenditure; and
- Debt servicing (i.e. payments of interest or repayments of the principal);

- Depreciation of capital assets and capital charges;
- Research and Development outside of educational institutions

5.1.1.3 DIFFICULT CASES

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

5.1.1.3.1 Expenditures on research and development (R&D)

All expenditure on research performed at universities and other institutions of tertiary education is INCLUDED in educational expenditure, 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. (See also "Expenditure for Teaching Hospitals", below).

In general the coverage of R&D expenditure at the tertiary level must be consistent with the coverage of data reported as Higher Education R&D (HERD) in the OECD/DSTI data collection which follows Frascati Manual (OECD, Paris 1993) (See Annex 1).

5.1.1.3.2 Expenditure for teaching hospitals

Expenditure by or on teaching hospitals (sometimes referred to as academic hospitals or university hospitals) is **EXCLUDED** from educational expenditure, particularly all costs of patient care and other general expenses of academic hospitals, even if such expenses are paid by the education authorities.

However, expenditure by or on teaching hospital that it is directly and specifically related to the training of medical personnel, expenditure on R&D at teaching hospitals to the extent that it is included in the OECD/DSTI data collection on R&D are included .

5.1.1.3.3 Expenditure on ancillary services

"Ancillary services" are defined as services provided by educational institutions that are peripheral to the main educational mission.

The two main components of ancillary services are:

- **student welfare services** - 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**, these include such things as museums, radio and television broadcasting, sports, and recreational or cultural programmes.

All such ancillary services in educational institutions are **included** in the coverage of the expenditure data **except for** day or evening child care provided by pre-primary and primary institutions.

5.1.1.3.4 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 or subsidised transport of students to travel to school or for students' use more generally.

In exceptional cases special public subsidies to students will be paid 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 carefully singled out** in order to attribute them as public subsidies to the institutions receiving them.

5.1.1.3.5 Distinction between ancillary services and special public subsidies in the case of free or subsidised transport for students

Free or subsidised transport can be provided to students in the form of *special school buses* organised to bring the students to the school **or** through *free/subsidised tickets* for (local) transport companies which can either be for the students' general use or for the main purpose of funding the students' transport to school.

- **Special school buses -** Free or subsidised transportation of students provided through a special school bus service is classified as an ancillary service offered by the educational institution.
- **Free/subsidised tickets** for (local) transport companies - if the main purpose of the expenditure is to fund the students' transport to school, the expenditure is classified as expenditure on an ancillary service. If, however, the purpose of the expenditure is to fund the general use of the transport system by the student, then the expenditure is recorded as subsidies to students' in kind. Note also in the latter case, that the allocation of the subsidy must be contingent on the recipient being a student

5.1.1.3.6 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.

5.1.1.3.7 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.

5.1.1.3.8 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 is 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 does 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 EUR 10 billion, of which EUR 6 billion is the estimated cost of training and EUR 4 billion is the cost of apprentices' salaries, social security contributions, and other compensation, only EUR 6 billion are included in rows E3 and E3a. EUR 4 billion are not considered part of educational expenditure.

Remark:

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.

5.1.1.3.9 Measurement of expenditure for contributions on pension schemes

Employee costs reported for educational institutions should ***include*** the cost to the employer of contributions for retirement schemes for the currently active educational employees.

Retirement expenditure is defined, in principle, as the actual or imputed expenditure *by employers or third parties* (e.g. social security agencies, pension agencies or finance ministries) to finance retirement benefits for *current* educational personnel. Pension contributions made *by the employees* themselves, whether deducted automatically from their gross salaries or otherwise, are ***not included*** in retirement expenditure of educational institutions.

Depending on the types of retirement schemes in operation in a country, estimates will need to be provided. Three different types of pension systems exist:

- In a ***fully funded***, contributory pension system, employers pay contributions for each of their current employers into a fund which is sufficient to pay the required pension when the employees retire. In this case, the expenditure on retirement to be reported equates to the current employer contribution to the pension fund.

- In a ***completely unfunded*** retirement system, there are no ongoing contributions into a fund by the employer and instead the government meets the cost of retirement as it arises. This is the type of scheme (sometimes called "pay as you go") used to provide pensions for civil servants in many countries. In this case, the expenditure on retirement must be estimated or imputed.

- Likewise, in ***partially funded systems*** where employers contribute to a retirement system but the contributions are inadequate to cover the full costs of future pensions, it is necessary to impute the contributions which make-up the short fall. Thus, retirement expenditure is the sum of actual employers (or third party) contributions and the imputed contribution necessary to cover the projected funding gap.

UOE educational finance data providers of countries having partly funded or unfunded pension systems **should follow the definitions of the System of National Accounts 1993 (SNA93) as well as the European System of Accounts (ESA95) for EU countries to report imputed social contributions** to the international organisations administering the UOE data collection.

In practice, **t**wo different methodologies delivering identical results are accepted by experts in National Accounts at international level:

The *benefits-paid method* which is used by several Member States of the European Union to impute social contributions estimates all or most of government imputed social contributions based on the unfunded employee social benefits paid, less employees' contributions.

The *wage-share method* which is used by some other Member States of the European Union to impute social contributions by deriving wage shares from various sources such as the contribution rates used in other (funded or unfunded) schemes or contribution rates derived from actuarial estimates undertaken by government for its employer's schemes.

UOE educational finance data providers **should apply the methodology the National Accountants of their country use to estimate imputed social contributions when assembling National Accounts data according to SNA93 or ESA95 (see annexes 2 and 3 of the present document).**

5.1.2 EXPENDITURE OUTSIDE EDUCATIONAL INSTITUTIONS

The coverage of student or household expenditure related to education that occurs outside institutions is as follows:

INCLUDE

- *Educational* goods and services purchased outside institutions, in the free market

- Student living costs **if they are subsidised** through financial aid to students by public or private entities

EXCLUDE

- Student foregone earnings,

- Expenditure on student living costs outside educational institutions **which are not subsidised** through financial aid to students by public or other private entities.

5.1.2.1 STUDENTS AND HOUSEHOLDS EXPENDITURE ON EDUCATIONAL SERVICES AND GOODS PURCHASED OUTSIDE EDUCATIONAL INSTITUTIONS

It **INCLUDES**:

- Expenditure on educational goods which are requested for participation in the programmes and which are therefore imposed on the student either directly or indirectly by the educational institutions. Examples are school uniforms, books requested for instruction, athletic equipment, materials for arts lessons.

- Expenditure on educational goods which are not required by institutions, but which students and households choose to buy in support of their study in the programmes in scope of the data collection. Examples are additional books or computer, learning software to be used at home.

- Fees for private out of school tuition related to the educational programmes being pursued. This will be the main type of educational service purchased outside institutions. Outside school tuition is restricted to tuition intended to support the participation in programmes that fall under the scope of the data collection Expenditure on tuition that is not related to programmes in scope of the data collection must be excluded.

- Purchases from commercial enterprises operated or sponsored by educational institutions (e.g. university bookstores) are regarded as expenditure outside educational institutions.

Expenditure on educational goods and services purchased outside institutions will usually be measured by household expenditure surveys, so the definition of goods and services will tend to be dictated by those used in the national survey instrument. Care therefore needs to be taken to ensure that this does not result in double counting with expenditure on educational institutions and that student living costs are not included.

☞ 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.

5.1.2.2 STUDENT LIVING COSTS

It is only included if it is subsidised through financial aid to students by public or private entities. The rationale for including these subsidies is that in many countries, public and private scholarships, grants, or loans are provided to students not primarily or exclusively to cover the tuition fees charged by educational institutions but rather to subsidise student living expenses. It is therefore desirable to capture this expenditure in order to maintain a complete picture of total investment by public and other private entities in education.

Note, however, that fees paid by private households to educational institutions for ancillary services (i.e. student and household expenditure for living costs which are paid to educational institutions) as for student accommodation is included in private expenditure regardless of whether it is subsidised or not.

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

5.2.1 THE STRUCTURE OF TABLE FINANCE-1

Table FINANCE-1 is headed "Educational expenditure by source, type of transaction, and level of education".

The expenditure is classified by sources of funds:

- **Government (central, regional, local)**,

- **International agencies and other foreign sources**,

- **Households** and

- **Other private entities** (including firms and religious institutions and other non-profit organisations).

Moreover, three types of financial transactions can be distinguished:

- Direct expenditure/payments on educational institutions;

- Intergovernmental transfers for education and

- Transfers to students or households and to other private entities.

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.

Individual rows in the table FINANCE-1 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

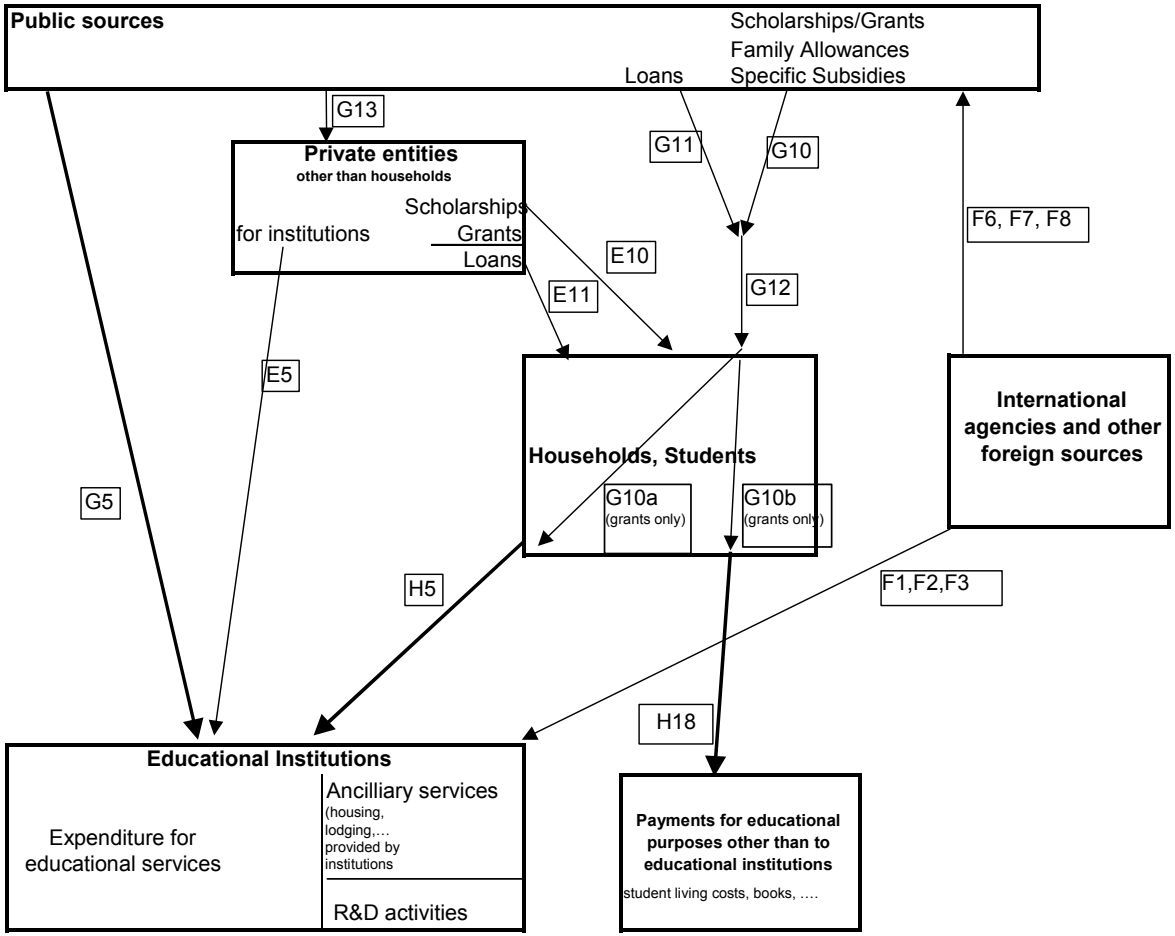
H = household expenditure

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.

5.2.2 GOVERNMENT (PUBLIC) SOURCES

Public expenditure refers to spending of public authorities at all levels. Expenditure that is not directly related to education (*e.g.,* culture, sports, youth activities, etc.) is not included unless provided as ancillary services. Expenditure on education by other ministries or equivalent institutions, for example Health and Agriculture is included. It includes subsidies provided to households and other private entities (often in the form of financial aid to students) which can be attributable to educational institutions (e.g. fees) or not (e.g. private living costs outside of institutions).

Table FINANCE-1 recognises three main types of government expenditure on education:

- Direct expenditure on educational institutions,

- Intergovernmental transfers for education, and

- Transfers or other payments from governments to households and other private entities.

This applies for expenditure at central, regional and local levels of government.

5.2.2.1 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 classified in three levels:

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

Remarks:

- **Ambiguities of classification**: 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 must be designated local, not regional. If there are four or more levels, the second level usually must 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 is reported as expenditure of regional level of government (e.g. the Stadtstaaten Hamburg, Bremen and Berlin in Germany).

- **Regional and local government responsibilities**: 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.

5.2.2.2 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.

The following list provides an indication of what expenditure needs to be included or excluded.

INCLUDED:

- Expenditure on retirement

EXCLUDED:

- Expenditure on servicing debts (i.e. payments of interests on the amounts borrowed for educational purposes and repayments of the principal).
- Tuition fees that the families of students enrolled in public educational institutions are paying to regional or local government rather than directly to educational institutions **to avoid double counting** as they are included under household payments to institutions.

5.2.2.2.1 Direct expenditure designated for capital

Table FINANCE-1 request data on direct expenditure designated for capital in specific rows (C5a, R5a, L5a and G5a).

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.

5.2.2.2.2 Direct expenditure designated for ancillary services

Table FINANCE-1 request data on public expenditure designated for ancillary services 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.

5.2.2.2.3 Direct expenditure for R&D activities

Table FINANCE-1 request data on Direct public expenditure for R&D activities in rows G1 to G5, and also separately in row G5c.

Note that although direct public expenditure for R&D activities are now reported separately, it is still desirable to include them in rows G1 to G5.

Note that the concept reflected in this category is the amount actually spent on R&D activities which are **financed by central, regional or local levels of government**.

5.2.2.3 INTERGOVERNMENTAL TRANSFERS

In table FINANCE-1, net transfers payments for education from central to regional government 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 government should be reported in row R8.

"**Intergovernmental transfers**" are transfers of funds designated for education from one level of government to another. They are defined as **net** transfers **from a higher level to a lower level of government**

Every transfer from one level to another level 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.

Remarks:

Negative transfers: 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**.

Passing of central government transfers to local government though regional government: Sometimes, 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.

5.2.2.4 PUBLIC PRIVATE TRANSFER

Transfers and payments for education to private entities can be divided into two distinct categories:

- **Public subsidies to households** (e.g. in the case of financial aid to students, a distinction is made between two forms of aid,

(1) Scholarships and other grants

(2) Child allowances contingent to student status,

(3) Special public subsidies in cash or in kind that are contingent on student status and

(4) Student loans), including those not attributable to household payments for educational institutions, such as subsidies for student living costs.

- **Public subsidies to other private entities** (e.g. government transfers and certain other payments (mainly subsidies) to other private entities such as commercial companies and non-profit organisations).

Transfers to households and other private entities **EXCLUDE**:

- **Any tax benefits** to students or their families, such as tax credits or deductions from taxable income
- **Allowances that are independent of the educational status** of a child.

Remark on reporting practice: government scholarships, child allowances contingent on student status and loans must 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 must be included in intergovernmental transfers from central to regional governments.

5.2.2.4.1 Scholarships and other grants

In table FINANCE-1, Government scholarships and other government grants to students and households are 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 which are contingent upon student status.

Scholarships and grants

This category **INCLUDES**

- Public scholarships and
- All kinds of similar public grants, such as fellowships, awards and bursaries for students.

Government scholarships that are channelled through educational institutions for administrative purposes are considered government transfers to students.

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 special subsidies **EXCLUDE**

- 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 special subsidies **INCLUDE**:

- 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

- **INCLUDE** allowances that are **contingent upon student status**
- **EXCLUDE** allowances that are **independent of the educational status** of a child

☞ 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 are included in scholarships and other grants, but the allowances for those aged 18 and below are excluded.

Scholarships and other grants attributable to educational institutions

In FINANCE-1, 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.

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.

Some 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 volume 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 is 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 is reported as subsidised expenditure outside institutions, mainly on student living expenses, in row G10b.

5.2.2.4.2 Student Loans

In table FINANCE-1, Public loans to students and/or households are reported in rows C11, R11, L11 and G11 depending on which level of government provides them.

Students loans are reported on a gross basis - that is, without subtracting or netting out repayments or interest payments from the borrowers (students or households). Thus, student loan expenditure represent the total value of loans paid by government to students during the reference year. The cost to government of servicing these loans (i.e. interest rate subsidies and the cost of default payments) is not included.

Students loans

INCLUDE

- Public loans to students and/or households (gross amount)

EXCLUDE

- Interest payments and repayment of the principal,

- Government subsidy to private lenders of student public sector loans (included in public subsidies to other private subsidies),

- Government payments to compensate for defaults under programmes of government-guaranteed private loans (included in public subsidies to other private subsidies).

Remarks:

Governments also support loans paid to students by private financial institutions (e.g. through interest subsidies, the cost of guaranteeing the loans, the cost of default payments). These are ***not included*** as public subsidies to households but as public transfers to other private entities (rows C13, R13, L13 or G13).

Student loans provided by private financial institutions (rather than directly by a government) are reported as loans from other private entities to students (row E11).

5.2.2.4.3 Transfer and payments to other private entities

In table FINANCE-1, Government transfers and certain other payments (mainly subsidies) to other private entities (commercial companies and non-profit organisations), reported in rows C13, R13, and L13, **INCLUDE**, for example:,

- Transfers to business or labour associations that provide adult education within scope of the collection;
- Subsidies to private companies (or labour organisations or associations of such entities) for the provision of training at the workplace as part of combined school and work-based programmes, including apprenticeship programmes; and,
- Interest rate subsidies or defaults guarantee payments to private financial institutions that provide student loans.

Remark:

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. 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.

Similarly, government purchases of services from private companies or non-profit organisations are 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 are reported as public subsidies to other private entities in rows C13, R13 and L13.

Consequently they are included as well in rows E3 and E5a as spending by other private entities.

Note that it is crucial to report all public payments for expenditure at the workplace also as subsidies in G13 and as expenditure in E3 and E5a.

5.2.2.5 TOTAL EXPENDITURE BY LEVEL OF GOVERNMENT

In table FINANCE-1, 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 cannot be summed without first netting out duplication through intergovernmental transactions.

5.2.2.6 EXPENDITURE FOR ALL LEVELS OF GOVERNMENT COMBINED

In table FINANCE-1, **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 if they have not also been included in expenditure by individual levels of government.**

A distinction is made between:

- Direct public expenditure on education by service provider (rows G1 to G5),

- Direct expenditure designated for capital (row G5a),

- Direct expenditure designated for ancillary services (row G5b),

- Direct expenditure designated for R&D activities (row G5c),

- Public transfers and other payments to students and to other private entities (rows G10 to G14) and

- The combined total of direct public expenditure on educational institutions and public transfers and payments to the private sector appears (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.

5.2.3 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. Consequently, educational expenditure based on loans from intergovernmental organisations, such as World Bank loans, are fully included as funds from intergovernmental organisations.

- **EXCLUDE** repayments to international organisations are included. They are only reported in the supplementary table, FINANCESUP-2, providing data on debt servicing.

International funds are reported as follows in FINANCE-1:

- Direct foreign payments to public, government-dependent private and independent private institutions, respectively, in rows F1, F2 and F3. An example would be a research grant from a foreign corporation to a public university.

Direct foreign payments to all type of educational institutions for R&D activities, already included in rows F1 to F5, are reported separately in row F5c. Note that although payments for R&D activities are now reported separately, it is still desirable to include them in rows F1 to F5.

☞ For example, a grant from a foreign corporation to a public university should be reported in rows F1, F5 and F5c.

- Sub-totals of direct expenditure on private or all educational institutions, respectively in rows F4 and F5 are provided for sub-totals of direct expenditure on private (F4) or all educational institutions (F5).

- Transfers of funds from international sources to central, regional, and local governments respectively in rows F6, F7 and F8.

- Total of all transfers to governments in row F9.

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

Note 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.

5.2.4 PRIVATE SOURCES

5.2.4.1 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.

Note that 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.

☞ 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."

5.2.4.2 HOUSEHOLD EXPENDITURE

In general, the living expenses of students (costs of housing, meals, clothing, recreation, etc.) are **excluded**.

However, the following expenses are **included**:

- Transfers to households and students (public and private scholarships, grants, or loans), although the student living costs themselves are not to be taken into account,

- Fees on ancillary services furnished by educational institutions and

- Costs borne by private households for the purchase of educational goods and services.

5.2.4.2.1 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

- 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
- Fees paid for 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.

Note that:

- Payments from students and households to institutions are 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.

- Scholarships and other financial aid to students from governments or other private entities are **not be netted out**, even if such aid is administered by, or passed through, the institutions.

Student/household payments to public educational institutions

- INCLUDE tuition fees that the families of students enrolled in public educational institutions are paying to regional or local government rather than directly to the educational institutions
- BUT in order to avoid double counting of such payments, the tuition fees received by governments are not counted as part of government expenditure on the institutions in question. For example, the tuition fee paid by an upper secondary student attending a municipally operated school to the municipality is 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.

5.2.4.2.2 Fees for ancillary services

In FINANCE-1, private fees on ancillary services, already included in rows H1 to H5, are reported separately in row H5b. Note 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).

5.2.4.2.3 Payments on educational goods and services purchased outside educational institutions

In FINANCE-1, rows H15 to H18 report expenditure on educational goods and services purchased by households and students outside educational institutions, in the free market.

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 are invited to 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.

5.2.4.2.4 Total household expenditure

In FINANCE-1, 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.

5.2.4.3 EXPENDITURE OF OTHER PRIVATE ENTITIES

The table FINANCE-1 allows for two types of expenditure by other private entities:

- Direct payments to educational institutions and
- Financial aid to students or households.

5.2.4.3.1 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.
- Public subsidies to other private entities for the provision of training at the workplace (already reported in rows C13, R13 and L13) are included as well in rows E3 and E5a as spending by other private entities.

Payments by other private entities to public institutions, government-dependent private institutions, and independent private institutions are 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.

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

Expenditure made by businesses within the work-based element of the combined school-and-work-based educational programmes which fall within the scope of the UOE (3.5) data collection are included. It is considered 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 is reported as public subsides to other private entities in rows C13, R13 and L13. Consequently, they are included in rows E3 and E5a as spending by other private entities.

5.2.4.3.3 Fees paid to institutions for ancillary services

In FINANCE-1 private fees on ancillary services, already included in rows E1 to E5, are reported separately in row E5b. Note that although fees for ancillary services are now reported separately, it is still desirable to include them in rows E1 to E5. Similar rows on ancillary services by source of funds are provided for the public sector (G5b) and for other private entities (H5b).

5.2.4.3.4 Payments of other private entities designated for R&D activities

In FINANCE-1 payments of other private entities for R&D activities, already included in rows E1 to E5, are reported separately in row E5c. Note that although payments designated for R&D activities are now reported separately, it is still desirable to include them in rows E1 to E5. Similar rows on payments designated for R&D activities by source of funds are provided for the public sector (G5c) and for international agencies and other foreign sources (F5c).

5.2.4.3.5 Financial aid to students

In FINANCE-1, Total private financial aid to students (scholarships plus loans) is reported in row E12.

Financial aids to students include

- Scholarships and other grants provided to students by other private entities (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 (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, private loans must be reported as gross amounts, without the subtraction of payments of interest or repayments of the principal by the borrowers.

Note that 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, must also be reported as public subsidies to other private entities in row G13.

5.2.4.3.6 Total expenditure of other private entities

In FINANCE-1 expenditure of other private entities is classified as follows:

- Total payments by other private entities to educational institutions in row E5.

- Total financial aid from other private entities to students or households in row E12.

- Total educational expenditure by other private entities (the sum of rows E5 and E12) in row E20.

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

5.2.5.1 TOTAL PRIVATE EXPENDITURE

In FINANCE-1 total expenditure by the private sector, consisting of expenditure by students and households and expenditure by other private entities, are reported in part P of the table. They are classified by type of institution:

- Payments to public institutions (row P1),

- Payments to government-dependent private institutions (row P2),

- Payments to government-independent private institutions (row P3).

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).

Row 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.

5.2.5.2 COMBINED PUBLIC, PRIVATE, AND INTERNATIONAL EXPENDITURE

In FINANCE-1 total educational expenditure from all sources - public, private, and international - is reported in part N of the table. Again they are classified by type of institution:

- Payments to public institutions (row N1),

- Payments to government-dependent private institutions (row N2),

- Payments to government-independent private institutions (row N3)

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.

Combined public, private and international expenditure designated for ancillary services, already included in rows N1 to N5, is reported separately in row N5b. Note that although combined public, private and international expenditure designated for ancillary services is now reported separately, it is still desirable to include them in rows N1 to N5.

Combined public, private and international expenditure for R&D activities, already included in rows N1 to N5, is reported separately in row N5c. Note that although combined

public, private and international expenditure for R&D activities is now reported separately, it is still desirable to include them in rows N1 to N5.

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**.

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

5.3.1 THE STRUCTURE OF TABLE FINANCE-2

In table FINANCE-2 "Education expenditure by service provider, expenditure category, and level of education", the expenditure is classified by

- Expenditure categories (current and capital expenditure)

- Type of service provider (public institutions, government-dependent private institutions, and independent private institutions), *without regard to sources of funds (whether they are public or private)*. These expenditure figures are intended to represent the total cost of services provided by each type of institution.

The function of this table 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.

5.3.2 EXPENDITURE BY TYPE OF INSTITUTION: PUBLIC AND PRIVATE INSTITUTIONS

Table FINANCE-2 consists of five parts. Individual rows in the table FINANCE-2 are identified by combinations of letters and numbers, in which the letters correspond to funding sources, as follows:

A = Public and private institutions;

X = Public institutions;

W = All private institutions;

Y = Government dependent private institutions and

Z = Independent private institutions.

Note that the expression "expenditure by or on (…) institutions" **is used 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).

Remarks:

- **Unavailable/missing data**: 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, is invited to indicate this by inserting appropriate missing data** codes in the relevant columns of parts Y and Z.

- **Consistency with data from table Fin-ENRL2:** Countries are asked to report enrolment data in table Fin-ENRL2 which are fully compatible with the scope of the finance table. **Moreover, efforts should be made to ensure complete consistency between missing codes used in tables Fin-ENRL2 and FINANCE-2.**

- **Complete data**: Countries are asked to 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 must be reported as missing rather than with understated figures.

5.3.3 EXPENDITURE BY RESOURCE CATEGORY

In table FINANCE-2, within educational institutions, expenditure is classified into current expenditure and capital expenditure. The distinction between these two categories is the standard one used in national income accounting.

- **Current expenditure (rows A6 to A14, X1 to X14, W6 to W14, Y1 to Y14 and Z1 to Z14)** 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. Minor expenditure on items of equipment, below a certain cost threshold, is also reported as current spending.

- **Capital expenditure (rows A15, X15, W15, Y15 and Z15)** 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.)

Separate rows for identification of any expenditure on ancillary services (rows A30, X30, W30, Y30 and Z30) and on R&D activities (rows A40, X40, W40, Y40 and Z40), included in current and capital spending, are included in table FINANCE-2.

5.3.3.1 CURRENT EXPENDITURE

Current expenditure is broken down, into expenditure on compensation of personnel, and expenditure on other (non-personnel) resources.

5.3.3.1.1 Expenditure on compensation of personnel

In table FINANCE-2 expenditure on compensation of personnel (rows A6, X6, W6, Y6 and Z6) is classified in two ways:

- by type of personnel (rows X1, X5, Y1, Y5, Z1, Z5)

- by type of compensation (rows X7 to X9, Y7 to Y9)

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 head-teachers 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 head-teachers' compensation is included in compensation of teachers. The remaining three quarters are included in compensation of other educational, administrative and professional personnel.

- The **Non-teaching staff category** includes, in addition to head-teachers and other administrators of schools, 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 is reported in rows X1 and X5 respectively, and on the corresponding rows of parts Y and Z of the table.

Breakdown of expenditure on compensation of personnel

Total expenditure on compensation of personnel, shown in rows X6 and Y6 are broken down by type of compensation as follows:

Salaries (rows X7 and Y7) 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, i.e. pension schemes (rows X8 and Y8), 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. (see specific instructions included in section 5.1.1.3.9. and annex 2 of this manual)

Expenditure on other non-salary compensation (row X9 and Y9) (fringe benefits) 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.

Note that 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.

5.3.3.1.2 Current expenditure other than compensation of personnel

In table FINANCE-2 all expenditure on goods and services used in education other than compensation of educational personnel is reported in rows A13, X13, W13, Y13 and Z13. This type of current expenditure includes the following categories:

- 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 are also 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.

- Required payments other than expenditure on educational resources and services.

☞ For example, the property taxes that educational institutions are required to pay in some countries are reported here.

Remark:

Financial aid to students **is not included** in Finance 2 **UNLESS it is provided by the institution's own funds** in form of a reduction in tuition fees or waivers of fees **and it exceeds household payments to institutions.**

5.3.3.2 CAPITAL EXPENDITURE

The capital expenditure reported in FINANCE-2 represents 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. In other words, capital outlays must be recorded in the years in which they are made. The cost of the depreciation of capital assets is not included.

For example, if a school building costing 10 million Euros is constructed in 2004, the full 10 million Euros should be reported as capital expenditure for 2004, 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, 2003 to 2004, with 7 million Euros of the cost of construction paid in the first year and 3 million Euros in the second year, capital outlays of 7 and 3 million, respectively, should be included in the 2003 and 2004 data.

Capital expenditure **EXCLUDE** expenditure on debt servicing (e.g. interest payments, repayments of the principal). This means that neither interest payments nor repayments of the principal should be counted as part of capital or current spending.

5.3.3.3 ADJUSTMENTS FOR CHANGES IN FUND BALANCES

In table FINANCE-2 adjustments for changes in fund balances are reported in rows A21, X21, W21, Y21 and Z21 (a reduction is entered as a negative amount).

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 can not be attributed to current of capital expenditure. They would distort the distribution by expenditure category. Therefore special rows are provided to record adjustments for changes in fund balances. These rows account for potential differences in funds reported in FINANCE-1 and expenditure by educational institutions reported in FINANCE-2.

5.3.3.4 EXPENDITURE ON ANCILLARY SERVICES

In table FINANCE-2, if for a certain type of service provider (public and private, public, all private, government dependent private, private independent) expenditure on ancillary services is contained under current or capital expenditure, it should be reported separately as well in rows A30, X30, W30, Y30, Z30.

Note that the **expenditure on ancillary services** shown in row A30 of table FINANCE-2 should correspond to row N5b of table FINANCE-1.

5.3.3.5 EXPENDITURE ON R&D ACTIVITIES

In table FINANCE-2, if for a certain type of service provider (public and private, public, all private, government dependent private, private independent) expenditure on R&D activities is contained under current or capital expenditure, it should be reported separately as well in rows A40, X40, W40, Y40, Z40. Note that the **expenditure on R&D activities** shown in row A40 of table FINANCE-2 should correspond to row N5c of table FINANCE-1 and to row SR3 of table FINANCE-SUP3.

5.3.3.6 TOTAL CURRENT AND CAPITAL EXPENDITURE

Total current plus capital expenditure (X14 + X15) is reported in row X20. . Similarly, the totals in sections A, W, Y and Z are reported in rows A20, W20, Y20 and Z20

The tables FINANCE-1 and FINANCE-2 relate to each other as follows:

Row FINANCE-1 N1 equals row X20 + X21 of FINANCE-2;

Row FINANCE-1 N2 equals row Y20 + Y21 of FINANCE-2;

Row FINANCE-1 N3 equals row Z20 + Z21 of FINANCE-2;

Row FINANCE-1 N4 equals row W20 + W21 of FINANCE-2;

Row FINANCE-1 N5 equals row A22 of FINANCE-2.

5.4 INSTRUCTIONS FOR SUPPLEMENTAL TABLE ON DEBT SERVICE (TABLE FINANCESUP-2)

This section provides instructions for table FINANCESUP-2, the supplementary financial table covering expenditure on educational debt servicing.

Expenditure on educational debt servicing is specifically **excluded from** tables FINANCE-1 and FINANCE-2. It is not considered part of either current expenditure or capital expenditure.

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.

5.4.1 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.

For example, if a school building costing EUR 5 million is constructed in 2003, the full EUR 5 million should be reported as capital expenditure for 2003, 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, 2003 to 2004, with EUR 3 million of the cost of construction paid in the first year and EUR 2 million in the second year, capital outlays of 3 and 2 million, respectively, should be included in the 2003 and 2004 data.

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.

5.4.2 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.

5.4.3 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 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).

5.4.4 DISAGGREGATION BY PAYER

The rows of Table FINANCESUP-2 are used to identify the two types of payers of debt servicing expenditure:

(1) **Governments, classified by level**. Debt servicing expenditure by central, regional and local governments is reported in rows D1, D2 and D3 respectively, with the total for all levels of government reported in row D4

(2) **Institutions (service providers), classified by type**. Debt service expenditure of public institutions, government-dependent private institutions, and independent private institutions is reported on rows D5, D6 and D7, respectively, with the total for all types of institutions reported on row D8. Total debt servicing expenditure by all payers (unduplicated) is reported on row D9.

Duplication or double-counting of expenditure must be avoided. 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 payment or as expenditure by public institutions if the university is responsible for making its own payments.

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 is reported by payer. In the event that one entity provides transfers (subsidies) to another entity to cover debt servicing expenditure, the expenditure is classified according to the final rather than the initial payer.

5.5 INSTRUCTIONS FOR SUPPLEMENTAL TABLE ON EXPENDITURE FOR RESEARCH AND DEVELOPMENT OF 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 coverage of R&D expenditure that is covered by the UOE data collection on education statistics and the statistics on Higher Education R&D (HERD) expenditure and

(3) To provide the data needed for comparisons of expenditure on tertiary education net of certain expenditure on research.

5.5.1 DEFINITION OF EXPENDITURE ON RESEARCH AND DEVELOPMENT

Expenditure on R&D is defined according to the OECD Frascati Manual.

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.

Exclude expenditure on independent, organisationally separate, government research institutions in cases where the connection between universities and research institutions is purely administrative.

Remark:

General university budgets: 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.

5.5.2 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.

Mark "yes" in row 2 if all research spending other than the type specifically mentioned above as an exception has been included.

Mark "no" in row 2 if any other category of research spending has been omitted. A country indicating "no" is asked to 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 can be provided if the exact amounts of omitted research spending are unknown.

5.5.3 SEPARATION OF EXPENDITURE ON R&D

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

Note that row SR3 should correspond to row N5c of table FINANCE-1 and row A40 of table FINANCE-2.

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, data providers are asked to list the types of expenditure 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.

Remarks:

If there is full consistency between the UOE and OECD/DSTI data collections, row SR3 is equal to row SR5.

Countries which do not attain full consistency, or which do not participate in surveys on R&D statistics, need to indicate in row SR3 the amount included in SR1 that is attributable to R&D activities.

5.5.4 RELATIONSHIP TO THE R&D STATISTICS

Rows SR5, 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 R&D statistics.

Row SR5: Enter total expenditure on Higher Education Research and Development (HERD), as reported in R&D statistics using the same financial year as the educational expenditure reported in the UOE finance tables.

Rows SR6 and SR7: These rows are intended to clarify any differences between the coverage of research expenditure in the UOE data collection and in R&D statistics.

Remarks:

Indicate by marking yes or no in the right-hand column of **row SR4**, whether the figure for Higher Education R&D (HERD) expenditure on **row SR3** includes any expenditure that is not also included in the figure for expenditure by tertiary institutions given in **row SR1**.

Countries are asked to 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 UOE finance tables.

Countries answering "yes" in **row SR6** are asked to itemise in the space provided the types of R&D expenditure that are included in **row SR5** but not in **row SR1**. The corresponding expenditure amounts can be reported in the right-hand column.

Indicate by marking yes or no in the right-hand column of **row SR7**, whether the figure for total expenditure by tertiary institutions in **row SR1** includes any research expenditure not included in the figure for HERD expenditure in **row SR5**.

Countries are asked to answer "yes" if, for example, the portion of the activities of university teaching staff that might be considered research, rather than teaching is not fully reported in R&D statistics.

Countries answering "yes" on **row SR7** are asked to itemise in the space provided the types of research expenditure included in **row SR1** but not in **row SR5**. The corresponding expenditure amounts can be reported in the right-hand column.

5.5.5 EXPENDITURE ON SEPARATELY FUNDED OR SEPARATELY BUDGETED RESEARCH

Row SR8: 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 SR1**).

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

6. 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.

International Standard Classification of Education (ISCED) is at the heart of international statistics on education and has been since it was first designed by UNESCO in the early 1970s to serve as 'an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally'. The first ISCED (hereafter referred to as ISCED-76) became operational from 1976.

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 since 2002. This is done through the ***implementation of a questionnaire ISCMAP-PROG***.

In the 2005 UOE data collection, countries have agreed to include also an **ISCED-mapping on national qualifications by adding the questionnaire *ISCMAP-QUAL*** . The mapping is expected to improve the metadata on graduates and make it possible to better understand the graduate data and the graduation patterns. Also the possibilities to obtain a qualification without enrolment and successful completion of a programme but by accreditation or recognition will be mapped. The practical guidelines on the completion and documentation of the ISCMAP tables are provided in the vol. 2 **"UOE tables and instructions for their completion and submission"** which is produced annually by the UOE data requesters.

The present chapter summarises 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 are working together with countries to ensure that ISCED-97 is implemented in a uniform manner across all countries covered by the UOE data collection. A qualitative description of selected national programmes that meet specific classification criteria is also presented as example of how the criteria can be properly applied.

7. 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.

7.1 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, is such a programme-based taxonomy which seeks to reduce 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 preparation for more advanced study, qualification for an occupation or range of occupations, or simply an increase of 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 (continuing education is also referred as "adult education" or "non formal education"; for a definition of these terms, see section 3.4). Continuing education activities of all types are **included** in the international education statistics if:

- The activities involve studies with subject content similar to regular educational programmes **or**

- The underlying programmes lead to similar potential qualifications as corresponding regular educational programmes

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.

7.2 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.

In ISCED-97, programmes are assigned to levels of educations. 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, though such progression is more likely between the lower ISCED levels. It also does not preclude the possibility that some participants in educational programmes at a given level – most probably at post-compulsory levels – may have previously successfully completed programmes at a higher level.

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 and theoretical starting ages of participants and theoretical and typical durations of the programmes .

- Typical entrance qualifications and minimum entrance requirements. This may be the successful completion of the previous ISCED level or simply any qualification at the previous or current level. Entry qualifications can also be the demonstration of skills/knowledge/competence or experience that is equivalent to a particular qualification or it can be the completion of a particular number of years schooling. *Minimum entry requirement* are those which it is necessary to have to join programme whereas *typical entry requirements* are those which students have in practice.

- Type of certifications, diplomas, or qualifications awarded upon successful completion of the programme.

- Types of subsequent education for which completers are eligible: the destination for which the programmes have been theoretically designed to prepare students.

- The programme orientation: 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 serves 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).

In the international context

- Fields of education, institutional arrangements and time organisation, should not be used as criteria to distinguish separated programmes.
- Programmes with very few students enrolled should be grouped when it is possible.
- Programmes that are officially available in the regular school system but that have had no enrolment for two consecutive years should be taken out.
- A programme that lasts less than one semester should not be considered long enough to be relevant at the international level.

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 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.

Of key importance is that the allocation of programmes to the ISCED categories based simply on national institutional boundaries should be avoided as institutional structures across

countries are not comparable in terms of the characteristics of the education they provide (e.g. entrance qualifications, theoretical and typical ages of participants and typical programme durations). Similarly, allocating a programme to an ISCED category based simply on the fact that its national name matches the name of the international category must be avoided.

7.3 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

6	Education at the third level, first stage, of the type that leads to a first university degree or equivalent	qualification (5A, 5B)
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	

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

Some educational activities, often those outside the regular education system, cannot be easily mapped to a particular level of education. The first test in these cases is whether they fall within the scope of international education statistics in the first place. For this to be true (see Chapter 3), the activities need to clearly involve organised and sustained communication designed to bring about learning. In the case of non-regular programmes (such as adult or continuing learning programmes in some countries), their content should be equivalent to regular programmes or, alternatively, they should lead to similar or equivalent qualifications.

For such programmes that do fall within scope of the international education statistics, characteristics such as typical entry ages, entry requirements, and programme duration may not be very useful criteria to classify such programmes. This will be the case, for example, as countries move towards a more flexible provision of education, modelled on a life-long learning approach.

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.

8. LEVEL STRUCTURE OF ISCED-97 AND CORRESPONDING CLASSIFICATION CRITERIA

Empirically, ISCED assumes that there exist several main and auxiliary criteria which can help point to the level of education into which any given educational programme should be classified (see section 7.2). 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.

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 1and 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		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.

9. ISCED 0 - PRE-PRIMARY LEVEL OF EDUCATION

9.1 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

INCLUDE early childhood programmes that:

- Are centre or school-based,
- Are designed to meet the educational and developmental needs of children,
- Typically cater for 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,

EXCLUDE early childhood programmes that fail to meet these criteria.

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 criterion 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, only the educational activity should be reported. 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.

9.2 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.

10. ISCED 1 - PRIMARY LEVEL OF EDUCATION

10.1 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.

10.2 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.

10.3 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.

10.4 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.

11. ISCED 2 - LOWER SECONDARY LEVEL OF EDUCATION

11.1 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.

11.2 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[1]. 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.

11.3 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

[1] 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.

11.4 EXAMPLES

11.4.1 ISCED2A

11.4.1.1 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.

11.4.1.2 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).

11.4.1.3 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.

11.4.2 ISCED2B

11.4.2.1 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.

11.4.2.2 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.

11.4.2.3 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*').

11.4.3 ISCED2C

11.4.3.1 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).

11.4.3.2 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.

11.4.3.3 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.

12. ISCED 3 - UPPER SECONDARY LEVEL OF EDUCATION

12.1 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.

12.2 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 5B;
- *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.

12.3 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 controlling 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.

12.4 EXAMPLES

12.4.1 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.

12.4.2 ISCED3A

12.4.2.1 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).

12.4.2.2 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.

12.4.2.3 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.

12.4.3 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.

12.4.4 ISCED3B

12.4.4.1 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.

12.4.4.2 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.

12.4.5 ISCED 3C PROGRAMMES WITH A CUMULATIVE DURATION SIMILAR TO STANDARD NATIONAL ISCED 3A AND 3B PROGRAMMES

12.4.5.1 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.

12.4.5.2 TYPE 2 (PRE-VOCATIONAL OR PRE-TECHNICAL)

Leaving Certificate Applied (Ireland). This 2-year 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.

12.4.5.3 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 year 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.

12.4.6 ISCED 3C PROGRAMMES WITH A CUMULATIVE DURATION (MORE THAN ONE YEAR) SHORTER THAN STANDARD NATYIONAL ISCED 3A AND 3B PROGRAMMES

12.4.6.1 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 programme 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.

12.4.6.2 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.

12.4.6.3 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.

13. ISCED 4 - POST-SECONDARY NON-TERTIARY

13.1 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 standard national 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.

13.2 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.[2]

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.

13.3 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:

13.3.1 POST-SECONDARY, BUT NOT TERTIARY PROGRAMMES FROM AN INTERNATIONAL PERSPECTIVE

13.3.1.1 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

[2] 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 (which would be learned in an ISCED level 3 programme). Stream 3300 courses may include 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.

13.3.1.2 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.

13.3.2 UPPER SECONDARY, SECOND-CYCLE PROGRAMMES

13.3.2.1 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.

13.3.2.2 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.

13.3.2.3 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.

13.3.2.4 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.

14. 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.

15. ISCED 5A

15.1 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.

15.1 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[3]:

⇒ 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 programme orientation, that enough information is available to group degrees and qualifications of similar education content.

[3] 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.

Categories:

- Intermediate[4];
- 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.

15.2 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.

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

[4] 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.

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.

15.3 EXAMPLES

15.3.1 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.

15.3.2 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.

15.3.3 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 includes 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.

15.3.4 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 to a first or second degree depending on whether or not an individual student earned a bachelor's degree first.

15.3.5 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).

15.3.6 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.

15.3.7 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.

16. ISCED 5B

16.1 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.

16.2 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.

16.3 EXAMPLES

16.3.1 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.

16.3.2 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.

16.3.3 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.

16.3.4 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.

17. ISCED 6 - SECOND STAGE OF TERTIARY EDUCATION (LEADING TO AN ADVANCED RESEARCH QUALIFICATION)

17.1 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.

In the UOE 2005 data collection, decisions have been taken not to include in the data collection on graduates, degrees in ISCED 6 below PhD/Doctorate's degrees. This is similar to ISCED 5A, where degrees of shorter duration than 3 years are not counted as ISCED 5A degrees in the UOE data collection even if the qualifications are considered so in the national context. Degrees below PhD may either be considered as intermediate degrees and not counted at all in the UOE data collection, or, if not of intermediate character, be classified as ISCED 5A, 2nd or further degrees. The enrolments may however be counted as ISCED 6 enrolments as it may not be possible to distinguish between students in PhD/Doctorate's programmes and these programmes until the point of graduation.

17.2 EXAMPLES

17.2.1 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.

17.2.2 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).

17.2.3 ISCED 6, POST-DOCTORATE QUALIFICATIONS

In a few countries, there is a second, post-doctorate qualification (Denmark, Czech Republic, France, Germany, Lithuania, Poland, Switzerland, Russia and maybe other countries), which qualify for example for the highest faculty posts. These qualifications have up to now not been reported in the UOE data collection but are included in UOE 2005. The degrees are in Germany and Switzerland called the *Habilitation,* in the Russian Federation *doktor nauk*.

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.

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. EXCERPT FROM SYSTEM OF NATIONAL ACCOUNTS 1993

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.

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 3. GUIDELINES FOR PRACTICAL IMPLEMENTATION OF IMPUTED SOCIAL CONTRIBUTIONS

2.1. OVERVIEW:

Member States of the European Union use different methods to estimate government D.122. Several Member States of the European Union estimate all or most of government D.122 based on the unfunded employee social benefits paid (D.623), less employees' contributions. This method is called the *benefits-paid method*. Some other Member States of the European Union use a percentage of wages and salaries as the main method (*wage-share method* for short). The wage-shares are derived from various sources such as the contribution rates used in other (funded or unfunded) schemes or contribution rates derived from actuarial estimates undertaken by government for its employer's schemes. In some cases, the source data are *notional employer's social contributions* explicitly shown in the accounts of government. These are amounts calculated actuarially by government but which are not actually paid to a fund or social security unit. Some Member States of the European Union use different methods for different groups of government employees or for different government sub-sectors.

The methods chosen often reflect the specific situation in a country. The importance of unfunded schemes operated by government for its own employees varies a lot across countries. In some countries these schemes have been largely or completely abandoned. Also the characteristics of the schemes are very different. The schemes may cover all or most government employees or only specific groups (only officials, only the military, etc.). The unfunded benefits may include those paid to current employees (such as health insurance or maternity leave) or pensions for former employees. Employees may or may not pay some contribution to the schemes. In some countries the number of employees covered by the scheme has been increasing. In other countries the government policy is to reduce the number of employees covered by such schemes gradually, or to change to a different scheme at once. This diversity makes clear that a method that produces good estimates for one country or scheme may be inadequate for the circumstances in another country or scheme.

ESA 95 (§ 4.99) is clear that the benefits-paid method may result in a weak estimate of D.122 (i.e. employer's imputed social contributions) if a significant proportion of D.623 (i.e. unfunded employee social benefits) is pension payments and if the ratio of current employees to pensioners in the unfunded scheme changes significantly.

2.2. ESA AND SNA PRINCIPLES:

ESA and SNA classify social insurance schemes into 3 categories:

- *Social security schemes* operated by government (often pay-as-you-go (PAYG) schemes, benefits not necessarily linked to contributions, units classified in S.1314, no service charge)
- *Private funded social insurance schemes* (benefits typically linked to contributions)
    - Insurance companies and autonomous pension funds (units classified in S.125, service charge)

    - Non-autonomous funds (units classified in the sector of the employer, no service charge)
- *Unfunded social insurance schemes* operated by employers (no separate units, transactions are classified in the sector of the employer, no service charge)

Social insurance schemes organised by government for their own employees are classified either as private funded schemes (if special reserves are recognised) or as unfunded social insurance schemes. (SNA 8.63) Employers' imputed social contributions (D.122) are associated to employers operating unfunded social insurance schemes. These employers may be regarded as operating 'ancillary social security funds'. In practice, unfunded social benefits paid (D.623) are observable whereas the associated D.122 as part of compensation of employees (D.1) needs to be estimated. D.122 is imputed to get a complete measure of labour costs at the time when the work is done. These imputed transactions are then re-routed in the same way as employers' actual social contributions to households and back to the employers' sectors (i.e. to the ancillary social security funds), as households' imputed social contributions (D.612).

ESA 95 (§ 4.99) and SNA 93 (§§ 7.45-7.47) state that, in principle, the amount of D.122 should be determined by reference to the employers' future obligations to provide benefits. Their value should be based on the same kind of actuarial considerations that determine the levels of premiums charged by insurance enterprises. The imputed value should be equal to the amount of social contributions that would be needed to secure the de facto entitlements to the social benefits the employees accumulate. These amounts depend not only on the levels of the benefits currently payable but also on the ways in which employers' liabilities under 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.

Both ESA and SNA accept that the actuarial estimation of imputed social contributions is often not possible in practice. The ESA (§ 4.99) states that "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. Otherwise, the only practical alternative may be to use the unfunded social benefits payable by the enterprise during the same accounting period (after deducting actual contributions made by employees themselves) 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 (less employees' social contributions) may nevertheless provide sufficient estimates of the contributions and associated imputed remuneration."

For pensions, the ESA (ESA 95 § 4.99) specifies that "when *as a result of political events or economic changes*, the ratio between the number currently employed and the number receiving pensions changes appreciably and becomes abnormal, the value of the imputed contributions for current employees should be estimated, and will be different from the actual value of the pensions paid out. A reasonable percentage of wages and salaries paid to current employees can be used for this purpose."

For wages and salaries which employers continue to pay temporarily in the case of sickness, injury, maternity, disability, redundancy etc. the ESA 95 (§ 4.07 b) specifies that "these payments are treated as unfunded employee social benefits (D.623), with the same amounts being shown under employers' imputed social contributions (D.122);"

And footnote to § 4.10 states that "employers' imputed social contributions include an amount equal in value to the wages and salaries which employers temporarily continue to pay in the event of the sickness, maternity, industrial injury, disability, redundancy, etc. of their employees, if that amount can be separated."

As to the time of recording the ESA (§ 4.101) makes a distinction between compulsory and voluntary social benefits. The imputed social contributions which represent the counterpart of compulsory direct social benefits are to be recorded at the time the obligation to pay the benefits arises, i.e. (in principle) in the period during which the work is done by the employees. Imputed social contributions which represent the counterpart of voluntary direct social benefits are to be recorded at the time the benefits are provided. This introduces a potentially difficult distinction when in practice the benefits-paid method is used to estimate D.122 and D.612 from D.623. For voluntary benefits (and ignoring any employees' contributions), the total amounts recorded under headings D.122, D. 612 and D.623 would always have to be identical by definition so that for voluntary contributions the only correct method would be benefits-paid. For contributions that are the counterpart of compulsory social benefits actuarial estimates of the imputed contributions should, in principle, be made. The amounts recorded under D.122 and D.612 would then differ from the benefits recorded under D.623. In practice, this distinction is not very important as voluntary benefits (e.g. ad hoc grants in cases of hardship) can be assumed to be small.

2.3. METHODS CURRENTLY USED IN OLD MEMBER STATES OF THE EUROPEAN UNION

This section describes the methods used by some Member States and the key features of the employers' unfunded schemes. Many governments have two categories of employees: officials and other employees. Often the social insurance arrangements for these two categories are different.

Belgium

Uses the *benefits-paid method*. These benefits concern government officials' *pensions and family allowances*. Public administrative staff not having the status of officials are insured in the private sector. These imputed social security contributions are currently estimated as being equal to actual social security benefits (less employees' social security contributions). For government, the sources are the final accounts. The continued payment of wages and salaries in the event of sickness or maternity cannot be separated and is included in D.11.

Denmark

D.122 for government is estimated based on the *benefits-paid method with correction factor*. D.122 only concerns the pensions of the government officials ("tjenestemænd"). The system has been very stable in the past. Recent policy changes have resulted in the number of officials to decrease so that there are plans to adapt the method.

The central government has introduced employers' contribution of 15% of the gross salary of the officials that are paid to the Ministry of Finance. While these payment are 'notional' in the sense that the budgets of ministries have been raised by the amount of the contributions to be paid, the economic effect is that for a ministry the officials become more expensive than other government employees and that there is an incentive to reduce the number of officials. These notional contributions are probably not based on detailed actuarial calculations and are so far not used in the national accounts. Statistics Denmark plans to investigate how exactly the contribution rates were determined with a view to perhaps use this information in future.

Germany

In German national accounts mainly the wage-share method is used for non-market producers. Only about 5% of total government D.122 is estimated based on the benefits-paid method. For central, state and local governments a *wage-share method* is used: to the pension rate of the general social security scheme 7 percentage points are added and this rate is applied to the wages and salaries of active government officials. The full pension rate is used (i.e. the employers' and the employees' rates taken together). This rate was 19.1% in 2001 (declining from 20.3 in 1997 and 1998). The 7 percentage points top-up mainly serves to cover the health insurance of pensioners, special cover for permanent care (Pflegeversicherung) and an allowance for a pension top-up for non-officials. As to health benefits the system for officials foresees a reimbursement of about 50% of health costs.

Social benefits paid to current employees (i.e. excluding pensions and health benefits to pensioners) are added (*benefits-paid method*). For NPISHs (church officials) the same wage-share is used. The officials now working for the German Railways are still government employees (with the unit classified under corporations). D.122 is estimated as for government (*wage-share method*). The officials now working for the German mail and telecom are covered by a special funded scheme to which government contributes a transfer. For the sub-sector social security funds (S.1314) the *benefits-paid method* is used (S1314 represents about 5% of total government D.122). The Bundesbank provides data for the Bundesbank officials' pensions payments (*benefits-paid method*) – this unit is classified under financial corporations.

The main reasons for Germany to predominately use the wage-share method are (a) historically the effects of the 2nd world war (with many former officials that received pensions), (b) a major wave of making many government employees officials in the 70s and (c) a trend since the early 90s to reduce the number of officials. These effects would have resulted in the benefits-paid method producing weak estimates. The sub-sector social security funds is not affected by such biases: the ratio between active employees and pensioners seems to be reasonably stable so that the benefits-paid method is considered reliable for this small sub-sector.

Greece

For central government the benefits-paid method is used. This flow refers to *pensions*. According to New Cronos, D.122 occurs nearly exclusively for central government (97% of the total).

Spain

For former government officials, the government pays benefits related to *pensions* (incl. survivors' pensions), disability and death. Imputed social contributions are estimated to be an amount equal to the value of the benefits paid minus the social contributions paid by the employees (benefits-paid method). The share of D.122 in D.1 for central government increased significantly in the late 90s. One reason was the re-classification of government units from the central to the regional government.

France

The benefits-paid method is used. The dominant element of government D.122 is central government employees' pensions. There are also some small supplementary benefits included.

Ireland

Public sector pensions are largely unfunded and a special calculation is undertaken annually to assess the value of these schemes to existing employees. This calculation uses the results of an actuarial assessment of unfunded public sector pension schemes undertaken for the year 1997 (i.e. a wage-share type method). Since 1995 new Irish civil servants have been put into the standard social security scheme, so they are not in the unfunded government scheme any more.

Italy

For government units in section L of the NACE, imputed social contributions are calculated as the sum of the costs entered in the budget for social benefits granted to the body's own employees, former employees and their families (i.e. benefits-paid method). These are mainly pensions paid directly and not through a social security fund, various grants, family allowances and compensation for occupational accidents.

Until 1995 the pensions of central government officials were paid by the Treasury. No payments of social contributions were recorded in the budget (therefore they were imputed). Starting from 1996 all public administrations transfer social contributions to the INPDAP (National Institute for Social Security of workers of the Administration).

For non-market activities of NPISHs, imputed contributions were determined by applying to the level of pay the percentage rate in that branch as determined for the whole economy.

Luxembourg

The benefits-paid method is used. The main element of government D.122 is pensions for central government. The employees pay contributions equal to 8% of their gross salary (these contributions are deducted from the benefits paid). For central government, the share of D.122 in D.1 declined in the 90s. The main reason for this was that the employees' contribution rate was raised from 3% to 8% in steps of 1% per year and the pension system was changed (phased-in increase in retirement age, lower rate of increase for pensions paid). The re-classification of some units had also a small effect. Local government employees are not covered by an employer's unfunded scheme.

Netherlands

D.122 of government is quite significant (some 4.4 billion euro in 2001, 18% of D.1 in the case of central government). Only about 12% of government D.122 refers to pension payments for retired military personnel, some 24% refer to insurance against unemployment (wage share method), 18% to health insurance (wage-share method) and some 40% to the continued payment of wages and salaries in the case of sickness (estimate based on absentee rates). Some 7% are other types of social protection (benefits-paid method). For the military pension scheme, a *benefits-paid method with correction factor* has been used up to now. However, as the scheme is small and the method requires a lot of data, this will be changed to a pure benefits-paid method with the next revision.

Austria

The benefits-paid method is used. Benefits covered include the pensions and family allowances paid by federal and state governments and municipalities, less employees' contributions (only federal state). The sources are the final accounts of these governments.

Portugal

The benefits-paid method is used. The unfunded benefits are mainly health benefits of government employees. The government employees are covered by the general social security pension system.

Finland

Mainly refers to payment of pensions. The inventory is not quite clear as to the method used. It seems that initially the benefits-paid method was used but that since the early 1990s the wage-share method is used. In 1988, local government changed over to a funded pension insurance system. The central government continued to pay the pensions of comprehensive and upper secondary school teachers directly to local government. Imputed social contributions are obtained by multiplying the total wages and salaries of comprehensive and upper secondary school teachers by the imputed employment pension insurance percentage. In the accounts of local government, the imputed pension appropriations of such teachers have been entered under employers' imputed social contributions. Until 1997, all pension appropriations of comprehensive and upper secondary school teachers were imputed. Starting in 1998, the future pensions of such teachers also have been progressively funded. The share paid by local government is being raised each year. Consequently, imputed social contributions have gradually declined since 1998.

Sweden

The imputed pension contributions for departments and agencies of central and local government and for State corporations and public service activities are obtained as the difference between contributions actually paid and calculated contributions (i.e. wage-share method). The calculated contribution rates for Swedish government employees are kept in line with other funded schemes operated for the Swedish public sector.

UK

According to the inventory, total economy D.122 for 1995 was 9.5 billion pounds. Of this, roughly:

- 5 bn was redundancy and sick and maternity pay. The method is *benefits-paid*. Some 750 million of this falls on government (Eurostat estimate).
- 1.4 bn were pension top-up payments from central government to local governments' retired teachers (the base pension is a funded scheme, only the top-up is unfunded). The method is *benefits-paid*.
- 0.9 bn were unfunded pensions to former local government police and firemen. Method is *benefits-paid*.
- 2.2 bn was central government pensions (civil servants and army). The method is based on *assessed superannuation liability contributions* (ASLCs) paid which is a kind of *wage-share method*. The ASLCs are *notionally* included in the accounts of central government departments (as payments to the Treasury) so that there is a direct data source for the imputed contributions. The ASLCs are established based on actuarial estimates and include a social component (lower rates for low salary earners, higher rates for high salary earners). Benefits include pensions, survivors' pensions, death benefits and invalidity. Employees pay 1.5% to cover survivors' pensions.

For central government, the share of D.122 in D.1 increased significantly in the 90s. The main reason for this was the re-classification of units that were not covered by the unfunded employer's scheme (such as hospitals) so that D.1 (but not D.122) was falling.