OECD Handbook for Internationally Comparative Education Statistics

CONCEPTS, STANDARDS, DEFINITIONS AND CLASSIFICATIONS

OECD

OECD Handbook for Internationally Comparative Education Statistics:

Concepts, Standards, Definitions and Classifications

OECD
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The original member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971), New Zealand (29th May 1973), Mexico (18th May 1994), the Czech Republic (21st December 1995), Hungary (7th May 1996), Poland (22nd November 1996), Korea (12th December 1996) and the Slovak Republic (14th December 2000). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

FOREWORD

International comparative analysis has increasingly become a key pillar in governments' education policy development. Through co-operation both within the OECD framework and in other international bodies, countries are seeking to learn from each other about how to secure the benefits of education for all, how to foster competencies for the knowledge society, and how to manage teaching and learning in order to promote learning throughout life.

This attention has resulted in a major effort by the OECD to strengthen the collection and reporting of comparative statistics and indicators in the field of education. Over the past 14 years, the OECD has developed and published a broad range of comparative indicators that provide insights into the functioning of education systems. These reflect both the resources invested in education and their returns to individuals and societies. The OECD education indicators provide information on many important features of the operation, evolution and impact of education, from early childhood through formal education to learning and training throughout life. They provide an opportunity for each country to see its education system in the light of other countries' performances.

Over the years, various methodologies and data collection instruments have been developed to facilitate international comparisons in the different educational areas. This handbook draws these methodologies together for the first time and so provides a single reference source for the international standards, concepts, classifications and conventions being used by the OECD in the area of education.

The Handbook is targeted at two groups: users of OECD statistics and indicators of education and also those within the research community or national ministries involved in the compilation of international statistical comparisons of education. For users, the Handbook provides the definitions and conventions used in the underlying data collections as well as the methodologies used to compile the published statistics and indicators derived from them. By also providing advice on data quality issues, the Handbook provides an essential aid to the effective use of the statistics and indicators on education that OECD produces. Secondly, the Handbook offers a unique reference source of standards and conventions for others to adopt in their own compilation of international statistics and indicators on education.

The Handbook is the product of a longstanding, collaborative effort between OECD governments, the experts and institutions working within the framework of OECD's Education Indicators Programme, and the OECD Secretariat. The Handbook was prepared by the Indicators and Analysis Division of the OECD Directorate for Education, principally Michael Davidson. Much of the material contained in it is adapted from data collection documentation developed by others over the years, notably Michael Bruneforth, Eric Charbonnier, Andreas Schleicher and Claire Shewbridge.

Annex 1 lists the members of the various bodies as well as the individual experts who have contributed to this publication and the OECD education indicators more generally.

TABLE OF CONTENTS

READERS' GUIDE

Abbreviations used in this report:

ACER	Australian Council of Educational Research
CERI	Centre for Educational Research and Innovation
CET	Continuing education and training
DeSeCo	Sub-group focussing on the definition and selection of competencies
DSTI	Directorate for Science, Technology and Industry
EAG	Education at a Glance
ELSAC	Employment, Labour and Social Affairs Committee
EU	European Union
Eurostat	Statistical Office of the European Union
FT	Full-time
FTE	Full-time equivalents
GDP	Gross Domestic Product
GED	General Educational Development
GERD	Gross domestic expenditure on R&D
GNERD	Gross national expenditure on R&D
GUF	General university funds
HERD	Higher Education R&D
IEA	International Association for the Evaluation of Educational Achievement
ILO	International Labour Office
INES	OECD Education Indicators Programme
IRR	Internal Rates of Return
ISCED	International Standard Classification of Education
ISUSS	International Survey of Upper Secondary Schools
NEAC	National Education Attainment Categories
NGO	Non Governmental Organisation
NPI	Non-profit Institution
NPSH	Non-profit Institutions Serving Households
NUTS	The Nomenclature of Territorial Units for Statistics
NVQ	National Vocational Qualification
OECD	Organisation for Economic Co-operation and Development
PISA	Programme of International Student Assessment
PPP	Purchasing Power Parity
PT	Part-time
R&D	Research and Development
SMG	Strategic Management Group
SNA	System of National Accounts
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UOE	UNESCO/OECD/Eurostat data collection
VAT	Value Added Tax

Chapter

1

INTRODUCTION

1.1 Introduction

A successful education system is increasingly seen as a vital element in countries' social and economic development. Human capital has long been identified as a key factor in combating unemployment and low pay and there is now also robust evidence that it is an important determinant of economic growth. Moreover, there is emerging evidence that it is associated with a wide range of non-economic benefits, including improvements in health and a greater sense of well-being.

The development of effective education policies is therefore a priority for national governments and more and more they are looking to the international arena to inform and influence their policy reforms. As part of the drive to enhance the OECD's contribution in this area, the OECD's Directorate for Education devotes a major effort to the development and analysis of quantitative indicators, the results of which are published annually in "Education at a Glance" (EAG) (OECD, 2003*a*). These enable governments to see their education system in the light of other countries' performances. Together with OECD's country policy reviews, the indicators are designed to support and review efforts which governments are making towards policy reform.

The indicators that appear in *Education at a Glance* represent the progressive development of international comparisons in education that has been achieved over the last 15 years or so. Fundamental to this development is the quality of the underlying data which itself is driven by having clear concepts, conventions, methodologies and definitions which underlie the data collections and the calculations of the indicators. This Handbook, for the first time, draws together all of these methodologies in a single reference volume. In doing so it will facilitate a greater understanding of the statistics and indicators produced and hence allow for their effective use in policy analysis.

The Handbook therefore provides answers to questions such as "What is a teacher?", "What do we mean by public educational expenditure?" as well as to questions concerning the use of the indicators "How should I interpret expenditure per student? What is it measuring?", "Are there data quality problems?".

Whilst much has been achieved in improving the international comparability of the statistics, there is still plenty to be done and the Handbook acknowledges this. The OECD, through its networking with member countries and other international organisations, is progressively working to address the areas of ambiguity that remain. For that reason, further editions of the Handbook can be expected as further stepwise improvements are made.

1.2 Purpose of the Handbook

The Handbook has the following key objectives in relation to the international statistics and indicators on education that the OECD compiles and disseminates:

- To set out the conceptual framework used by OECD as the basis for compiling these statistics and indicators.
- To document the international standards for concepts, classifications, conventions and methodologies that OECD applies in the collection and compilation of education statistics and indicators.
- To provide standards for others to follow in the collection, organisation, and international comparison of education statistics and indicators

The Handbook is not intended as a data collection manual but rather as a reference from which such documents can be compiled. For that reason it makes no detailed reference to the current OECD data collection instruments and how they should be completed by respondents. That task is fulfilled by the existing data collection manuals.

Importantly, the production of the Handbook has provided an opportunity to review the existing definitions that are used in the OECD data collections and seek improvements where possible. In many cases, therefore, the Handbook has sharpened and improved the clarity of these definitions and whilst these are being implemented the current reporting practice may not yet be in line with these. This is noted alongside the definitions and also highlighted in the areas where data quality can be improved.

1.3 Target audience and use of the Handbook

It follows from these objectives, that the Handbook is intended, on the one hand, for users of OECD international statistics and indicators of education and on the other, for those involved in compiling international data on education.

The *users* of the statistics and indicators will often be readers of *Education at a Glance* but will also be those who access OECD education data in other ways for example via the OECD's Education database (*http://www.oecd.org/edu*). For them, the Handbook aims to create a better understanding of the statistics and indicators produced by OECD and so facilitate their more effective use. The catalogue of data definitions and classifications used in the underlying data collections as well as the concepts and methodologies that are used to compile the statistics and indicators are vital in this regard. The descriptions of country reporting practices are also important, particularly the mappings of national educational programmes to the international classification, which are published here for the first time. Also key is an appreciation of the data quality controls that are applied in the collection and compilation of the statistics as well as knowledge of where data quality is weakest. The Handbook meets all of these needs.

For those involved in collecting and compiling international data on education, the Handbook provides a comprehensive reference to the established international standards and conventions used by OECD, offering these as standards which they might follow. Greater consistency across such international collections can only enrich the collective data that are available at the international level.

Also, the transparency provided by the Handbook in explaining methodologies and highlighting remaining data quality problems presents an opportunity for debate as to what improvements can be made and how they can be achieved.

1.4 Organisation of the Handbook

Chapter 2 of the Handbook sets out the conceptual framework for international education statistics and indicators which "drives" the development of definitions and the data collections. The chapter begins by giving a short historical perspective of the development of OECD statistics and indicators and goes on to describe how the OECD Education Indicators Programme, which produces these, is organised. An overview is also given of the current data collection instruments and methods which provide the data that underpin the statistics and indicators.

Chapter 3 sets out the coverage of the OECD internationally comparative statistics on education. It begins by providing a definition of education and proceeds to define the coverage of the statistics which follows from that. In order to clarify the coverage, various boundary issues around education are discussed for instance in relation to early childhood programmes and vocational and technical education.

Chapter 4 sets out the definitions and classifications that are used in the collection of OECD international education statistics, taking in turn: students and graduates, educational personnel, school organisation and the curriculum, educational Institutions and educational expenditure. Key definitions are provided along with discussion on the interpretation and practical implementation of these definitions. Where work remains to be done to further clarify these definitions, this is noted.

Chapter 5 covers the conceptual, definitional and classification issues concerning educational programmes. It is organised in three parts. The ***first part*** begins with an overview of the International Standard Classification of Education (ISCED-97) and then goes on to set out the definitions and classifications that apply to educational programmes within it. The ***second part*** sets out in detail how educational programmes should be allocated within each of the levels of the ISCED classification and is consistent with OECD's "Classifying Educational Programmes: Manual for ISCED-97 implementation in OECD Countries" (OECD, 1999). The ***final part*** contains diagrams of how countries' national educational programmes are mapped to the ISCED framework, a key tool in interpreting the published statistics and indicators.

Chapter 6 examines issues surrounding the quality of the international education data. It begins with a declaration of OECD's commitment to data quality and the quality framework in which the education data are collected, compiled and disseminated. The types of data quality problems that arise and why they arise are then discussed, together with a description of what the OECD does to assess and address these. Some suggestions then follow on making estimates for missing data and the chapter concludes with an account of the main data quality issues that remain to be tackled in the international education data.

Chapter 7 turns to the statistics and indicators that are derived from the raw data. It explains the concepts, methodologies and conventions used in the calculations and the measurement issues that can arise. It focuses on the main types of indicators that are compiled from the data collected through OECD's Education Indicators Programme. It does not seek to describe in detail every indicator that appears or ever has appeared in *Education at a Glance*. Instead it focuses on the key indicators or groups of indicators which appear in *Education at a Glance* which have conceptual or methodological aspects which are worthy of explanation; it is a catalogue of indicator methodologies rather than a catalogue of indicators.

Chapter

2

CONCEPTUAL FRAMEWORK FOR DATA COLLECTION ON EDUCATION STATISTICS AND INDICATORS

2.1 The development of international educational statistics and indicators

During the 1980s, the increasing demand for information on education and the need for improved knowledge of the functioning of education systems raised many questions not only for data collection but also for the organisation, reporting and interpretation of the data. These questions led authorities in the Member countries of the OECD to consider new ways of comparing their education systems. Agreement was reached on the feasibility and utility of developing an international set of indicators that would present, in statistical form, key features of the education system of Member countries.

OECD's Centre for Educational Research and Innovation (CERI) responded to this demand for comparative information by initiating the OECD's Education Indicators Programme. The programme developed a provisional framework for organising the indicators which proposed a set of indicators and methodologies for measuring them. This framework has been considerably developed since then and is presented in the next section of this chapter.

The first set of indicators was published in *Education at a Glance* (EAG) in 1992 (OECD, 1992) and drew mainly on existing data sources. The work to produce the first EAG exposed weaknesses both in the underlying statistical classification (the International Standard Classification of Education (ISCED)) and in the data collections themselves and since then much work has been put into revising ISCED and improving the methods and instruments for the international data collection on education. This Handbook describes the concepts, classifications and definitions that are the result of that work to date.

The OECD education indicators are clearly the product of an ongoing process of conceptual development and data collection, the objective of which is to link a broad range of policy needs with the best available international data. In each area of work, the following considerations have, traditionally, guided the indicator activities:

- First of all, emphasis has been placed on education issues where the international comparative perspective can offer significant added value over and above what can be achieved through national analysis and evaluation.
- Second, the indicator programme has sought to strike an appropriate balance between focussing new developments on areas where the feasibility of data development is promising, without neglecting important areas where substantial investment in conceptual and empirical work is needed to further the policy debate.
- Third, the work is reviewed continually to ensure that the outcomes are cross-nationally valid and reliable.

Increasing emphasis is being placed on integrating work in these areas under the perspective of lifelong learning, with the aim to progress from an institutional model of education to one that looks more broadly at the extent and benefits of learning throughout life. In addition, various activities within the indicator programme are seeking to better reflect equity-related issues, through assessing differences and inequalities among individuals and groups of individuals.

The organisational structures of the OECD's Education Indicators Programme are the following:

- ***Strategic Management Group*** (SMG) – sets and manages the strategic direction of the indicator programme. It makes recommendations to the Joint Sessions of the OECD Education Committee and CERI Governing Board on the priorities for indicator work, within agreed resources and within the framework of priorities set by OECD Education Ministers. Membership of SMG is drawn from delegates of the Education Committee, the CERI Governing Board, the Employment, Labour and Social Affairs Committee (ELSAC) and from PISA Board of Participating Countries.

- ***National Co-ordinators*** – each Member country designates an individual who co-ordinates education indicator activities at the national level, acts as a liaison with the OECD Secretariat, and is in charge of the national dissemination of the indicator analysis. National Co-ordinators meet once or twice per year to review and discuss the programme of work, its resource implications and the proposed products. They also review the draft text of publications produced from the programme and approve the use of national data in *Education at a Glance*.

- ***OECD Secretariat*** – Managed by a small staff at the OECD, much of the work in the education indicators programme is accomplished through the following country-sponsored Networks:

  - The ***Technical Group*** standardises national data sources and develops international indicators on ***financial and human resources*** invested in education; ***access*** to, ***participation*** and ***progression*** in education; and the ***graduate output*** of education systems. It advises on the annual joint **U**NESCO, **O**ECD and **E**urostat (UOE) data collection on education systems as well as the collection of other OECD statistics. All OECD Member countries, EUROSTAT and UNESCO take part in the Technical Group. The Technical Group is led by the OECD Secretariat.

  - The ***Network A*** develops benchmarks on ***educational outcomes*** and guides the development of instruments for future assessments of knowledge and skills. The development of the Programme for International Student Assessment (PISA) began its life in the discussions of Network A. Network A currently focuses on measuring cross-curriculum competencies and progressively integrating these into future PISA assessments. It also co-operates with the International Association for the Evaluation of Educational Achievement (IEA) and other international organisations on issues of comparative assessment and evaluation. The Network is led by the United States.

  - The ***Network B*** develops indicators on the ***transition from initial education to work*** (*e.g.* earnings of recent graduates, work and study status of the youth population); harmonises statistics on ***continuing education and training***; and analyses tax and social transfer flows by level of education. This Network is led by Sweden and also involves EUROSTAT.

  - The ***Network C*** focuses on the ***learning environment and the organisation of schools*** and develops and conducts an annual survey on ***teachers and the curriculum.*** Network C has also carried out ad-hoc surveys on, for instance the locus of decision making in education systems and an international survey of upper secondary schools (ISUSS) in 2001 (OECD, 2004). This Network is led by the Netherlands and also involves EUROSTAT and UNESCO.

- In addition to the four networks, ***ad-hoc groups*** are formed as required to explore areas not specifically covered in the main indicator programme. For example, there have been ad-hoc groups on equity and lifelong learning which completed their work in 2000 and another focussing on the definition and selection of competencies (DeSeCo), which resulted in the publication *Key Competencies for a Successful Life and a Well-Functioning Society* in 2003 (Rychen and Salganik, 2003).

- ***PISA*** grew out of Network A and now operates as an OECD 'decentralised activity' with its own programme of work, management structure and budget. The PISA Board of Participating Countries is responsible for policy, financing, management and dissemination. The PISA National Project Managers conduct the project at national levels under the direction of an international consortium of educational measurement and research agencies contracted to run the project. Co-ordination is the responsibility of the OECD Secretariat. All OECD Member countries as well as a growing number of non-OECD countries participate in PISA.

2.2 Organising framework for the OECD education indicators

The OECD's education indicators represent the consensus of professional thinking on how to measure the current state of education internationally. They provide information on the human and financial resources invested in education, on access to education, progression, completion and education-work transitions, on the learning environment and the organisation of schools, on the quality of learning outcomes, and on the economic and social returns to learning.

The education indicators are organised thematically, and each is accompanied by relevant background information. The indicators are presented within an organising framework which:

- distinguishes between the ***actors in education systems***: individual learners, instructional settings and learning environments, educational service providers, and the education system as a whole;
- groups the indicators according to whether they are measures of ***learning outcomes*** for individuals and countries***, policy levers*** or circumstances that shape these outcomes, or to ***antecedents*** or constraints that set policy choices into context; and
- identifies the ***policy issues*** to which the indicators relate, with three major categories distinguishing between the quality of educational outcomes and educational provision, issues of equity in educational outcomes and educational opportunities, and the adequacy and effectiveness of resource management.

Table 1
The following matrix describes the first two dimensions:

	(1) Education and learning outputs and outcomes	(2) Policy levers and contexts shaping educational outcomes	(3) Antecedents or constraints that contextualise policy
(A) Individual participants in education and learning	(1.A) The quality and distribution of individual educational outcomes	(2.A) Individual attitudes, engagement, and behaviour	(3.A) Background characteristics of individual learners
(B) Instructional settings	(1.B) The quality of instructional delivery	(2.B) Pedagogy and learning practices and classroom climate	(3.B) Student learning conditions and teacher working conditions
(C) Providers of educational services	(1.C) The output of educational institutions and institutional performance	(2.C) School environment and organisation	(3.C) Characteristics of the service providers and their communities
(D) The education system as a whole	(1.D) The overall performance of the education system	(2.D) System-wide institutional settings, resource allocations, and policies	(3.D) The national education, social, economic, and demographic context

The following sections discuss the matrix dimensions in more detail.

Actors in education systems

The indicator programme seeks to gauge the performance of national education systems *as a whole*, rather than to compare individual institutional or other sub-national entities. However, there is increasing recognition that many important features of the development, functioning and impact of education systems can only be assessed through an understanding of learning outcomes and their relationships to inputs and processes at the level of individuals and institutions. To account for this, the framework distinguishes between a macro level, two meso-levels and a micro-level of education systems. These relate to:

- the education system as a whole,
- the educational institutions and providers of educational services,
- the instructional setting and the learning environment within the institutions,
- the individual participants in education and learning.

These levels relate, on the one hand, to the entities from which data are being collected. For example, comparing the resources that countries invest in education requires, among other things data, financial statistics from national accounts; comparing the cost-effectiveness of educational institutions will usually require data on investment and output at the level of institutions; finally measuring learning outcomes requires data on individuals.

Furthermore, a differentiation between macro and micro levels is not only important with regard to the collection of information, but also because many features of the education system play out quite differently at different levels of the system. For example, at the level of students within a classroom, the relationship between student achievement and class size may be negative, if students in small classes benefit from improved contact with teachers. At the class or school level, however, students are often intentionally grouped such that weaker or disadvantaged students are placed in smaller classes so that they receive more individual attention. At the school level, therefore, the observed relationship between class size and student achievement is often positive (suggesting that students in larger classes perform better than students in smaller classes). At higher aggregated levels of education systems, the relationship between student achievement and class size is further confounded, *e.g.*, by the socio-economic intake of schools or by factors relating to the learning culture in different countries. Past analyses which have relied on macro-level data alone have therefore sometimes led to misleading conclusions.

Outcomes, policy leavers and antecedents

The second dimension in the organising framework, groups the indicators at each of the above levels further:

- Indicators on observed outputs of education systems, as well as indicators related to the impact of knowledge and skills for individuals, societies and economies, are grouped under the sub-heading *output and outcomes of education and learning.*
- The sub-heading *policy levers and contexts* groups activities seeking information on the policy levers or circumstances which shape the outputs and outcomes at each level.
- These policy levers and contexts typically have *antecedents* – factors that define or constrain policy. These are represented by the sub-heading *antecedents and constraints*. It should be noted that the antecedents or constraints are usually specific for a given level of the education system and that antecedents at a lower level of the system may well be policy levers at a higher level. For teachers and students in a school,

for example, teacher qualifications are a given constraint while, at the level of the education system, professional development of teachers is a key policy lever.

Policy issues

Each of the resulting cells in the framework can then be used to address a variety of issues from different policy perspectives. For the purpose of this framework, policy perspectives are grouped into the following three classes which constitute the third dimension in the organising framework for the indicator work:

- Quality of educational outcomes and educational provision.
- Equality of educational outcomes and equity in educational opportunities.
- Adequacy and effectiveness of resource management.

In addition to the dimensions mentioned above, it would be conceivable to introduce the time perspective as an additional dimension in the framework, so that dynamic aspects in the development of education systems could be modelled as well.

2.3 Overview of current regular data collections and data sources

The data collections which underpin the indicators that fit within the framework described above are now described in a little more detail. The data collections described below cover only the regular data collections that are conducted and used by OECD's Education Indicators Programme. The programme makes use of data available from other sources and from ad-hoc surveys which are occasionally carried out by the Networks but these are not listed here.

UOE data collection of education systems

The UOE data collection is the annual data collection on education systems which is conducted jointly between OECD, UNESCO and Eurostat and has been carried out as a joint exercise in its current form since 1993. It is a collection of aggregate national data comprising some 20 electronic questionnaires (Excel workbooks) covering student enrolments (8), student entrants (2), graduates (3), personnel (3), finance (2) and class sizes (2).

The questionnaires are completed by the statistical staff in each country using the data available to them nationally.

The data requests are issued in the early Spring of each year. Data on students, personnel and classes are collected for the most recent complete school year; data on graduates are collected for the most recent complete calendar year and the finance data are collected for the last but one complete financial year (to allow for out-turn data to be available). Returns are due by July for the finance data and September for the rest.

Advice and guidance is provided to data providers through the "UOE Manual" – "UOE Data collection: Definitions, Explanations and Instructions" which is revised each year and which is consistent with the concepts, definitions, classifications described in this Handbook, unless otherwise stated.

Countries submit their completed questionnaires jointly to OECD, Eurostat and UNESCO, and the data cleaning is shared between OECD and Eurostat. Chapter 6 describes the data cleaning process in more detail.

Important supplements to the UOE data collection are countries' ***'ISCED mappings'*** which map national educational programmes to the ISCED framework. These are revised each year and are an invaluable aid to the interpretation of the data collected and the statistics produced from them. Diagrams showing the latest mappings are contained in Annex 6 of this Handbook.

Teachers and the curriculum survey

Since the early 1990s Network C has collected annual data through its "Teachers and the Curriculum" survey which is managed by the Network C Secretariat based in the University of Twente in the Netherlands. Data are collected through electronic (Excel) questionnaires and cover:

- Compulsory and non-compulsory intended instruction time for students
- Teachers working time and teaching time
- Annual statutory teacher compensation

Also, data on pre-service teacher training were collected exceptionally in the 2002 survey. The data requested relates to the policies that apply in each country in the year in question rather than the actual activity. Thus, for example, teachers working time is that which is laid down in regulations rather than a measure of actual working time.

These data are reported by the Network C experts in each country with reference to the various laws and regulations that are in place nationally. The data requests relating to the previous school year are issued in August each year for return by the end of October.

Labour Force Survey

Data on **educational attainment** of the adult population are collected as part of the *Annual Labour Statistics data request* which is conducted by the OECD Secretariat in February/March each year.

The National Statistical Offices provide data on employment, unemployment and population by National Educational Attainment Categories (NEAC), by gender and age groups. Data are derived from National Labor Force Surveys. They are mapped to ISCED-97 levels of attainment using the agreed mapping from NEAC to ISCED-97 standardized levels of attainment established by the Network B of the OECD education indicator project after consultation with country representatives. Work status is reported according to the International Labour Office (ILO) guidelines and definitions of employment and unemployment.

Another part of this annual data collection covers the **transition from education to work** for 15 to 29-year-olds. The data are obtained from a special collection with a reference period in the early part of the calendar year, usually the first quarter or the average of the first three months. For each of the 3 five-year age groups the school and work status by gender and educational level (attended or attained) are reported. Persons in education include those attending part-time as well as full-time using a definition of education as close as possible to the one used for enrolment data in UOE data. The definitions of the various labour force statuses are based on the guidelines of the ILO, except for the category 'youth in education and employed', which includes all work-study programmes whatever their classification according to the ILO guidelines.

Statistics Sweden also conducts several regular data collections which are used by the indicator programme:

- On **leavers at tertiary level** of education (by gender): recording the labour market position between 1 and 5 years after having left education, programme destination at tertiary level and broad field of education. Data are based upon ad hoc national follow-up surveys, administrative data and sometimes labour force surveys.
- On **earnings** by attainment level and gender. Data are derived from national labour force surveys and other surveys.

- On **participation of adults in continuing education and training**: the Swedish secretariat of Network B has compiled a database with all the collected data on continuing education and training (CET). The format of the CET data collections has changed during the years. After the shift to ISCED97, time series data including both older and later data have now for the first time been compiled in Network B. Training for the whole population (not only the employed) and data on the volume of training are included. A number of countries provide data based on national training or adult education surveys, but the majority of the countries provide data based on the labour force surveys.

PISA

PISA, collected for the first time in 2000, is a three-yearly survey of the knowledge and skills of 15-year-olds in the principal industrialised countries. It assesses young people's capacity to use their knowledge and skills in order to meet real-life challenges and, specifically, assesses literacy in reading, mathematics and science. The assessments were conducted through students sitting pencil and paper tests in their schools. The students and principals of the schools also answered questions about themselves and their schools allowing analysis of the factors that influence good and bad performance.

PISA is co-ordinated by governments of participating countries through the OECD and employs leading international experts to develop assessment instruments whose results are comparable across different national and cultural contexts.

In 2000, 28 OECD Member countries and four other countries carried out the first PISA survey. A further 13 countries conducted the same survey in 2002, and the two OECD countries that did not take part in 2000 have participated in the second survey in 2003. For PISA 2006, as well as all 30 OECD countries, 20 non-OECD countries will take part.

(For further information see *www.pisa.oecd.org*)

Chapter

3

THE SCOPE AND COVERAGE OF INTERNATIONALLY COMPARATIVE EDUCATION STATISTICS

3.1 Introduction

This chapter sets out the coverage of OECD's internationally comparative statistics on education. It begins by providing a definition of education and proceeds to define the coverage of the statistics which follows from that. In order to clarify the coverage, various boundary issues around education are discussed in particular in relation to the coverage of:

- Early childhood programmes
- Special needs education
- "Non-regular" and adult education
- Vocational and technical education/training

In the main, what is described in the following sections is the coverage of data on student enrolments, graduates, educational personnel and educational finance- in short the data collected through the UOE data collection. Where the coverage differs for other data items, this is noted.

3.2 A definition of education

The basic underlying definition of "education" used in the collection of OECD international education statistics is derived from the International Standard Classification of Education (ISCED-97). (See Chapter 5 for a full description of ISCED-97, its development and OECD's role in that development.)

ISCED defines "education" as organised and sustained communication designed to bring about learning", where:

- "***Communication***" involves the transfer of information (messages, ideas, knowledge, strategies, etc.) between two or more persons
- "***Organised***" communication is that which is planned in a pattern or sequence, with established aims or curricula. It should involve an educational agency that organises the learning situation and/or teachers who are employed (including unpaid volunteers) to consciously organise the communication.
- "***Sustained***" communication is that which has the elements of duration and continuity as part of the learning experience.
- "***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.

3.3 The coverage of OECD international educational statistics

Given this definition, and subject to the specific inclusions and exclusions detailed in the next section, ***the coverage of international education statistics is***:

- All of a country's *domestic* educational activity (*i.e.* within its own territory), regardless of the ownership or sponsorship of the institution – whether public or private, national or foreign- which organises the activity and regardless of the delivery mechanism.

The words "organised" and "sustained" are key in delineating between what is included and what is excluded from the coverage. For instance, ***informal learning*** is not included in the coverage of the OECD statistics on student enrolments, personnel and finance because it is neither organised nor sustained. Informal learning can be either *intentional* (*e.g.* participation in short lectures or reading books or journals) or *unintentional* (occurring by chance or as a by-product of everyday activities).

Note, however, that although informal learning is excluded from the coverage of student enrolments, graduates, personnel and finance, it will be an important element in the coverage of the collection of data on *adult competencies* which the OECD is currently developing.

3.4 Coverage issues: Specific inclusions and exclusions

Because national education systems vary in how they are organised and how they label different kinds of activity, it is necessary to clarify the inclusion/exclusion of certain areas of activity.

3.4.1 Coverage of early childhood programmes

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

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, the following proxy measures should be used to determine whether or not a programme should be included. Thus, **Early Childhood Programmes** are covered as follows:

INCLUDED: 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 three years of age
- Have staff that are adequately trained or qualified to provide an educational programme for children

EXCLUDED: early childhood programmes that fail to meet all of these criteria

Early childhood programmes which are provided by centres whose main activity is day-care are included as long as the programmes otherwise meet the stated criteria. Also, where centres operate a combination of education and child-care, only the educational activity should be reported. For example, in Greece some centres offer four hours of educational activity in the morning and day-care for the rest of the day. Here only the four hours of activity in the morning should be included in the coverage of education.

More details on the coverage of ISCED 0 programmes as well as some examples, are given in Chapter 5 which describes the implementation of the ISCED-97 classification.

3.4.2 Coverage of "special needs education"

As far as "special needs education" is concerned, the issue is less about whether such activity falls within the coverage of education but more about how special needs education is itself defined. Special needs education is not yet well defined in international education statistics and the definition and types of provision vary between countries. Differences exist, for example, in the programmes offered, the degree to which special needs education is integrated into the regular education system, the classification of types of special need, and type of support given to these students.

In countries, special needs education variously covers educational provision for mentally, physically, or 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. Such provision can be provided either in mainstream schools, in special educational institutions or units or in hospitals.

In the OECD study "Special Needs Education: Statistics and Indicators" (OECD, 2000*a)* those students with special educational needs were identified as **those for whom additional public and/or private resources (personnel, material or financial) were provided to support their education**.

It is difficult to conceive of any such provision which should fall outside the coverage of the international educational statistics. The following guidance should therefore be followed:

INCLUDED: Special needs education, wherever it takes place (mainstream schools, special educational institutions or unit or hospitals) in whatever way it is defined nationally **if** the provision otherwise complies with the definition of education stated in Section 3.2.

All students in special education programmes should be assigned to specific ISCED levels (either directly or by estimation) according to the instructional content of the programme. (See Chapter 5 on the implementation of ISCED-97).

3.4.3 Coverage of non-regular or adult education

The difficulty in considering the coverage of non-regular or adult education is that these terms are not well defined and they mean different things in different countries. The terms formal, non-formal and informal are also used to describe different types of learning activities. However, rather than using these terms to define the scope of education for the purposes of the data collections used in OECD's Education Indicators Programme a distinction is made between ***initial education*** and ***continuing 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.

Continuing education covers the learning activity of those returning to education after having left initial education. In most countries adult education or non-regular education as defined nationally, fall into this category.

The coverage of initial and continuing education in the statistics is as follows:

INCLUDED:

- ***Initial education***: Programmes offered as part of initial education can also be regarded as **regular educational programmes.**
- ***Continuing education*** activities of all types **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 **and**
  - the full-time equivalent duration of the programme is at least one semester, as defined locally

The inclusion of such continuing education programmes is 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.

EXCLUDED:

- ***Continuing education*** courses or classes with a full-time equivalent duration of less than one semester, as defined locally. This criterion is intended to eliminate from the coverage those courses which are more informal than formal learning. These courses will vary from country to country and may include courses that are primarily for general interest and/or ***for leisure or recreation***, for example, in the United Kingdom, large numbers of adults enrol on evening classes to learn a wide variety of subjects from car maintenance to conversational French. As the primary purpose of this learning is for leisure/general interest, they are excluded from the statistics.

Students in programmes designated as "adult or non-regular education" and other continuing education are assigned to the most appropriate ISCED levels according to the instructional content of the programmes (See Chapter 5 on implementation of ISCED-97).

3.4.4 Coverage of vocational and technical training

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*.

INCLUDED:

- *Solely school-based* vocational and technical training is included, in the same way that any other school based study is covered in the statistics.
- *Combined school- and work-based* programmes: both the school- and work-based components are **included if**:
  - they are explicitly deemed to be part of the educational system and an education authority has oversight of them;
  - the school-based component accounts for at least 10 per cent of the study over the whole length of the programme.

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

- 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).

In combined school and work-based programmes, it is clearly important to ensure that the students engaged on these programmes are not recorded twice if data need to be collected from both education providers and employers.

EXCLUDED:

- *Solely work-based* study or combined school- and work-based study in which the work-based component represents 90 per cent or more of the total study over the whole length of the programme and for which no education authority has oversight.
- T*raining of employees by their employers* unless there is an element of school based study associated with it which represents 10 per cent or more of the total study.

So, for example 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.

Note, however, that although the training of employees by their employers is excluded from the coverage of data on student enrolments, graduates, educational personnel and finance, such activity is included in data on adult participation in continuing education and training (CET).

3.4.5 Educational programmes in educational institutions organised by Ministries other than the Ministry of Education

INCLUDED:

- Students enrolled in educational institutions, at all levels, organised by Ministries other than the Ministry of Education (for example, Health, Agriculture, Social Affairs, Defence) For example, students on nursing and paramedical programmes organised by the Ministry of Health.

3.4.6 Foreign and national students

INCLUDED:

- The coverage of the statistics for any reporting country extends to both foreign and national students enrolled by the educational institutions within their country.

A foreign student is one who does not have the citizenship of the country reporting data (see Section 4.2.8).

Thus, 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.

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 data for the foreign campus in the same manner as it reports activities of its domestic educational institutions. The foreign/national 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 foreign 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 foreign 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.

Students on short-term postings (less than a full school year) to institutions in other countries and who remain enrolled in their 'home' institution and/or continue to pay their fees to their home institution should **not** be recorded as foreign students in the host country. They should instead continue to be recorded in the statistics of the home country. It is recognised that this will result in an undercount of student mobility. Further consideration needs to be given to these definitions and to other data items which are needed to properly record student mobility.

3.4.7 Further improvements needed

Whilst the Handbook has sharpened some of the terminology and definitions surrounding the coverage of the education statistics, there is still some way to go to improve the clarity of these and to further resolve some of the boundary issues, particularly surrounding continuing education programmes. In addition, fuller consideration needs to be given to the definition and coverage of foreign students in order to properly measure student mobility. These are challenges that must be taken up and addressed in future editions of the Handbook.

Chapter

4

DEFINITIONS AND CLASSIFICATIONS OF OECD INTERNATIONAL EDUCATION STATISTICS

4.1 Introduction

This chapter sets out the definitions and classifications that are used in the collection of OECD international education statistics, taking in turn:

- 4.2 Students and Graduates
- 4.3 Educational Personnel
- 4.4 School Organisation and the Curriculum
- 4.5 Educational Institutions and
- 4.6 Educational Expenditure.

The definition and classification of educational programmes is covered in Chapter 5 alongside guidance on the implementation of ISCED-97.

Within each section, the key definitions are enclosed in shaded boxes in order to distinguish them from the rest of the text which discusses issues of interpretation and practical implementation. Whilst much has been done over the years to improve the clarity of these definitions, this work is by no means complete and where areas of ambiguity still remain, these are discussed in the text.

4.2 Students and graduates

4.2.1 Students and student enrolments

A ***student*** is defined as any individual participating in the educational programmes within the scope of the data collection as defined in Chapter 3. The term "student" therefore applies to pupils and students alike.

Enrolment or ***registration*** is the act of officially enlisting on a programme of study. A student may enrol on more than one programme.

There are two statistics to measure the activity of students:

- ***Number of students enrolled***: refers to the number of individuals (head count) who are enrolled within the reference period,
- ***Number of registrations (or enrolments)***: refers to the count of enrolments within the reference period.

The two measures are the same if every individual is only enrolled in one programme during the reference period but they differ if some students are enrolled in multiple programmes. Both measures are important.

The ***number of students enrolled*** is used to calculate participation rates within the population at large and to profile the student body whilst the ***number of registrations*** is used in assessing total educational activity, resource allocation and operational efficiency.

The ***number of students enrolled*** 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. However, because of the definitions used in national data collection systems, countries use different criteria in reporting students enrolled. For example, some countries report 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). Annex 2 provides some details of country practice.

Care must be taken to avoid double counting in the counts of students enrolled. For instance, if a student enrols in multiple fields of education as part of their programme of study, 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.

A similar approach should be followed when students enrol on multiple types of programmes (*e.g.* programmes with different orientations or destinations).

Some double counting may, however, be unavoidable such as a student who enrols in more than one institution in the same reference period. This is likely to be difficult to identify and eliminate. The scale of such double counting is, however, likely to be relatively insignificant but where it exists, it should be noted.

4.2.2 Entrant status of student

Students can be either ***entrants*** or ***continuing students***. Entrants can be either ***new entrants*** or ***re-entrants.***

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

Whether an entrant is new or not *at a particular level* is determined by whether or not the student has previously been active at that level of education in the country reporting the data. The following definition is therefore used:

> ***New entrant to a level of education*** is a student who, during the course of the current reporting period, enters any programme leading to a recognised qualification at this level of education *for the first time*. This is irrespective of whether the student enters 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, a new entrant to a level of education is an enrolee who has never previously been included in the corresponding count of students for that level of education.

Clearly, any new entrant to a particular level of education is also a new entrant to a programme, and a new entrant to a field of education[1] at that level. However, new entrants to a programme or field of education at a given level of education are not necessarily new entrants to that level.

A *foreign student* who is enrolling for the first time in the country for which the data are being collected should be counted as a new entrant, regardless of their previous education in other countries. The reason for this is one of practicality in that in practice countries are less likely to know about the previous education of foreign students. This should be reviewed as student mobility policies develop and the underpinning data collections do likewise.

> ***Re-entrant to a level of education:*** is a student who returns to a level of education following a period of absence of at least one year from studying at that same level. Thus, a re-entrant will not have been enrolled at that level in the previous reference year, but will have been enrolled at that level in some year prior to that.

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

Continuing student: is a student who is enrolled on a programme during the current reporting year and who was also enrolled at that level during the previous reference year.

For each level of education, the sum of ***New Entrants, Re-entrants*** and ***Continuing students*** should equal the total ***numbers of students enrolled*** at that level.

4.2.3 Graduates

A ***graduate*** from a programme is a student who has ***successfully completed*** all requirements of that educational programme.

Successful completion must be distinguished from simple completion of a programme which is achieved solely through fulfilling attendance requirements. ***Successful completion*** should open up educational and labour-market opportunities that unsuccessful completion would not otherwise do. It marks something more than simply attending a programme until its end, with automatic progression between years of the programme.

As graduation requirements vary from country to country, it is not sensible to categorically state the features of graduation. However, ***successful completion*** should involve the demonstration by the student of the expected skills and knowledge of someone at the level of education of the programme completed by either:

- Passing a final, curriculum based examination or series of examinations; **or**
- Accumulating the specified number of study credits throughout the programme; **or**
- Where there are no formal examinations, through a formal assessment of the skills/knowledge acquired by the student during the programme.

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

A condition of a *successful completion* of a programme is that students should have met all of the pre-set requirements for programme completion and graduates should be counted in the year in which all of the pre-set requirements are finally met. So, for example, a student who completed the final year of an upper secondary programme prior to the reference year, but passed the final examination during the reference year is counted as an upper secondary graduate in the year in which all requirements were completed.

Students who left without meeting all of the pre-set requirements but later successfully complete a recognised "equivalency" examination based on knowledge learned outside of the education system, should not be counted as graduates from the programme.

The rationale for this is that the graduate numbers are measuring the output of educational institutions and counting of such cases would clearly be an inflation of this, distorting for example completion and drop out rates for educational programmes. However, when measuring educational attainment of individuals within the general population, it is legitimate to include the achievement of such qualifications.

For example, taking and passing the General Educational Development (GED) test in Canada or the United States is not counted as an ISCED 3 graduation unless the student has also successfully completed the final year of high school. But holders of the GED are counted as having attained ISCED 3 in measures of educational attainment of the population.

Successful completion of a level: Successful completion of a programme within an ISCED level equates to the successful completion of that level in all cases **except** ISCED 3.

Due to the wide variability in the duration and content of ISCED 3 programmes within and between countries, an additional condition is placed on courses considered to be of insufficient duration. The criteria for level 3 completion is thus:

- the successful completion of a 3A or 3B programme (designed to provide access to ISCED 5); **or**
- the successful completion of a 3C programme with a cumulative theoretical duration that is similar (no more than 1 year FTE shorter) than that of 3A/3B programmes. This additional requirement is to ensure that the content of the 3C programme is of a sufficiently high level.

4.2.4 Counts of graduates

The ***flow of graduates*** within the reference period records the number of students who have graduated in the reference period. A graduate is counted in the year in which all the requirements of the programme are completed. For example, a student who completed the final year of an upper secondary programme prior to the reference year but passed the final examination during the reference year should be counted as a graduate in the reference year.

Graduates in the reference period can be either ***first-time graduates*** or ***repeat graduates.***

A ***first-time graduate*** is one who graduates for the first time at a given level – or in the case of ISCED 5, sub-level 5a or 5b- in the reference period.

This distinction allows the aggregation of an ***un-duplicated count of graduates*** for each level (*i.e.* the sum of first-time graduates at a particular level in a given year) which avoids double-counting of individuals within the same level over time. This is particularly important for the calculation of graduation rates. The sum of first-time graduates and repeat graduates in any year gives the total number of graduations for that year.

It follows from this definition that a student can be a first-time graduate at more than one level (or sub-level of ISCED 5) over time *e.g.* a first-time graduate at ISCED 5a can become a first time graduate at ISCED 6 in subsequent years.

In contrast to the flow of graduates in a given reference year, the ***stock of graduates***, reports the number of graduates in the general population at a point in time and is often part of an analysis of the ***educational attainment*** of the population. Such analyses that appear in *Education at a Glance* focus on ***the highest level of education completed*** by members of the adult population. Thus an individual who has successfully completed an ISCED 2 programme and nothing more, will be recorded as having an education level of ISCED 2 (see Chapter 7 for relevant indicators).

4.2.5 Repeater

A ***Repeater*** is defined as a student who enrols in the same grade or year of study of the same educational programme for a second or further time.

Repeaters must be distinguished from students who enrol in second and further educational programmes at the same level after having completed an earlier programme at that level. A repeater is one who repeats predominantly the same subject matter within the programme.

4.2.6 Grade of students

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. Students not classifiable by grade (*e.g.* adults in adult education) should be allocated to the category "Grade unknown".

4.2.7 Age of students

Students' age: in counts of student enrolments, entrants and graduates, the common reference point for students' age for most countries is 31 December of the school year to which the student enrolment/ graduation data relate. Some agreed exceptions exist, however, for the reasons discussed.

Thus, for instance, in a country whose school year runs from September 2003 to August 2004, a student born on 31 December 1995 will be reported as aged 8, whereas a student born on 1 January 1996 will be reported as aged 7. The choice of 31 December for most countries is mainly to coincide with the age-reference of the population data that are used in the calculation of participation rates.

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

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

The choice of a common reference date, such as 31 December, 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 31 December would record students' ages at the end of the school year. This is in contrast to most other countries where the 31 December 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 31 December 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. Annex 2 details the reference dates that countries currently use in reporting their age data.

Students not classifiable by age should be allocated to the category "Age unknown".

'*Theoretical' and 'Typical' ages* as they relate to entry and graduation from programmes are defined in section 5.3.2.1.

4.2.8 National status of students

Students are either national students or non-national students.

For a given country reporting data, a ***non-national student*** (or ***foreign student***), is a student who is enrolled on a programme in one of its institutions but who does not have the *citizenship* of that country.

Normally *citizenship* corresponds to the nationality of the passport which the student holds or would hold. (Note from Section 3.4.6 that the institutional coverage for a given country excludes campuses of its domestic institutions which are located abroad).

If countries are unable to provide data or estimates for non-nationals on the basis of the passport held they should substitute data according to an alternative related concept (for example, the country of residence, the non-national mother tongue, or non-national parentage when this is possible) and document this accordingly.

In distinguishing between students from EU-countries and students from non-EU countries, the membership 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 current membership of the EU is: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Non-national (or foreign) students can be either resident or non-resident.

The key criterion for distinguishing between the two categories of foreign student – which is relevant mainly for tertiary level students – is whether or not the student moved to the country solely for the purpose of pursuing their education. Thus:

A ***resident foreign student*** is a foreign student who is in the country as a result of a prior migration by themselves or their parents (*e.g.* children or parents of families with work visas or permits or with diplomatic appointments, refugees, immigrants with permanent residence status, etc.) and who subsequently enrols in an educational programme.

A ***non-resident foreign student*** is one who has come to the country expressly for the purpose of pursuing their education. The terms "resident" and "non-resident" here are intended merely to convey this distinction; it is not intended that the distinction necessarily be made on the basis of some form of "official" residence status in the country.

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

- a "non-resident" foreign student could be a student who holds a *student* visa or permit;
- a "non-resident" foreign student could be a foreign student who has completed his secondary education in another country.
- a "non-resident" foreign student will normally be one who had a foreign country of domicile in the year prior to entering the education system of a country.

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

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

A distance learning student who is a resident national in country A and enrols with an institution in country B should be reported as a non-resident foreign student by country B. As stated in Section 3.4.5, students in foreign campuses of institutions should be reported by the country in which the campus is located. Thus, the foreign/national status of these students should be determined in relation to the country in which the campus is located and who reports the data.

Note, however, that considerable work needs to be carried out in defining and collecting data on foreign students to properly measure student mobility and the internationalisation of tertiary education. OECD is tackling this through developmental work within the Technical Group.

4.2.9 Full time, Part time and Full-time equivalents of students

Full time and part-time students

Students should be classified between full-time and part-time on the basis of ***study load of the student*** within the reference period. The full-time/part-time distinction is therefore an attribute of the student's study pattern rather than an attribute of the organisation of the educational programme.

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. 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***.

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

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 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 year. If the time commitment is less that 75% of the school week or the student is expected to be in the programme for less that the full school year, then the student should be recorded as ***part-time***. 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 per cent 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 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 per cent of the school week as locally defined for the *primary* level of education and are expected to attend school for the whole reference period.

Note, however, that 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 levels, 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. In some countries, however, the distinction between full and part-time is made on the basis of the characteristics of the underlying programme rather than of the study pattern of the student. For this reason, some countries report no part-time students at all at certain ISCED levels, most notably at the tertiary level.

Additional advice

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. See examples below.

If a wholly classroom based programme involves the attendance at classes for less than 75% of the school week all students on this programme are part-time regardless of how many of the classroom sessions they attend.

If a student is enrolled on more than one programme, or type (orientation, destination) of programme or multiple fields of study, their study load should be summed over all programmes in order to determine their full-time/part-time status. The numbers of full-time/part-time students resulting from this summation should be pro-rated across programme types and fields of education as explained in Section 4.2.1.

For students in combined school and work-based programmes, both the school and the work-based components should be considered in determining the students' full/part time status.

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.

Examples

The practical application of these definitions can be illustrated by considering examples of 'non-standard' study patterns which students can follow. The comparison in each case is with a student on the same or similar programme whose 'standard' study pattern involves the completion of the programme through full-time classroom attendance:

- **Type 1:** a study pattern that aims to complete the **same curriculum** in the **same length of study** but requires **less teaching hours** than the 'standard' full-time student. Examples of this are evening courses or distance learning. Here the 'non-standard' student should be regarded as a **full-time** student because the academic load taken is the same as a conventional full-time student.
- **Type 2:** a study pattern that aims to complete **the same curriculum** but over **a longer length of study** and using the same number of teaching hours in total but proportionately **less teaching hours**

each year. This is "classic" part-time study which is common in some countries. Here the 'non-standard' student should be recorded as a **part-time** student**.**

- **Type 3:** a study pattern that aims to complete only **part of the curriculum** over a (proportionately) **shorter length of study** and with (proportionately) **less teaching hours** each year and in total. This includes short courses or modular courses. Here, the non-standard student should be recorded as a **part-time** student.

Reduction of head-count data to full-time equivalents of students

The conversion of headcounts to full-time equivalents (FTE) aims to standardise a student's actual study load during the reference period against the normal study 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.

The availability of individual study load data differs between countries, so the following advice is given to cover these different situations:

- **Where data and norms on individual student study load 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 ofcourse 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.

To ensure valid international comparisons, countries are asked to document the criteria used to establish full-time participation and the methods used for the reduction to full-time equivalents.

Alignment of student data coverage with personnel and finance data

For certain indicators it is necessary to combine student data with data on educational expenditure and educational personnel (*e.g.* expenditure per student and ratio of students to staff). Because of limitations in national data, the coverage of the data reported by countries for these different parts of the data collection may not be the same. Student numbers (full-time, part-time and full-time equivalents) are therefore collected on three bases: one that seeks to match the desired coverage as defined in Chapter 3 and the other two which align student numbers to expenditure and personnel data respectively.

4.3 Educational Personnel

4.3.1 Coverage

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 (*i.e.* at least 90 per cent of the time) 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.

In short, '*Educational personnel*' comprises all those employed in *educational* institutions (as defined in Section 4.5) covering both *instructional* and *non-instructional institutions.*

So as well as staff in instructional educational institutions (*e.g.* schools, colleges and universities), staff employed by national, regional and local levels of government who administer the education system are included, as are staff in entities providing support or ancillary services. There are, however, certain exclusions, so the coverage:

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. See Section 4.2.9.

4.3.2 Classification of educational personnel by function

The classification of educational personnel used is intended to serve as a framework to classify school and other education system personnel for all levels of education (ISCED 0 to 6). The classification is based on the **primary or major** functions performed by staff and organises them into four main functional categories; three of the four main functions contain sub-functions with specialised types of personnel. In summary, 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)

Fuller definitions of each of these categories are as follows:

I. Instructional Personnel

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

- ***I.A(i) Classroom Teachers (ISCED 0-4):***

A ***classroom teacher*** is defined as a person whose professional activity involves the planning, organising and conducting of group activities whereby students' knowledge, skills and attitudes develop as stipulated by educational programmes.

- this staff sub-category ***includes*** professional personnel whose primary or major activity involves direct student instruction; special education teachers in whichever setting they teach; and other teachers who work with students as a whole class in a classroom, in small groups in a resource room, or one-on-one inside or outside a regular classroom (***Note***: In Network C's collection of data on Teachers and the Curriculum, which in part collects data on teachers' working time, special education teachers in special education institutions and teachers who work with small groups or on a one-to-one basis with students are excluded. This is because the working patterns of such teachers are likely to differ from mainstream classroom teachers and hence distort the indicators on working time that are derived from the collection.)
- this category ***excludes*** educational staff who have some teaching duties but whose primary function is not teaching (*e.g.* it is managerial or administrative). (However, see "*School level management with*

teaching responsibilities" below.) Also, this category does not include student teachers, teachers' aides, or paraprofessionals.

- ***I.A(ii) Academic Staff (ISCED 5-6)***
  - This staff sub-category ***includes*** personnel whose primary or major assignment is instruction or research and so covers personnel who hold an academic rank with such titles as professor, associate professor, assistant professor, instructor, lecturer, or the equivalent of any of these academic ranks. The category ***includes*** personnel with other titles, (*e.g.* dean, director, associate dean, assistant dean, chair or head of department), if their principal activity is instruction or research.
  - This category ***excludes*** teaching or research assistants.
- ***I.B(i) Teacher Aides (ISCED 0-4)***
  - This staff sub-category ***includes*** non-professional personnel who support teachers in providing instruction to students such as 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.
- ***I.B(ii) Teaching / Research Assistants (ISCED 5-6)***
  - This staff sub-category ***includes*** all students employed on a part-time basis (beyond their studies) for the primary purpose of assisting in classroom or laboratory instruction or in the conduct of research. Personnel in these positions are typically graduate students who hold such titles as teaching assistant, teaching associate, teaching fellow, research assistant, or equivalent personnel with other titles.

II. Professional Support for Students

This category covers 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.

- ***II.A(i) Pedagogical Support (ISCED 0-4)***
  - This staff sub-category ***includes*** professional staff who provide services to students to support their instructional program such as guidance counsellors, librarians, educational media specialists, and attendance officers. In many cases these personnel would have originally licensed as teachers but then moved into other professional positions in education systems.
- ***II.A(ii) Academic Support (ISCED 5-6)***
  - This staff sub-category ***includes*** all personnel whose primary responsibility is to support the academic program of students and covers the same categories of staff included under *Pedagogical Support (ISCED 0-4)*, as well as other professional support staff employed in tertiary education institutions.
- ***II.B(i) Health and Social Support***
  - This category ***includes*** all personnel employed in education systems who provide health and social support services to students such as: health professionals such as doctors, dentists, ophthalmologists, optometrists, hygienists, nurses, and diagnosticians; psychiatrists and psychologists; speech pathologists and audiologists; occupational therapists; and social workers.

III. Management / Quality Control / Administration

This category comprises four sub-categories. These are (A) School Level Management, (B) Higher Level Management, (C) School Level Administrative Personnel and (D) Higher Level Administrative Personnel at all ISCED levels.

- ***ISCED 0-4, School Level Management*** covers professional personnel whose primary or major responsibility is for school management/administration. It ***includes*** principals, assistant principals, headmasters, assistant headmasters, and other management staff with similar responsibilities. It does not include receptionists, secretaries, clerks, and other staff who support the administrative activities of the school.
- **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 typically ***includes*** personnel with the following titles or their equivalents, **if their primary activity is administrative**: president, vice president, dean, director, chancellor, rector, associate dean, assistant dean, executive officer or department head.
- ***ISCED 0-4, Higher Level Management*** covers personnel whose primary or major responsibility is quality control and the management of the education system at levels higher than that of the school. 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.
- ***ISCED 5-6, Higher Level Management*** covers personnel with similar functions described above for ISCED 0-4. It also ***includes*** other management positions that are specific to the tertiary education sector.
- ***ISCED 0-4, School Level Administrative Personnel*** covers all personnel who support the administration and management of the school. This staff category ***includes*** receptionists, secretaries, typists and word processors, bookkeepers and clerks, photocopying assistants, etc.
- **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.
- **All ISCED levels,** ***Higher Level Administrative Personnel*** covers who support the administrative / management functions of the education system at levels higher than that of the school. 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"**.

IV. Maintenance and Operations Personnel

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

4.3.3 Age of educational personnel

As is the case for students (see Section 4.2.7):

Age of educational personnel should be classified by their age as at 31 December of the school year for which the data are being reported.

Thus, for instance, in a country whose school year runs from September 2003 to August 2004, a teacher born on 31 December 1975 will be reported as aged 28, whereas a teacher born on 1 January 1976 will be reported as aged 27.

Where the available data on educational personnel for a country refer to the ages at some date other than 31 December, data providers are advised to re-distribute educational personnel numbers across ages on the basis of estimation similar to that described for student data in Section 4.2.7. The strict comparability of the reference dates for the ages of personnel is, however, likely to be less of an issue than it is for the student data where the calculation of participation rates are more sensitive to reporting differences.

Educational personnel not classifiable by age should be allocated to the category "Age unknown".

4.3.4 Employment status (Full-time/Part time/Full time equivalents) of educational personnel

The classification of educational personnel between "**full-time**" and "**part-time**" should be done on the basis of *working time*. Full-time employment in each country will be defined differently but will usually be based on a number of "normal or statutory working hours" (as opposed to actual or total working time or teaching time) which is expected of a full-time employee (see section 4.3.7 for definitions of working time).

The definitions of full-time and part-time educational personnel in the OECD education statistics are stated relative to these national norms for each category of educational staff as follows:

Full-time educational personnel: an employee who is employed for at least 90 per cent of the normal or statutory number of hours of work for a full-time employee over a complete school year.

Part-time educational personnel: an employee who is employed for less than 90 per cent of the normal or statutory number of hours of work for a full-time employee over a complete school year

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

If actual data on working hours are not available, countries reporting data should provide estimates of the full-time/part-time status. They are also advised to use whatever proxy or correlated information can be obtained to ensure the reliability of estimates. Data on teaching remuneration, for instance, can be used to generate such estimates.

Full-time equivalents of educational personnel: The metric for the measurement of full-time equivalents should be full-time employment, *i.e.* a full-time employee equals one FTE. The measure on which the FTE calculation should be based should be the "normal or statutory working hours" and not, for instance, the "total or actual working hours" or "total or actual teaching hours". The full-time equivalence of part-time educational personnel is therefore determined by calculating the ratio of hours worked by part-time personnel over the statutory hours worked by full-time employees during the school year.

For example, if a country reports 1 000 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 1 100 *i.e.* 1 000 FTEs representing the full-time teachers and 100 FTEs representing the part-time teachers.

Note also that, given the definition of FT and PT, not all staff recorded as FT 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 FT but their FTE should be 0.9.

FTEs should be recorded in person-years and represent the working load over the entire year. If countries choose instead to calculate FTEs on a specific date, then seasonal variations in personnel should be accounted for.

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.

If working hour data are not available, estimates can be based on other information (*e.g.* salary).

4.3.5 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. The guidance that countries should follow in these circumstances differs depending on whether the reported data are *headcounts* or *full-time equivalents* and is as follows.

- **Headcounts:** 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, student numbers can be used as the basis for pro-rating though this will introduce circularity in the calculation of staff to student ratios.

- **Full-time equivalents:** In contrast, where reporting 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.

4.3.6 Orientation of educational programme of teaching staff

Teaching staff can be involved in the instruction of students on programmes with different orientation, *i.e.* general, pre-vocational or vocational (see Section 5.3.4 for definitions of these programme types). In classifying teachers by the orientation of the educational programme, the criterion that should be used is the programmes being followed by the students and not the specific subjects that the teacher teaches.

Where teaching staff are engaged in more than one type of programme and they are not separately identifiable as either teachers of general programmes or of vocational-technical programmes, then they should be allocated according to the rules set out in the previous section.

4.3.7 Teachers' working time, teaching time and non-teaching time

Teachers' 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 public holidays and festivities.

The countries formal policy can refer:

- only the time directly associated with teaching (and other curricular activities for students such as assignments and tests, but excluding annual examinations)
- or to time directly associated with teaching and to hours devoted to other activities related to teaching, such as lesson preparation, counselling students, correcting assignments and tests, professional development, meetings with parents, staff meetings and general school tasks

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 reported instead.

Working time in school is defined as the working time teachers are supposed to be at school, including both teaching time and non-teaching time.

Teachers' working time can be divided into ***teaching time*** and ***non-teaching time***.

Teaching time is defined as the number of hours per year that a full-time teacher teaches a group or class of students according to the formal policy in that country.

Teaching time is calculated as the ***net contact time for instruction***, *i.e.* excluding both time allocated for breaks of ten minutes or more and days that the school is closed for holidays. To have a comparable measure

of teaching time, teaching periods must be transformed into 60-minute periods (*e.g.* a 45-minute lesson = 0.75 hour).

So, the formula used to calculate *hours of teaching time per year* is:

Number of teaching days per year * Number of hours a teacher teaches per day

Where *Number of teaching days per year* is calculated as:

[Number of teaching days per week * number of teaching weeks per year]–[number of days that the school is closed for holidays]

and *Number of hours a teacher teaches per day* converts teaching periods into 60-minute periods and excludes breaks of ten minutes or more duration.

An exception to the use of this formula is the calculation of teaching time at the pre-primary and primary level, where short breaks are to be *included* if the classroom teacher is responsible for the class during these breaks.

In cases where no specified compulsory teaching time is defined but a minimum or maximum limit is provided, the respondent should estimate the *typical* teacher's teaching time.

Non-teaching time refers to the number of hours (60 minutes) a full-time teacher spends per year according to the formal policy on:

- *Teaching-related tasks*, such as lesson preparation, correction of assignments and tests, supervision activities, meetings on student reporting, annual exams, meetings with parents;
- *General school tasks*, such as providing student support, cultural activities, meetings, supervision of students during breaks and administrative tasks; and
- *Professional development activities*, such as observational visits to other schools, attending internal or external conferences, workshops or training.

Some of these activities may take place inside or outside of the school, depending on the formal policy in that country.

4.3.8 Teachers' salaries: Gross statutory salary, adjustments to base salary and additional bonuses

The ***annual gross statutory salary*** is the sum of wages according to existing salary scales *including* bonuses that constitute a regular part of the annual base salary, like a thirteenth month or holiday bonus.

For example in Spain, the "trienios" (a small salary supplement added to the salary of teachers after every three-year period of service) and the "sexenios" (a salary supplements added after each six-year period and related to the in-service training) are included in the annual gross statutory salary figures.

It is the gross salary from the ***employee's*** point of view, since it *includes* the part of social security contributions and pension scheme contributions that are paid by the ***employees*** (even if deducted automatically from the employees gross salary by the employer). However, the ***employers'*** premium for social security and pension is excluded. For example a teacher in the United Kingdom receives a monthly gross salary from which some 6 per cent is automatically deducted for the employees' contribution towards the national health insurance scheme. Separately, the employer pays an employers' contribution towards the scheme. So in the reported data the gross salary reported should be the salary before the 6 per cent is deducted and should exclude the employers' contribution.

The *starting salaries* refer to the average scheduled gross salary per year for a full-time teacher with the minimum training necessary to be fully qualified at the beginning of his or her teaching career.

Salaries after 15 years' experience refer to the scheduled annual salary of a full-time classroom teacher with the minimum training necessary to be fully qualified and with 15 years' experience.

The *maximum salaries* reported refer to the scheduled maximum annual salary (top of the salary scale) of a full-time classroom teacher with the minimum training to be fully qualified for his or her job.

Additional bonuses to base salary are additional payments that teachers may acquire in addition to the amount received on the basis of educational qualification and experience (salary scale).

In the Network C collection of data, the ***maximum*** additional bonus is collected. These bonuses may be awarded for teaching in remote areas, for participating in school improvement projects or special activities, for teachers with Management responsibilities in addition to teaching duties (*e.g.* serving as a head of department or co-ordinator of teachers in a particular class/grade) or for excellence in teaching performance. It follows that the maximum bonuses may not be available to all teachers in their particular locations/circumstances.

4.3.9 Teacher qualifications

Minimum level of qualification/training required to teach at a given ISCED level is defined as the typical duration and type of training required for entry to the profession. It does not include eventual, further requirements to become a licensed teacher in the public school system such as probation years.

Typical level of qualification/training is defined as the level of qualification and training teachers typically have at a given ISCED level. There are always deviations: teachers may be overqualified or under qualified for the level where they teach. This is particularly the case in times of policy change (*e.g.* when the level of training requirement is raised or lowered).

Maximum qualification/training is defined as the highest level of qualification recognised from the point of view of compensation.

A fully qualified teacher is one who has fulfilled all the training requirements for teaching (a certain subject) and meets all other administrative requirements (*e.g.* probation period) according to the formal policy in a country.

4.4 School organisation and curriculum

4.4.1 Instruction time

Intended instruction time is defined as the amount of time a student *ought* to receive instruction from a classroom teacher. This is measured in the number of class sessions per year.

A class session is the length of time each lesson runs for during a normal day. Some classes run for double (or more) periods but the class periods refer to the basic unit of time used to break up the teaching day.

For countries that have no formal policy on instruction time, the number of hours should be estimated from survey data.

Intended instruction time **includes**:

- Compulsory and non-compulsory parts of the curriculum
- Out-of school activities which are formal parts of the programme

But **excludes**

- Hours lost when schools are closed for festivities, such as national holidays,
- Non-compulsory time outside the school day.
- Homework, individual tutoring or private study taken before or after school.

4.4.2 Curriculum

Intended (or prescribed) curriculum is defined as the study areas and their time commitments, which can be prescribed at a school, local or national level.

The intended curriculum is embodied in textbooks, curriculum guides, the content of examinations, and in policies, regulations and other official statements generated to direct the educational system. The *intended curriculum* comprises both compulsory and non-compulsory parts of the curriculum.

The ***national curriculum*** is usually set out in a document describing the common goals, objectives and quality and/or content criteria of a national school system. This document may take the form of standards (defined objectives and achievement criteria at given levels of education and in specific subjects of study areas) without actual time allocation or mention of subjects. It may also resemble a timetable (specified number of periods for each subject and in each grade by program). It may also indicate the extent to which decisions on curriculum content and final time allocation can be made on the local or school level.

The ***compulsory curriculum*** is defined as the amount and allocation of instruction time that has to be provided in ALMOST EVERY public school and must be attended by ALMOST ALL public sector students.

The compulsory curriculum is often specified in the national curriculum, which may describe the common core elements (goals, study areas, skills and skill levels, core content) to be included in all curricula within the country. However, subjects within the compulsory curriculum may vary according to the degree of flexibility **within** study areas and **across** study areas.

- ***Compulsory core curriculum*** is defined as the set of subjects or groups of subjects (study areas) that are common to all students such as mathematics, science, social studies, mother tongue and, in some cases, a foreign language, which can be considered core study areas. Even if all core study areas must be studied by all students, choices may be made **within** the study area, for example there may be a choice between an integrated science subject or separate science subjects like biology or physics, or between foreign languages (*e.g.* French, or Italian, etc.). In some countries, local school systems or schools are to establish the subjects within the timeframe and compulsory study areas defined at the national level. In others, subjects and the time to be allocated to them are defined at the national level. However, in most countries some provision is made to define a common core curriculum.
- ***Compulsory flexible curriculum*** is defined as the part of the compulsory curriculum where there is flexibility in time spent on a subject and/or a choice can be made **between** study areas. For example, a school may be able to choose between offering religious education, or more science, or art, but to offer one of these is considered compulsory within the compulsory time framework. Alternatively, a student may have choices between study areas within the flexible part of the compulsory curriculum. The compulsory flexible curriculum is part of the compulsory time frame for instruction from the point of view of the student.

The ***non-compulsory curriculum*** is defined as the average instruction time students are entitled to above the compulsory hours of teaching. These subjects often vary from school to school or from region to region, and may take the form of "non-compulsory elective" subjects.

4.4.3 Classes and class size

A ***class*** is a group of students who receive tuition together.

Class size is simply the number of students in the group who receive tuition together. In general, the calculation of ***average class size*** is simply the total number of students divided by the total number of classes.

Note, however, that in some countries, a ***'class'*** or ***'division'*** can refer to a group of students enrolled together but who follow different strands of a programme. Here students are grouped together based on the highest number of common courses which they are pursuing- perhaps the compulsory part of the curriculum. Thus, a 'class' or 'division' is the pedagogical grouping into which students are registered. Regardless of the level of study, a student is usually registered in only one division. The class/division divides into ***'groups'*** for specific modules of the programme. See ***Chapter 7*** for how these should be handled in the calculation of ***average class size***.

4.5 Educational institutions

4.5.1 Basic definition

Although educational institutions are no longer a unit of statistics for the purpose of the regular international data collections on education (data on the number of educational institutions is no longer collected), the definition of educational institutions is crucial particularly in defining the coverage of educational expenditure. Moreover, despite the fact that, in the context of lifelong learning, educational institutions may lose their primary position, they remain important because of the major role they play especially in formal education.

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

In the context of this definition, there remains ambiguity surrounding the definition of institutions as separately identifiable statistical units. In particular, the issue of whether an institution with several campuses should be regarded as a single or multiple institution, still needs to be properly addressed. Further complications arise where campuses are located in another country and in the area of distance learning, particularly where the courses are internet based. Further work is needed in this area.

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

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.

4.5.2 Instructional and Non-Instructional Educational Institutions

Instructional educational institutions are those that provide ***educational programmes*** for students that fall within the scope of education statistics defined in Chapter 3.

In this document the generic term ***"school"*** is often used to refer to instructional institutions at the primary, secondary, and post-secondary non-tertiary levels, and **"universities"** to those at the tertiary level. Instructional institutions are those where students will typically enrol in order to study educational programmes.

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

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 central agencies responsible for the remuneration of staff or pension payments); and analogous bodies in the private sector (*e.g.* diocesan offices that administer Catholic schools, and agencies administering admissions to universities).
- ***Entities providing support services*** to other educational institutions including institutions that provide educational support and materials as well as operation and maintenance services for buildings. These may be part of general-purpose units of public authorities. 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 should be included in the data collection. In that sense, general-purpose units of public authorities should be treated as educational institutions to the extent that they provide services to schools or students.
- 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).

Some entities which perform these services and functions may well be part of larger public or private entities which provide other services or provide the same services to bodies other than educational institutions. In all cases it is only those services and functions performed by these entities for students or educational institutions which are within scope of the education statistics.

4.5.3 Public/Private/Government-Dependent Private Institutions

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

Classifying between public and 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. So,

An institution is classified as ***public*** if ultimate control rests with (1) a public education authority or agency or, (2) a governing body (Council, Committee etc.), most of whose members are appointed by a public authority or elected by public franchise.

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

Discussion

In classifying educational institutions as either public or private, only the school-based component of combined school- and work-based programmes should be considered. Similarly, for the classification of students enrolled in public or private institutions, only the school-based component of combined school- and work-based programmes should be considered.

For example, if a student performs the school-based component in a public school and the work-based component in a private enterprise, the enrolment for this student should be reported under the "public" heading.

The extent to which an institution receives its funding from public or private sources does not determine the classification between a public and a private institution. It is possible, for example, for a privately managed school to obtain all of its funding from public sources and for a publicly controlled institution to derive most of its funds from tuition fees paid by households.

Likewise, the issue of whether or not a public or private body owns the buildings and site of a school is not crucial to the classification status. The term "ownership" may refer to the ***ownership of school buildings and site***, or alternatively ownership of the institution in the sense of ultimate management control. Only in the latter sense is ownership a relevant concept in classifying institutions.

Privately managed but publicly funded schools may be subject to some regulation or control by public authorities, but these institutions should 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.

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.

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.

Classifying between government-dependent private and independent private institutions

The terms "***government dependent***" and "***independent***" refer only to the degree to which a private institution is dependent on funding from government sources; they do not refer to the degree of government direction or regulation.

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

"Core funding" refers to the funds that support the basic or core 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 should **not** be 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 should be made for classes of institutions rather than for individual institutions.

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

4.6 Educational Expenditure

This section provides specific and detailed definitions and concepts used in the compilation of international statistics on educational finance.

Section **4.6.1 Coverage of educational expenditure** defines 'educational expenditure' for the purposes of this manual and states the framework within which the international education finance data are

collected. The goods and services provided by educational institutions which are covered by the statistics are defined, as is the coverage of expenditures which take place outside of educational institutions.

Section **4.6.2, Sources of funds and types of transactions,** describes the sources and flows of educational expenditure, examining levels of government involved, the transfers between them and types of transaction involved. This section provides definitions of public and private expenditures as wells as the transfer payments to be included: public transfers to the private sector, including financial aid to students, and intergovernmental transfers.

Finally, Section **4.6.3**, **Resource categories for expenditure of educational institutions**, describes the breakdown categories for resources used in educational institutions: capital and current expenditure, compensation of personnel, and expenditure on ancillary services.

4.6.1 The Framework for educational expenditure

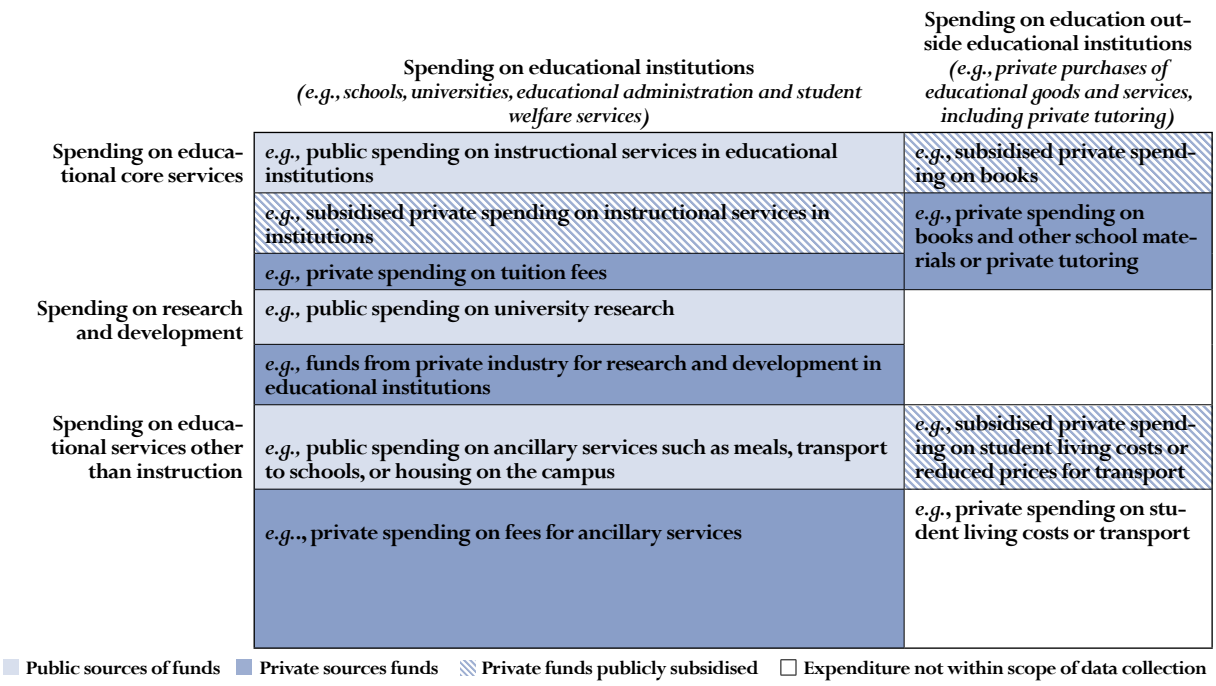
IDEALLY, international comparisons of educational expenditure should be defined in terms of the educational goods and services which are purchased in relation to the educational programmes within the scope of the data collection which is stated in Chapter 3.

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 **goods and services** provided or purchased (both instructional and non-instructional);
- The **location/provider** from which these goods and services are purchased/provided (*i.e.* inside or outside educational institutions); and
- The **source of funds** that finance the provision or purchase of these goods and services (public, private sources).

Figure 1

illustrates the framework around these three dimensions:



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

- The first row, labelled ***"spending on educational core services"***, includes all expenditure that is directly related to instruction and education. This should cover all expenditure on teachers, school buildings, teaching materials, books, tuition outside schools, and administration of schools.
- The second row, labelled ***"spending on 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 as recognised by the Frascati Manual.
- The third row labelled ***"spending on educational services other than 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 different **service providers**. Service providers are separated into "educational institutions" and "other- outside of educational institutions."

- The first column, ***"spending on educational institutions"***, covers expenditure on educational institutions. Educational institutions include teaching institutions (schools, colleges and universities) and non-teaching institutions, such as ministries, local authorities and student unions directly involved in providing and supporting education .(See Section 4.5 for full definition).
- The second column, ***"spending on education outside of educational institutions",*** covers expenditure on educational services purchased outside educational institutions, *e.g.* books, computers, external tuition, etc. It also covers expenditure on non-instructional goods and services such as student living costs and costs of student transport provided outside of institutions.

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

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

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

4.6.2 The coverage of educational expenditure

Summary of coverage

Thus *coverage of the finance data*:

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 stated in Chapter 3
- ***Private, non-subsidised expenditure on student living costs outside of educational institutions***

Note: This is the definition of the coverage of the collection as a whole. For the calculation of specific indicators, the coverage can be a subset of this. See Chapter 7 for details.

Accounting principles

In keeping with the system used by many countries to record government expenditures and revenues, the OECD 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 subsequent "Difficult cases" section) 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.

Details of coverage

This coverage is now discussed in more detail by considering first the coverage of ***goods and services*** provided by educational institutions and then those purchased from outside educational institutions.

4.6.2.1 Coverage of Goods and services provided by educational institutions

As section 4.5 states, ***educational institutions*** are chiefly defined as those providing goods and services to students and other educational institutions. However, if an entry is classified as an educational institution, this does not imply that all of its expenditure should be included. Many entities serve only partially as educational institutions.

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

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

INCLUDED:

- *Educational 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;
- *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;

EXCLUDED:

- Child care or day care provided by schools and other instructional institutions which are otherwise not in scope of the coverage stated in Chapter 3;
- Expenditure on educational activities outside the scope of the data collection as stated in Chapter 3 (*e.g.* leisure courses)
- 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

Difficult cases

The following categories of goods and services provided by educational institutions have posed particular problems for international comparability in the past and further clarification is therefore given here.

• ***Expenditures on research and development (R&D)***

All expenditure on research performed at universities and other institutions of tertiary education is ***included***, 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 should 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, 2003*b*) (See Annex 3).

• ***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 the cost 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 hospitals that it is directly and specifically related to the teaching of medical students and 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*** (see Annex 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, as such provision is outside the coverage of education stated in Chapter 3.

- ***Free or subsidised transport for students***

The classification of some public expenditure is ambiguous, since it may be classified either as an expenditure on ancillary services or as public subsidies to students in-kind. This applies especially to free or subsidised transport for students to travel to school or for students' use more generally.

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 bus service*- Free or subsidised transportation of students provided through a special school bus service should be classified as an ancillary service offered by the educational institution.
- F*ree/subsidised tickets for (local) transport companies*- if the main purpose of the expenditure is to fund the students' transport to school, the expenditure should be 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 should be 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 (see subsequent section on "Public subsidies to households")

- ***Educational expenditure at the workplace to train participants in combined school and work-based training programmes***

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

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

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

- ***Measurement of expenditure for contributions to retirement 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.

Note that the amount currently being paid in pensions to former employees who have already retired is **not** the desired measure of retirement expenditure, though these may form the basis for estimates.

Depending on the types of retirement schemes in operation in a country, estimates will need to be provided. In a ***fully funded***, contributory pension system, employers pay contributions for each of their current employees 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 contributions 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 contributions must be estimated or imputed- as if a funded system was in operation.

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. (Note: the intention here is not to compensate for any under-funding of pensions, but rather to impute the contributions equivalent to that which would be required to fund the expected pensions.)

The System of National Accounts 1993 (SNA93) as well as the European System of Accounts (ESA95) for EU countries gives some guidance on the reporting of imputed social contributions such as for retirement benefits and this guidance should be followed where possible. See Annex 4 for relevant extract from SNA93. In essence, the method used to estimate the imputed social contributions for education should be similar to the method used to estimate the total amount of these contributions for all activities in order to be as consistent as possible with the calculation of GDP and Total Public Expenditure

A reasonable estimate of the imputed costs may, for example, be obtained by estimating a contribution rate and applying that to the gross salaries of educational personnel whose retirement costs need to be estimated. This estimated contribution rate could, for instance, be based on the contribution rates that apply in other similar occupational groups. For example, in Germany the imputed contributions for teachers who are civil servants and who are covered by an unfunded system are derived by applying a contribution rate based on that which applies to other teachers/educational personnel who are not civil servants. The estimated contribution rate is multiplied by the total value of gross salaries paid to civil servants by educational institutions to give an estimate of the employer pension contributions.

4.6.2.2 Coverage of 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.

These are now discussed in more detail.

Student and household expenditure on educational goods and services purchased outside institutions includes:

- Expenditure on educational goods which are *required* for participation in the programmes and which are therefore imposed on the student either directly or indirectly by the educational institution. Examples are school uniforms, books requested for instruction, athletic or other equipment, material for arts lessons.
- Expenditure on educational goods which though *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 should be 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 should not be included. Purchases from commercial enterprises operated or sponsored by educational institution (*e.g.* university bookstores) should be regarded as expenditure outside educational institutions.

Expenditure on educational goods and services purchased outside institutions will typically 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.

Expenditure on student living costs outside educational institutions are included if they are subsidised through financial aid to students by public or private entities. The rationale for including these subsidies is that in most OECD 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 student and household expenditure for living costs which are paid to educational institutions (*e.g.* for student accommodation) is included in private expenditure regardless of whether it is subsidised or not. The following sections discuss the reporting of student scholarships, grants and loans in more detail.

4.6.3 Sources of educational expenditure and types of transactions

Sources of funds for educational expenditure are classified as either:

- Public (governmental) sources
- Private (non-governmental) sources
- International agencies and other foreign sources

These sources can be either initial of final payers of funds depending on what type of transaction is involved.

Three ***types of financial transactions*** are distinguished in the data:

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

The ***initial source of funds*** is the original source of the funds before transfers have taken place whilst the ***final source of funds*** is after transfers have taken place.

Each source of funds is now described in more detail.

Public (government) sources of expenditure

Summary definition

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 these services/activities are provided as ancillary services by educational institutions. 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).

Public expenditure on education ***includes*** expenditure by all levels of government, both education-specific authorities as well as other government agencies. Thus, central government expenditure includes not only the expenditure of national education ministries, but also all expenditure on education by other central government ministries and authorities. Similarly, educational expenditure by regional and local governments includes not only the expenditure of the regional or local agencies with primary responsibility for operation of schools (*e.g.* provincial ministries of education; or local education authorities) but also the expenditure of other regional and local bodies that contribute to the financing of education.

Public expenditure is classified by the following three *levels of government*:

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

For EU countries the NUTS99 classification (EUROSTAT, 2003) is used to determine the level of government. Any government entities in a Country that are not normally classified as central, regional, or local should be assigned to the most appropriate level, based on the scope of their responsibilities.

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

The classification of governments by level is clear in most cases, but there are some ambiguities. If a country only has two levels of government, the lower level should usually be designated local, not regional. If there are four or more levels, the second level should usually be designated regional and the third, local. If a city (such as the national capital) has dual status as both regional and local government, its expenditure should be classified as local, unless the national classification clearly regards the level as regional.

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.

Types of transaction for government expenditure

There are three main ***types of transaction for public expenditure*** on education:

- Direct public expenditure on educational institutions,
- Intergovernmental transfers for education, and;
- Public transfers or other payments (from governments) to private entities (households or other private entities).

Direct public expenditure on educational institutions

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

Purchases by a government body 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.

Payments by a government body 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.

Note: Direct expenditure by a government body does not include tuition payments received from students (or their families) enrolled in public schools under that body's jurisdiction, even if the tuition payments flow, in the first instance, to the government body rather than to the institution in question. Such tuition payments are reported as payments by students or households to public educational institutions.

Intergovernmental transfers of funds

Intergovernmental transfers are transfers of funds **specifically designated for education** from one level of government to another.

General-purpose intergovernmental transfers **should not be included** (*e.g.* revenue sharing grants, general fiscal equalisation grants, or distributions of shared taxes from a national government to provinces, states, or *Länder*), even where such transfers provide the funds that regional or local authorities draw on to finance education.

Central government transfers to local governments may be "passed through" regional governments for the regional governments to disburse 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 are classified as central government transfers to local rather than to regional governments.

Government transfers of funds to private entities

Government transfer to private entities fall into two distinct categories:

- ***Public subsidies to households*** (*e.g.* financial aid to students in the form of scholarships and loans to students for tuitions fees or living costs)
- ***Public subsidies to other private entities*** (*e.g.* government transfers and certain other payments to private entities such as commercial companies and non-profit organisations

Public subsidies to households

Public subsidies to households fall into two broad categories which together represent public ***financial aid to students***:

- Scholarships and other grants
- Student loans

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

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

Also, central government scholarships, grants and loans to households should be reported as expenditure by central government regardless of whether the funds are paid directly to the student or to an educational institution on behalf of the student.

Scholarships and other grants

Government scholarships and other government grants to students and households ***include*** the following items:

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

Note, however, that any tax benefits to students or their families, such as tax credits, tax reductions or other special tax provisions are ***excluded*** from public subsidies to households. It may be desirable in the future to include such benefits an internationally comparative methodology for doing so would need to be established.

Scholarships and grants - covers public scholarships and all kinds of similar public grants, such as fellowships, awards and bursaries for students.

Special public subsidies in cash and kind - covers all those transfers to households that are subsidies for specific spending by students. Whether provided in cash or in kind, such as reduced-price travel on public transport systems, it is the total value of the subsidies that should be reported. Subsidies to be included are only those where entitlement is contingent upon the recipient being a student and ***include*** those for:

- Transport;
- Medical expenses;
- Books and supplies;
- Social and recreational purposes;
- Study abroad; and
- Other special subsidies.

Family allowances or child allowances contingent upon student status - only those allowances that are contingent upon the recipient being a student are ***included***. Allowances that are independent of the educational status of a child should be ***excluded***.

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

Note: These scholarships and grants can be separately categorised as either those that are attributable to educational institutions (*i.e.* grants for payment of tuition and other fees) or those that are not. This distinction is important in determining expenditure by households on educational institutions net of subsidies. Loans received by students will not be netted out from household expenditure since they are interpreted as delayed private payments which, occur when loans are repaid.

Student loans

Government loans to students 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 should 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.

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 (see below).

The rationale for measuring government loans to students on a gross rather than net basis is that this (along with the expenditure on scholarships and grants) provides an appropriate measure of the financial aid provided to current participants in education in the current year. A net calculation of loan expenditure would be more appropriate for other purposes (*e.g.* for assessing the shares of public and private expenditure on education) but further work is needed to establish an internationally agreed method for doing this. (See Chapter 7 for how student loans are treated in such indicators).

Public transfers and payments to other private entities

Government transfers and payments (mainly subsidies) to other private entities (commercial companies and non-profit organisations) include:

- transfers to business or labour associations that provide adult education that are within scope of the collection;

- subsidies to private companies (or labour organisations and associations) for the provision of training at the workplace as part of combined school and work-based programmes, including apprenticeship programmes; and
- the cost to government of supporting loans paid to students by private financial institutions (*e.g.* interest subsidies, the cost of guaranteeing the loans, the cost of default payments).

Note: 'Other private entities' are expressly not educational institutions. (See section 4.5). For example, non-profit organisations that provide student housing or student meals are most likely to be classified as non-instructional educational institutions and transfers to them consequently should be recorded as direct expenditure on government-dependent or independent private educational institutions not as transfers to other private entities.

Private (non-government) sources of expenditure

Summary definition

Private expenditure refers to expenditure funded by private sources, *i.e.,* households and other private entities. "Households" means students and their families. "Other private entities" include private business firms and non-profit organisations, including religious organisations, charitable organisations, and business and labour associations. Private expenditure comprises school fees; materials such as textbooks and teaching equipment; transport to school (if organised by the school); meals (if provided by the school); boarding fees; and expenditure by employers on initial vocational training.

Classifications of Private Expenditure

Private expenditure on education includes expenditure by the following two groups:

- ***Private expenditure by households*** – *i.e.* students and their families
- ***Private expenditure by other private entities***- *i.e.* private businesses and non-profit organisations, including religious organisations, charitable organisations, business and labour associations.

Private expenditures: Household Expenditure

Household expenditure ***includes*** two types of transaction:

- Payments to educational institutions
- Payments on educational goods and services purchased outside educational institutions

Household payments to educational institutions

This includes:

- Fees for educational goods and services – ***including*** tuition fees, registration fees, laboratory fees, and charges for teaching materials such as books and materials
- Fees for ancillary services- ***including*** household payments for lodging, meals, health services, and other welfare services provided to students by the educational institutions.

Note: 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 reported figures should reflect the reduced amounts actually paid by these students.

Note: however, that scholarships and other financial aid to students *from governments or other private entities* should ***not*** be netted out, even if such aid is administered by, or passed through, the institutions.

Household payments for tuition fees for enrolments at public institutions paid to regional or local governments rather than directly to the institutions (*e.g.* a student attending a municipally operated upper secondary school may be required to pay a fee to the municipality) should nevertheless be reported under student/household payments to public educational institutions.

Household payments on educational goods and services purchased outside educational institutions

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

Educational *services* purchased outside institutions will mainly consist of private expenditure on private tutoring outside school.

A fuller discussion of these goods and services is covered in Section 4.6.2.2.

Private expenditure of other private entities

Expenditure by other private entities is of two types:

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

Direct expenditure on educational institutions by other private entities

Expenditure by other private entities on educational institutions ***includes***:

- Contributions or subsidies to vocational and technical schools from 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 combined school- and work-based educational programmes.

Financial aid to students or households provided by other private entities

This ***includes***:

- Scholarships provided by businesses and religious or other non-profit organisations
- Student loans from banks and other private lenders. As with public student loans, loans are reported as gross amounts, without the subtraction of payments of interest or repayments of the principal by the borrowers. Thus the student loan expenditure here should represent the total value of loans paid by banks and private lenders to students during the reference year.

Government subsidies of these private loans (in the form of interest subsidies or payments for defaulters) are recorded as public subsidies to other private entities.

Note: It is in fact arguable whether the unsubsidised value of these private loans should be included given the exclusion from the coverage of non-subsidised private expenditure on living costs. This is an area that clearly requires further consideration.

Funds from international agencies and other foreign sources

Expenditure by international organisations is of two types:

- International funds 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.

4.6.4 Resource categories for expenditure on educational institutions

Within educational institutions, expenditure is broadly categorised as either current or capital expenditure:

Current expenditure- expenditure on goods and services consumed within the current year, which needs to be made recurrently 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- 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.

Capital expenditure represents the value of educational capital assets acquired or created during the year in question *i.e.* the amount of capital formation regardless of whether outlays were financed from current revenues or by borrowing. In other words, capital outlays should 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.

Debt servicing expenditure ((1) payments of interests on the amounts borrowed for educational purposes and (2) repayments of the principal) is ***excluded*** from the coverage of the expenditure data.

Current expenditure is broken down into the following categories:

- Expenditure on compensation of personnel
- Current expenditure other than compensation of personnel

Expenditure on compensation of personnel

Expenditure on compensation of personnel ***includes***:

- Salaries
- Expenditure on retirement
- Other non-salary compensation (fringe benefits).

Salaries - are 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. Additional bonuses to basic salary (*e.g.* arising from the experience, age or other circumstances of the personnel) should be included.

Expenditure for retirement (pension schemes) - covers actual or imputed expenditure by employers or third parties to finance retirement benefits for current educational personnel. This expenditure ***excludes*** pension contributions made by the employees themselves, whether deducted automatically from their gross salaries or otherwise. (See section on "Difficult cases" earlier in Section 4.6 for a fuller definition and guidance on how these amounts should be measured).

Expenditure on other non-salary compensation - covers 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.

Expenditure on compensation of personnel is also categorised by *type of personnel* distinguishing:

- Teaching staff
- Non-teaching staff

The definitions and coverage of these categories is as set out in Section 4.3.

Note: however that compensation of teaching staff should include appropriate portions of the compensation of non-teaching staff who have some teaching responsibilities (defined as in Section 4.3 as those who spend at least 0.25 FTE of their working time teaching).

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

Current expenditure other than compensation of personnel

The following expenditure is included under this heading:

Expenditure on contracted and purchased services : expenditure on services obtained from outside providers, as opposed to services produced by the education authorities or educational institutions themselves using their own personnel.

Examples are:

- Services obtained under contracts such as maintenance of school buildings
- Ancillary services, such as preparation of meals for students
- Rents paid for school buildings and other facilities

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: For example, the property taxes that educational institutions may be required to pay.

Note: that **financial aid to students is not included here unless** it is provided by the institution's own funds in the form of a reduction in tuition fees or waiver of fees **and** it exceeds household payments to the institution. This is because household expenditure payments to educational institutions are themselves calculated as net of institutional subsidies.

Notes

1. see Chapter 5 for a descripton of the different fields of education.

Chapter

5

THE DEFINITION AND CLASSIFICATION OF EDUCATIONAL PROGRAMMES: THE PRACTICAL IMPLEMENTATION OF ISCED

5.1 Introduction

This chapter covers the conceptual, definitional and classification issues concerning educational programmes. It is organised in three parts. The first part begins with an overview of the International Standard Classification of Education (ISCED-97) which provides the foundation for internationally comparative education statistics and goes on to set out the definitions and classifications that apply to educational programmes within it. The second part then sets out in detail how educational programmes are allocated within each ISCED level, considering the criteria that define the boundaries between educational levels. The final part shows how ISCED-97 is operationalised by detailing how each OECD countries' national educational programmes are in practice mapped to the ISCED-97 classification. These mappings are reviewed on an ongoing basis and so may have been revised since publication of this book; the up to date mappings can be found on the OECD website at www.oecd.org/edu.

5.2 Overview of ISCED-97

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.

The increasing complexity of education systems over the next 20 years, often reflecting more choice between types of programmes and modes of attendance, imposed new difficulties for the international comparability of education statistics and many of these changes could no longer be adequately reflected in data collected under ISCED-76. The case for a revised ISCED was clear. Following a collaborative effort involving UNESCO, OECD and Eurostat, ISCED-97 was adopted as the replacement for ISCED-76 by the UNESCO General Conference in 1997, and the UNESCO ISCED-97 Manual was published in November of that year (UNESCO 1997).

ISCED-97 is designed to provide an *integrated* and *consistent* statistical framework for the collection and reporting of *internationally comparable* education statistics. It is a programme-based taxonomy which seeks to reduce complex national educational structures along certain classification criteria into defined international categories. It thus provides the basis for transforming detailed national education statistics, 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.

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. This does not mean, of course, that all data collection based on ISCED need necessarily to have that coverage. Indeed, as set out in Chapter 3, the coverage of the OECD education statistics takes a slightly more narrow focus excluding, for instance, solely work-based education and training and learning which is primarily for leisure or recreational purposes.

The educational programme (defined in the next section) is the basic unit of classification in ISCED-97. Each programme should be allocated to a particular level of education on the basis of its educational content, which in practice is determined by applying classification criteria such as typical starting ages, entrance qualifications, and type of qualification awarded. The introduction of these multi-dimensional criteria in ISCED-97 was necessary to capture the complexities of modern education systems and represented a major shift from the uni-dimension ladder system on which ISCED-76 was based.

The allocation of national programmes to ISCED levels on a consistent basis across countries is fundamental to ensuring the meaningfulness of the statistics and indicators that are compiled from the data. For that

reason, to accompany the UNESCO ISCED Manual, OECD published "Classifying educational programmes: Manual for the implementation of ISCED-97 in OECD countries" (OECD, 1999). The guide aimed to provide clear guidance to OECD countries on how to implement the ISCED-97 framework in international data collections and crucially included proposed allocations of national educational programmes to ISCED-97 for OECD countries (see Section 5.5).

ISCED-97 was first integrated into the joint OECD, Eurostat and UNESCO UOE data collection for the school year 1998, the indicators from which were published in the 2000 edition of OECD's *Education at a Glance*.

5.3 Definition and classification of educational programmes

The educational programme is the basic unit of classification within ISCED-97 and as such is the main building block for international statistical comparisons in education. This section first of all provides a definition of an educational programme and then describes the various ways in which such programmes can be classified: by level, field of education, vocational/general orientation, school based or combined school and work-based programmes.

5.3.1 Definition of an educational programme

An **educational programme** is defined as a collection of educational activities which are organised to accomplish a pre-determined objective or the completion of a specified set of educational tasks.

The term *educational activities* has a broader meaning than for instance the terms "course" or "class". Educational activities can be courses (*e.g.* the study of individual subjects) organised into programmes as well as free-standing courses. They can also include a variety of components not normally characterised as courses, for example interludes of work experience in enterprises, research projects, and preparation of dissertations.

Objectives can, for instance, be the preparation for more advanced study, the achievement of a qualification, preparation for an occupation or range of occupations, or simply for an increase in knowledge and understanding.

So, an educational programme could simply be the study of a single subject leading to a recognised qualification or it can be the study of a collection of subjects, along with perhaps a period of work experience, all of which contribute towards the same qualification aim.

When a national programme has programme options or paths of study that differ with respect to one or more of the criteria that are used to classify educational programmes within ISCED (see Section 5.3.2.1), then 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).

5.3.2 Classification of educational programmes by level

In summary, the levels to which programmes are assigned within ISCED-97, are as follows:

ISCED-97 Level	Description
0	Pre-primary level of education
1	Primary level of education
2	Lower-secondary level of education (sub-categories 2A, 2B and 2C *)
3	Upper secondary level of education (sub-categories 3A, 3B and 3C*)
4	Post-secondary, non-tertiary education (sub-categories 4A, 4B and 4C*)
5	First stage of tertiary education : not leading directly to an advanced research qualification (sub-categories 5A and 5B*)
6	Second stage of tertiary education : leading to an advanced research qualification

* Distinguishing between the destinations that the programmes are theoretically designed to prepare students for.

A detailed description of each of these levels is given in Section 5.4.

It is worth noting that in the original ISCED-97 framework approved by UNESCO, Level 4 was divided into two sub-categories only: 4A and 4B. However, in order to maintain a parallel structure to the three-way split of educational and labour market destinations of Level 3, Level 4 was split into three categories in the implementation of ISCED (see also Section 5.4.5).

In ISCED-97, a 'level' of education is broadly defined as the gradations of learning experiences and the competencies built into the design of an educational programme. Broadly speaking, the level is related to the degree of complexity of the content of the programme. This does not, however, imply that levels of education constitute a ladder, where access of prospective participants to each level **necessarily** depends on the successful completion of the previous level, 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.

In summary, **the level of an educational programme should be determined by its educational content**. It is very difficult, 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 clear judgements 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 simply do not yet exist. The lack of such information on programme equivalence seriously undermines the international comparability of the statistics and indicators that are analysed by level of education and this remains a major challenge for future improvement.

In the absence of such standards, ISCED-97 defines various criteria which describe the characteristics of a programme and its students that should be used as proxies for the content of the programme in allocating national programmes to ISCED levels.

5.3.2.1 Criteria used in allocating programmes to levels

Section 5.4 describes in detail the criteria – main and auxiliary – that should be used in the allocation of programmes to each respective level within ISCED-97. A number of the criteria are specific to individual ISCED levels (*e.g.* the requirement that an ISCED 6 programme should include the submission of a thesis or dissertation) but there are some criteria which are more commonly used and these are described here.

- **Ages of participants**- it is important to distinguish between ***theoretical ages*** and ***typical ages***:
  - ***Theoretical ages*** refer to the ages as ***established by law and regulation*** for the entry and ending of a cycle of education whereas ***typical ages*** refer to the ages that normally correspond to the age at entry and ending of the programme (usually the most common age for entry or ending a programme).
  - ***Starting age:*** the age at the beginning of the first school/academic year of the corresponding level and programme.
  - ***Ending age:*** the age at the beginning of the last school/academic year of the corresponding level and programme.
  - ***Graduation age:*** the age at the end of the last school/academic year of the corresponding level and programme when the degree is obtained. Note that at some levels of education the term "graduation age" may not translate literally and would be equivalent to a "completion age"; it is used here purely as a convention.
  - ***Theoretical ending ages*** are derived by adding the ***theoretical duration of the programme*** (see below) to the theoretical starting age, where the theoretical duration assumes full-time attendance in the regular education system and that no year is repeated.
- **The duration of the programme** - the standard number of years (or days or weeks or months) in which a student can complete the education programme. The duration can be either *theoretical* or *typical*. The ***theoretical duration of the programme*** is that which is set out in law or regulations and may differ from the ***typical or average duration of the programme*** which reflects the time that students take in practice to complete the programme. The *"full-time equivalent duration*" refers to a weighted average of the length of time it takes a full-time student to complete and the length of time it takes part-time students to complete. Tertiary programmes and particularly ISCED 5 programmes use the *"**Cumulative theoretical duration**"* which represents the full-time equivalent duration of the programme from the start of level 5. Thus if a programme requires the completion of another tertiary programmes prior to admission, the cumulative duration includes the duration of the programmes required for entry.
- **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.
- **Qualifications awarded** - the type of certifications or diplomas that are awarded upon successful completion of the programme (Section 4.2.3 deals with the definition of successful completion).
- **Type of subsequent education or destination** - the destination for which the programmes have been theoretically designed to prepare students (see Section 5.3.5).
- **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 (see Section 5.3.4).

5.3.2.2 Advice on the application of the criteria

It should be stressed again that ideally programmes should be allocated to levels on the basis of the complexity of the educational content; the use of the programme characteristics listed above should be used only as proxies for this if no other better information is available. In countries where a national qualification framework exists, these too can be used as a reference for the allocation to ISCED levels.

A fundamental aspect of the proxy criteria listed is that they complement, rather than exclude, each other. For example, while some students may be classified to the "primary level of education" on the basis of their *ages (*"Primary education usually begins at age 5, 6 or 7"), that criterion is clearly inappropriate for adults on adult literacy programmes. Here adult literacy programmes are allocated to ISCED 1 if the *content* of the programmes are similar to regular programmes in primary education.

Similarly, neither the *duration* of an educational programme nor its *theoretical and typical starting ages* should be the sole criterion for its level attribution. For example, in Australia, New Zealand, and the United Kingdom, a qualifications framework based on *recognition of competencies* is used to organise the final years of secondary education and/or the first years of the tertiary level of education. The existence of such a competence-based organisational framework means that programmes at the boundary between these educational levels in these countries cannot be solely allocated on the basis of 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.

If it is the case 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, these transition points should be consistent with the classification criteria stated above. In any case, if the ISCED-97 framework does not match the data reporting framework in all countries perfectly, countries are advised to apply estimation procedures either to 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.

5.3.2.3 Classification of difficult cases

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 collection, 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 regular programmes that can be more easily mapped to ISCED-97. For some programmes, the equivalence of the qualifications or certifications awarded upon successful completion will be the guide to classifying 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.

Programmes organised by the military which meet the coverage criteria can also cause difficulty. Again, 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.

5.3.3 Field of education of programmes

Programmes are classified into fields of education as defined in the 2-digit classification of fields within ISCED-97. An exception to this is where the single ISCED-97 category 'Teacher training and education science' is split into two separate categories. The classification is also consistent with the fields defined in the *Fields of Education and Training – Manual* (EUROSTAT, 1999) which disaggregates the ISCED field classification to a lower level.

In summary, the classification distinguishes the following fields:

- **Education**
  - Teacher training (Category 141)
  - Education science (142)
- **Humanities and Arts**
  - Arts (21)
  - Humanities (22)
- **Social sciences, business and law**
  - Social and behavioural science (31)
  - Journalism and information (32)
  - Business and administration (34)
  - Law (38)
- **Science**
  - Life sciences (42)
  - Physical sciences (44)

- Mathematics and statistics (46)
- Computing (48)

• **Engineering, manufacturing and construction**

- Engineering and engineering trades (52)
- Manufacturing and processing (54)
- Architecture and building (58)

• **Agriculture**

- Agriculture, forestry and fishery (62)
- Veterinary (64)

• **Health and welfare**

- Health (72)
- Social services (76)

• **Services**

- Personal services (81)
- Transport services (84)
- Environmental protection (85)
- Security services (86)

This classification applies to all levels of education. Students not classifiable by field of education should be allocated to the category "Field of education unknown". Annex 5 provides details of the coverage of each of the two digit fields.

5.3.4 *Programme orientation*

Programmes at ISCED levels 2, 3 and 4 are sub-divided into three categories of *programme orientation* based on the degree to which a programme is specifically oriented towards a particular class of occupations or trades and leads to a labour-market relevant qualification:

- **Type I** (general): Covers education which is more general and 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 per cent of the programme content is vocational or technical.
- **Type II** (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 III** (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.

5.3.5 Programme destination

Programmes at ISCED levels 2, 3, 4 and 5 are sub-divided according to the destination for which the programmes have been designed to prepare students. The destinations distinguished vary for each of the ISCED levels and can be further study on a programme at a higher level, further study on a programme at the same level or entry into the labour market. Section 5.4 fully details the breakdowns for each ISCED level but the following table represents a broad summary:

ISCED level	Sub-division	Destination
2	2A	ISCED 3A or 3B programme
	2B	ISCED 3C programme
	2C	Labour Market
3	3A	ISCED 5A programme
	3B	ISCED 5B programme
	3C	Another ISCED 3 programme or an ISCED 4 programme or the labour market
4	4A	ISCED 5A programme
	4B	ISCED 5B programme
	4C	Other ISCED 4 programme or the labour market
5	5A	High skills profession or advanced research programme
	5B	Particular occupation

5.3.6 School-based and combined school- and work-based vocational and technical programmes

Although ISCED-97 itself does not make such a distinction, vocational and technical programmes can be either "school-based programmes" or "combined school- and work-based programmes". (***Note***: as stated in Chapter 3, solely work-based programmes are excluded from the coverage of the statistics.)The distinction between the two is based on the amount of training that is provided in-school as opposed to training at the workplace. The following definition is used for this distinction:

- 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. As a guide, 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, including distance education, where this is part of the programme).
- In *combined school- and work-based programmes* instruction is shared between school and the workplace, although instruction may take place primarily at the workplace. As a guide, 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. 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).

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

5.4 Detailed description of ISCED levels and application of the classification criteria

As stated in Section 5.3.2, there exist several main and auxiliary criteria that act as proxy measures for educational content, which can help point to the level of education that any given educational programme should be classified into. These criteria are outlined in Table 5.1 for each ISCED-97 level and are discussed in detail for the specific ISCED levels presented in the remainder of this Chapter.

5.4.1 ISCED 0 – Pre-primary level of education

Definitions and classification criteria

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

Boundary between education and child care. Some countries internally define pre-primary or early childhood education more broadly than others. Thus, the comparability of international statistics on pre-primary education depends on each country's willingness to report data for this level according to a standard international definition, even if that definition diverges from the one that the country uses in compiling its own national statistics. The distinction between programmes that would fall into ISCED 0 and programmes that would be outside of the scope of ISCED-97 rests primarily on the educational properties of the programme. As the educational properties are difficult to assess directly, several proxy measures should be used to determine whether or not a programme should be classified at this level. ISCED 0 programmes should be centre or school-based, be designed to meet the educational and developmental needs of children at least 3 years of age, and have staff that are adequately trained (*i.e.* qualified) to provide an educational programme for the children.

Centre-based. For a programme to be considered as pre-primary education, it must be school-based or centre-based. These terms are used to distinguish activities in organised educational settings from services provided in households or family settings, which would generally not be included at this level. These centres may come under the jurisdiction of a public or private school or other education service provider.

Age range. Programmes at this level are typically designed for children at least 3 years old and not older than 6. Most OECD countries consider the *typical starting age* of pre-primary education to be three years or older and do not include children younger than three in their own national statistics on pre-primary education. In some cases, however, programmes that are considered "educational" by the country concerned serve children as young as two or two-and-a-half. An educational programme cannot be considered as belonging to level 0 if it is primarily designed to serve children aged two years or less.

The upper age limit depends in each case on the typical age for entry into primary education, typically age 6 or 7.

Staff qualifications and educational content in the curriculum. As it is very difficult to specify precisely where child-care ends and education begins for children at very young ages, it is necessary to rely on proxy criteria. The requirement of pedagogical qualifications for the teaching staff can be a good proxy criterion to distinguish an educational programme from a non-educational programme. It serves to distinguish pre-primary education from child-care for which para-medical or no qualifications are required. In countries where the government does not closely regulate pre-primary education (*e.g.* there

Table 5.1
Description of ISCED-97 levels, classification criteria, and sub-categories

0 Pre-Primary Level of Education	Main criteria	Auxiliary criteria	Sub-categories
Initial stage of organised instruction, designed primarily to introduce very young children to a school-type environment.	Should be centre or school-based, be designed to meet the educational and developmental needs of children at least 3 years of age, and have staff that are adequately trained (i.e., qualified) to provide an educational programme for the children.	Pedagogical qualifications for the teaching staff; implementation of a curriculum with educational elements.	

1 Primary Level of Education	Main criteria	Auxiliary criteria	Sub-categories
Normally designed to give students a sound basic education in reading, writing and mathematics.	Beginning of systematic studies characteristic of primary education, e.g. reading, writing and mathematics. Entry into the nationally designated primary institutions or programmes. The commencement of reading activities alone is not a sufficient criteria for classification of an educational programmes at ISCED 1.	In countries where the age of compulsory attendance (or at least the age at which virtually all students begin their education) comes after the beginning of systematic study in the subjects noted, the first year of compulsory attendance should be used to determine the boundary between ISCED 0 and ISCED 1.	

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 breakpoint for this organisational change, however, then countries should artificially split national programmes into ISCED 1 and 2 at the end of 6 years of primary education.	**A**	Programmes designed to prepare students for direct access to level 3 in a sequence which would ultimately lead to tertiary education, that is, entrance to ISCED 3A or 3B.	**1**	Education which is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational/technical education programmes. Less than 25 per cent 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 per cent 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 prepare students		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 per cent 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 per cent vocational or technical.
There are substantial differences in the typical duration of ISCED 3 programmes both across and between countries, typically ranging from 2 to 5 years of schooling.		Modular programmes should be classified at level "3" only, without reference to the educational or labour market destination of the programme.	**C**	ISCED 3C: programmes at level 3 not designed to lead directly to ISCED 5A or 5B. Therefore, these programmes lead directly to labour market, ISCED 4 programmes or other ISCED 3 programmes.	**3**	Education which prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

4 Post-Secondary Non-Tertiary

Main criteria	Types of programmes can fit into level 4		Destination for which the programmes have been designed to prepare students		Programme orientation
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 per cent of the programme content is vocational or technical.
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 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 per cent vocational or technical.
	The second type of programmes are nationally considered as upper secondary programmes, even though entrants to these programmes will have typically already completed another upper secondary programme (i.e., second-cycle programmes).	C	Programmes at level 4 not designed to lead directly to ISCED 5A or 5B. These programmes lead directly to labour market or other ISCED 4 programmes.	3	Education which prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification.

5 First Stage of Tertiary Education

Classification criteria for level and sub-categories (5A and 5B)			Cumulative theoretical duration at tertiary		Position in the national degree and qualifications structure
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.		A		1	
The minimum cumulative theoretical duration (at tertiary level) is of three years (FTE). The factury must have advanced research credentials. Completion of a research project or thesis may be involved.	The programmes provide the level of education required for entry into a profession with high skills requirements or an advanced research programme.	B	Duration categories: Medium: 3 to less than 5 years; Long: 5 to 6 years; Very long: More than 6 years.	2	Categories: Intermediate; First; Second; Third and further.
Programmes are more practically oriented and occupationally specific than programmes at ISCED 5A and they do not prepare students for direct access to advanced research programmes. They have a minimum of two years' full-time equivalent duration.	The programme content is typically designed to prepare students to enter a particular occupation.	C	Duration categories: Short: 2 to less than 3 years; 3 to less than 5 years; Long: 5 to 6 Years; Very long: More than 6 years.	3	Categories: Intermediate; First; Second; Third and further.

6 Second Stage of Tertiary Education (leading to an Advanced Research Qualification)

The level requires the submission of a thesis or dissertation of publishable quality that is the product of original research and represents a significant contribution to knowledge. It is not solely based on course-work.	It prepares recipients for faculty posts in institutions offering ISCED 5A programmes, as well as research posts in government and industry.

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, 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.

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.

5.4.2 ISCED 1 – Primary level of education

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.

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.

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.

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.

5.4.3 ISCED 2 — Lower secondary level of education

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.

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 per cent 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.

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 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.

Examples

ISCED2A

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.

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).

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.

ISCED2B

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.

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.

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*').

ISCED2C

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).

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.

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.

5.4.4 ISCED 3 – Upper secondary level of education

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.

Sub-categories at this level

Type of subsequent education or destination. ISCED level 3 programmes are sub-classified according to the destination for which the programmes have been designed to prepare students:

- *ISCED 3A*: programmes at level 3 designed to provide direct access to ISCED 5A;
- *ISCED 3B*: programmes at level 3 designed to provide direct access to ISCED 5C;

- *ISCED 3C*: programmes at level 3 designed to prepare students for direct entry into the labour market, although they also provide access to ISCED 4 programmes or other ISCED 3 programmes. Upper secondary apprenticeship programmes would fall into this category unless the programme was primarily designed to prepare students to enter ISCED 5.

Direct access should not be interpreted as either a strict legal definition of the destination of programmes (which might be far from the reality) or by looking at the actual destination of students (which might be strongly influenced by the current labour market situation). Programmes should be mapped to A, B, and C according to the orientation of **the design of the curriculum**, that is, the type of level 5 programmes (A or B) or direct labour market entry that the curriculum prepares students for. For example, in France, the *baccalauréat technologique* is designed to prepare students to enter 5B programmes (primarily the *enseignement en institut universitaire de technologie* (IUT) and not 5A (university) programmes, even though all students holding the *baccalauréat technologique* are legally entitled to enter universities. Therefore, the *baccalauréat technologique* would be classified at level 3B.

Some programmes offered at this level provide access to multiple educational and labour market destinations. Programmes *primarily* designed to provide access (as defined above) to 5A (even if most students go to 5B or the labour market) should be classified as 3A. Similarly, programmes primarily designed to provide access to 5B should be classified as 3B; and programmes that are primarily designed for either direct labour force entry or to prepare students to enter another programme at level 3 or a programme at level 4 should be classified as 3C.

Can ISCED 3C programmes provide access to ISCED 5? It was not originally intended in the ISCED revision that ISCED 3C would include programmes that have been designed to provide access to ISCED 5. According to ISCED-97, ISCED 3C programmes are designed to prepare students for direct access to the labour market or access to either ISCED 4 or other programmes at ISCED 3. This distinction does not fully capture the degree of openness of the education system in many countries, however. In several Nordic countries, for example, there are ISCED level 3 programmes that have been primarily designed to prepare students for direct labour market entry, although they also serve as minimum entry requirements for ISCED 5B programmes. Programmes should be mapped to ISCED 3C if they are primarily designed to equip students with the skills needed for direct transition into the labour market. If, however, a programme is designed both to prepare students for further study at ISCED 5B and for students to directly enter the labour market, it should be classified at ISCED 3B.

Programme orientation. Programmes at level 3 can also be subdivided into three categories based on the degree to which they are specifically oriented towards a specific class of occupations or trades and lead to a labour-market relevant qualification:

- *Type 1* (general): Covers education that is not designed explicitly to prepare participants for a specific class of occupations or trades or for entry into further vocational or technical education programmes. Less than 25 per cent 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.

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 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.

Examples

ISCED 3 (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.

ISCED 3A

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.

Eniaio Lykeio (Greece). This has three grades. The first grade is an orientation year and includes general knowledge subjects. The second grade includes three directions: theoretical, science and technology. In the third grade, the directions are still in effect, but the technology direction has two courses: the technology and production course and the information science and services course.

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.

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.

ISCED 3A 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.

ISCED 3B

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.

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-year 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.

ISCED 3C Programmes with a cumulative duration similar to ISCED 3A and 3B Programmes

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.

Type 2 (pre-vocational or pre-technical)

Leaving Certificate Applied (Ireland). This 2-years programme is intended to meet the needs of those students who are not adequately catered for by other Leaving Certificate programmes or who chose not to opt for such programmes. It includes theoretical and practical vocational modules. It does not provide direct access to tertiary education. This new programme was set up in 1995.

Type 3 (vocational or technical)

Stream 3 100 (Australia). Stream 3 100 courses provide initial education and training for entry to vocations requiring a level and range of skills less than is normally required for a trade. Stream 3100 courses would generally require minimal educational qualifications for entry, would be of short duration, and would emphasise a single activity that can be performed upon completion of the course. Included, for example, would be courses for plant and machine operators, and cleaners. Operatives are personnel who, after training, are able to perform a limited range of skilled operations. Entrance requirements, while variable, might typically involve entrants having completers of lower secondary education.

Opleidingen in de leertijd georganiseerd door het VIZO (Flemish Community of Belgium). In this programme a youngster can enter into a contract of apprenticeship with an employer-instructor from the age of 15 or 16. He or she has an opportunity to learn a trade while taking part in the everyday activity of a workplace for four days a week. The apprentice spends the fifth day in a VIZO training centre where he or she takes an additional vocational, general and social course. The courses are heavily geared to the practical aspects of work.

Střední odborná škola, studium bez maturitou (Czech Republic). Secondary technical school without the *maturita* examination. This 3-years programme provides both general education and practical vocational apprenticeship training. Students do not have access to higher education unless they take the *maturita* examination, which can be accomplished after taking a 2-years ISCED 4A programme.

Erhvervsfaglige uddannelser (Denmark). Primarily vocational youth programme, includes training for carpenters, blacksmiths, electricians, etc. There are 86 different courses in trade and technical fields, and more than 2 specialities. Most courses last between 3 and 4 years.

Szakiskolai szakképzo évfolyamok és programok (Hungary). One to two years vocational programmes preparing for National Vocational Qualification List (NVQL) examinations. Entry requirement: the completion of Grade 10 and/or the Basic Secondary Examination (an ISCED 3C, general programmes). The typical starting ages are 16 and 17 and the cumulative years of schooling at ISCED 3 would be 3-4 years.

ISCED 3C Programmes with a cumulative duration (more than one year) shorter than ISCED 3A and 3B Programmes

Type 1 (general)

Entry to Employment or Further Education: Educational Preparation, Stream 2 200 (Australia). A one-half year course designed to provide remedial education or teach other preparatory activities to enable participation in subsequent education or social settings. The typical starting age is 15 or older.

Polytechnische Schule, pre-vocational year (Austria). One year programme in the last year of compulsory education; introduces into broad occupational fields. It is often followed by apprenticeship (ISCED 3B). The typical starting age is 14.

Általános iskola, szakiskola általánosan képzo 9-10. évfolyamai (Hungary). Basic education program of the vocational school. Grade 9-10 general subject courses preparing students for entrance to NVQL programmes with an entrance requirement of 10 years of general education. The typical starting age is between 14 and 15.

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.

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.

5.4.5 ISCED 4 – Post-secondary non-tertiary

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, level 4 programmes cannot, considering their content, be regarded as tertiary programmes. They are often not **significantly** more advanced than programmes at ISCED 3 but they serve to broaden the knowledge of participants who have already completed a programme at level 3. The students are typically older than those in ISCED 3 programmes.

Programme duration: ISCED 4 programmes typically have a full-time equivalent duration of between 6 months and 2 years.

Entry requirements. The typical entry requirement for ISCED 4 programmes is successful completion of ISCED 3. As described above, successful completion of any programme at level 3A or 3B counts as a level 3 completion. If a course requires the completion of and ISCED 3A or 3B course for entry, it would meet the minimum entry requirements for being classified at ISCED 4. ISCED 3C programmes that have a similar duration and level of educational content to ISCED 3A or 3B programmes also serve as the minimum entry requirements for ISCED 4. In cases where ISCED 3C programmes are of significantly (*e.g.* more than one year) shorter duration than ISCED 3A or 3B programmes, then the criterion of successful completion of ISCED 3 should be interpreted in the context of the cumulative duration of programmes spanning both level 3 and level 4. For example, suppose a 2-years programme under consideration for classification at ISCED 4 has a 2-years ISCED 3C programme as a minimum entry requirement and corresponding ISCED 3A and 3B courses also have 2 years cumulative duration at ISCED level 3. Then the minimum cumulative duration requirement is met (2 years at ISCED 3C + 2 years at ISCED 4 = 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 ISCED 4 = 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.

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 per cent 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 cent 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.

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:

a) Post-secondary, but not tertiary programmes from an international perspective

ISCED4B, Type 3 (vocational or technical)

Trade Technician / Trade Supervisory (Australia) Programmes classified nationally to Stream 3 300, provide initial education and training in skills at a level higher than trade or trade-equivalent skills (which would be learned in an ISCED level 3 programme). Stream 3 300 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 3 300 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 students 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.

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.

b) Upper secondary, second-cycle programmes

ISCED 4A, 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.

ISCED 4A, 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.

ISCED 4B, 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.

ISCED 4C, 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.

5.4.6 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.

ISCED 5A

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.

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.

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.

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 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 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 (0.5 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.

Examples

a) 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.

b) 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.

c) ISCED 5A, 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.

d) ISCED 5A, 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.

e) ISCED 5A, 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).

f) ISCED 5A, 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.

g) ISCED 5A, 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.

ISCED 5B

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.

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 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.

Examples

a) ISCED5B, Short, 1st qualification

3 400 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 ISCED 5A 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.

b) 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.

c) 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.

d) 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.

5.4.7 ISCED 6 — Second stage of tertiary education (leading to an advanced research qualification)

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.

Examples

a) ISCED 6, 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.

b) ISCED 6, 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).

5.5 Country ISCED mappings

From the initial implementation of ISCED-97, it has been crucial that the ISCED mappings of national educational programmes are documented accurately.

In 1999 OECD member countries invested great efforts to establish initial mappings of their national educational programmes to ISCED-97. The mappings were published in *Classifying Educational Programmes:*

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

Making the mapping of countries transparent to data providers and users of UOE data proved to be one of the most important steps in implementing ISCED-97. But educational systems and their programmes are not static. Therefore, it is crucial, that ISCED remains a flexible tool to classify programmes, and that changes in educational systems are mirrored in the ISCED mappings of countries, and, equally important, that those changes remain transparent to other countries. The ISCED mappings are therefore kept up to date every year via a questionnaire which is now part of the regular UOE data collection.

The ***ISCED-97 mappings*** of national educational programmes are not limited only to programmes reported in the UOE data collection. Data providers are requested to include also programmes that are considered part of their educational systems from a national perspective, but are not included in the international UOE data collection. The inclusion of these borderline cases is important in achieving transparency in the relationship between the ISCED mappings and the reporting of programmes in the UOE data collection.

The latest version of the country mappings at the time of publication is contained in Annex 6. Subsequent revisions can be found on the OECD website at *www.oecd.org/edu*.

Notes

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.

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.

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 book 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.

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.

Chapter

6

DATA QUALITY ISSUES

This chapter examines issues surrounding the quality of the OECD international education data. This begins with a declaration of the OECD commitment to data quality and the quality framework in which the education data are collected, compiled and disseminated. The types of data quality problems that arise and why they arise are then discussed, together with a description of what OECD does to assess and address these. Some suggestions then follow on making estimates for missing data and the chapter concludes with an account of the main data quality issues that remain to be tackled in the international education data.

6.1 OECD commitment to data quality

Data quality is fundamental to the credibility of the statistics produced by OECD generally and this is certainly true in the case of education. The OECD collection of education statistics adheres to the following core values stated in the OECD Quality Framework and Guidelines for OECD Statistical Activities (see *www.oecd.org/statsportal*):

- The education statistics are compiled and made available on an impartial basis. They are produced according to strictly professional considerations, including scientific principles and professional ethics with regard to methods and procedures used for the collection, processing, storage and dissemination of statistical data.
- The statistical information is presented according to scientific standards on the sources, methods, procedures adopted to produce its statistics.
- Individual data collected by for statistical compilation are considered to be strictly confidential and used exclusively for statistical purposes. Specific measures are taken to ensure the full protection of confidential data from any potential disclosure.
- Internal rules and measures under which the underlying statistical system operates are made public.
- The OECD is committed to carry out its statistical activities in co-ordination with national statistical agencies and with other international organisations.
- The OECD is committed to develop bilateral and multilateral co-operation in statistics in order to contribute to the development of systems of official statistics in all countries.
- Within the constraints of resource availability, OECD data products are of best possible overall quality in terms of each of the eight quality dimensions outlined in the Organisation's Quality Framework. Effort involved in assuring quality is commensurate with the scale of the statistical activity, the purpose of the activity and its frequency (*i.e.* whether it is intended to be repeated regularly or occasionally, or is one-off).

Quality is defined as "fitness for use" in terms of user needs. This definition impies more than simply a need for accuracy: even if data are accurate, they cannot be said to be of good quality if they are produced too late to be useful, or cannot be easily accessed, or appear to conflict with other data.

The OECD Quality Framework is therefore set around eight dimensions:

- **Relevance:** a qualitative assessment of the value contributed by these data.
- **Accuracy:** the degree to which the data correctly estimate or describe the quantities or characteristics that they are designed to measure.
- **Credibility:** the confidence that users place in those products based simply on their image of the data producer, *i.e.*, the brand image.

- ***Timeliness:*** reflects the length of time between their availability and the event or phenomenon they describe, but considered in the context of the time period that permits the information to be of value and still acted upon.
- ***Punctuality:*** implies the existence of a publication schedule and reflects the degree to which the data are released in accordance with it.
- ***Accessibility:*** reflects how readily the data can be located and accessed from within OECD data holdings.
- ***Interpretability:*** reflects the ease with which the user may understand and properly use and analyse the data.
- ***Coherence:*** reflects the degree to which they are logically connected and mutually consistent.

6.2 Types (or causes) of data quality issues

As with any data collected by OECD (or any other international organisation), the quality of education statistics and indicators disseminated depends on two aspects: the quality of the national statistics received, and the quality of the internal processes for collection, processing, analysis and dissemination of data and metadata. Whilst the latter is within OECD's control, the former is less so. The quality of national statistics received will essentially be a function of:

- Adequacy of national data sources to provide the required international data; and
- The extent to which international data definitions and guidelines are correctly applied.

Within the field of education, *national data sources* may be inadequate to provide the required data at the international level because:

- The coverage of the national sources – either individually or collectively – may not match the intended coverage of 'education' as defined in Chapter 3. This can result either in gaps in the reported data or over-reporting through the inclusion of educational programmes that are not in scope of the data collection. This can also happen where there is ambiguity surrounding the validity for inclusion of some programmes *e.g.* some continuing education programmes. As countries will typically use a number of national data sources to compile their international data returns, the inconsistent coverage between these can give rise to problems of internal consistency and perhaps double counting of data reported by an individual country. This may occur between student data at different ISCED levels or between, say, enrolment data and finance data.
- Similarly, it can be the case that the school/academic year to which the statistics refer (the reference year), the point in time that the data were collected (the reference period) and the date on which the count of students is taken, may all differ from the international requirements. And data may simply not yet be available for the intended reference periods of the data collections, either because the national data processing timetable does not fit well with the international data collection or perhaps the national data collections do not occur each year.
- National data item definitions (*e.g.* a teacher, a graduate, a programme) and their classifications (*e.g.* programme level, type of educational personnel) may be different to those used required internationally or may not exist at all nationally.

Difficulties with *adherence to the guidance* can arise from the problems with national data sources mentioned already, where the national data cannot readily be translated into the international definitions but it can also arise from weaknesses in the guidance itself. Such weaknesses may exist because of the lack of an internationally agreed definition for a data item or a lack of clarity in its description. Lack of adherence to the guidance can also occur where a national policy decision has been taken to report the national data in particular way which does not comply with the guidelines, though this is less common.

In addition to these challenges, there is often a difficulty of *comparability of the statistics over time*. Three possible reasons for significant changes in the data compared to the previous year.

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

6.3 Tackling data quality issues

The effort committed both by OECD and the member countries to assure and improve the quality of the data on education is considerable. On the one hand this involves a rigorous data collection and verification process and on the other, a commitment to continuously address areas of weakness in data quality.

Within the UOE data collection (the main annual collection of OECD Education data – see section 2.3 in Chapter 2) the main data quality activities are as follows:

- Detailed data definitions and data reporting advice and guidance is provided to countries, with major revisions being first discussed in Technical Group[1] meetings. This guidance advises the data providers of the checks that will be carried out and also advises them on the treatment of missing values
- The data collection instruments (electronic questionnaires) included aggregations of sub-classifications in areas where it is known to be difficult for countries to provide the required data *e.g.* aggregations of some ISCED levels. Also, student enrolment data are collected on different bases to match the coverage of the finance and personnel data (see Section 4.2.9)
- Clear guidance is given on the reporting of missing data in which five mutually exclusive codes are used:

- Category not applicable (a)
- Data included in other categories (x,xr…,xc…,xa… indicating the row/column in which the data are included)
- Data not available (m)
- Data value nil (n)
- Data value negligible (n…)

- Along with the data themselves, data providers are asked to provide meta data, an important element of which is the mapping of countries' national educational programmes to the ISCED levels and the description of these programmes (see Section 5.5). Other meta data items collected include:

- Reference periods (start and end of school years) for each level of education
- Data collection periods (*e.g.* snapshot or whole year counts within the reference periods)
- Reference data for student ages
- theoretical starting, ending and graduation rates
- data sources and methods used

- documentation of breaks in the time series

- The electronic questionnaire spreadsheets which are sent to countries to fill in contain automated verification checks and the data providers can run a check routine which identifies data cells which have missing values and verifies the internal consistency of the data both within and between data tables. Countries are asked to explain any verification errors that are present in their submitted data.
- The submitted questionnaires are then subject to rigorous scrutiny within OECD, particularly checking year-on-year consistency of the data and raising queries with countries as necessary. Re-submission of data can often result from this.
- Data are fed back to countries showing how they have been used in the calculation of the indicators that will subsequently appear in *Education at a Glance*. Countries' knowledge of the use to which the data will be put is an important element in achieving good data quality.

Outside the data collection process itself, there is a continual effort to assess and seek improvement in data quality which is mainly conducted through the agendas of the Technical Group meetings. A key technique used is to conduct special studies in areas where there are known comparability problems to understand the bases for countries' current data reporting and from this to refine the data reporting guidance that is provided to countries. In recent years, such studies have been carried out in the areas of educational finance and graduation.

In addition, recognising the need to have better comparable data over time, special data collections in the area of student enrolment and finance have been launched to re-collect data for past years on a consistent basis to that used in the current collections.

6.4 Suggestions for the estimation of missing data

As noted earlier, national data sources are rarely adequate to provide all of the data requested at the international level and missing codes frequently have to be used. This section provides some suggestions on techniques that can be used to derive estimates for some of these missing values. In each case they are, merely suggestions; the data providers are best placed to judge how reasonable the estimation techniques are in their own countries' data.

There are broadly five situations in which missing values might arise:

- ***Data not collected for a variable:*** Here it may be possible to create an estimate based on assumed relationships to other variables. An example would be if students' age distribution was not available but the grade distribution was, it may be a reasonable assumption that all students at the same grade are the same age. Alternatively, there may be information about the relationship between age and grade from another source (*e.g.* research study or ad-hoc survey) which can inform the estimation.
- ***Data not available for the desired level of aggregation:*** A common example here would be where data are only available for partial national coverage *e.g.* some regions but not all. Here a feasible approach may be to scale up the sub-national figures to national level using a scaling factor derived from a different, but related dataset. For example partial student enrolment numbers could be scaled up on the basis of student data from labour force surveys or from the results of an ad-hoc survey.
- ***Data may be available only for certain sub-populations***: Similar to the previous situation where the same potential solution could be applied. For example, certain data may be available for public schools and government-dependent private schools but not for independent private schools and they could be scaled up as described above.

- ***Data not available for the desired level of dis-aggregation***: For example, expenditures data may not be available for each level of education separately but can be apportioned to the corresponding levels based on student enrolments in the respective levels. Alternative bases for the apportionment could be the relative student to teacher ratios between the levels or staff numbers. Similarly, teacher numbers or teacher hours could be used to distribute teacher salaries between ISCED levels. A related situation is where most national data can be allocated to the international classification but there are a number of cases that can't and would otherwise be recorded as 'not knowns'. Here, the 'not-knowns' could be allocated to the target classification on a pro-rated basis.
- ***Data may not be available for the year of the data collection***: Here it may be possible to estimate the data on the basis of data from previous years. For some finance data, applying price inflation rates to previous year's data may be appropriate as long as that is seen as a reasonable estimate of the expenditure that will actually have occurred. Budget rather than actual expenditure figures may also provide a reasonable basis for estimating current year expenditure. For student enrolment data, current year estimates could be derived by applying estimates of transition rates between levels or grades, preferably based on historical trends of these.

In all cases, when choosing a technique to estimate missing data, thought needs to be given to the use to which the data will be put, particularly in indicator calculations. For example, using student numbers as a basis for estimating missing expenditure data would be inappropriate if the estimated expenditure data were then to be used calculate expenditure per student.

Specific data items which most commonly require estimation are:

- ***Retirement expenditure***: Particularly in unfunded or partially funded schemes (see "Difficult cases" in Section 4.6.2.1)
- ***Household expenditures on education***: These are most commonly derived from national household expenditure surveys (see Section 4.6.3 "Private sources of expenditures")
- ***Private employer expenditure on training of apprentices and other combined school and work-based training programmes***: See section 4.6.3 "Private sources of expenditures"

In each of these cases, whilst examples are given here in the Handbook and in the data collection manual for making estimates, the international comparability of these data would benefit from further development of these in order to spread good practice for all data providers to follow.

6.5 Remaining areas for data quality improvement

Whilst much progress has been made in improving the comparability of international education statistics and indicators, much has still to be done. The major areas where question marks remain over comparability are:

- ***Coverage of educational programmes***: The terminology that is used to define "education" in Chapter 3, although well established, is rather vague and could benefit from greater clarity. Also, all of the coverage issues listed in Chapter 3 are to a greater or lesser extent still sources of incomparability between countries' data. The greatest difficulty, however, probably centres on which *continuing education programmes* to include/exclude, often those which countries regard as adult education programmes. The ISCED mappings are helping a great deal to identify the respective national programmes (and their characteristics) which do and do not get reported to OECD and this provides a crucial foundation for achieving greater consistency in the reporting of data across countries.

- ***Classification of programmes by level***: Section 5.3.2 states that the complexity of the content of educational programmes should be the basis for their allocation to respective ISCED levels but notes that the lack of international standards for this means that the characteristics of the programme should be used as proxies for this. These proxies very much provide only a pragmatic solution and efforts need to continue to arrive at a more comparable allocation of programmes to levels between countries.
- ***Full time/part time status of the student*** and the conversion to full-time equivalents: The reporting of these data to common international data definitions is one of the areas that is most constrained by what is collected nationally. As noted in Section 4.2.9, the method used to measure full-time and part-time tends to vary by level of education within a country (student attendance up to secondary level and teaching hours/credit accumulation at tertiary level) but this will not be consistent across countries. Moreover, some countries distinguish between full and part-time on the basis of the characteristics of the programme rather than of the student study. In addition, the factors used for converting these student numbers to full-time equivalents will not necessarily be derived on the same basis (some being based on classroom attendance, some on study time commitment and some on credit accumulation) and it is likely therefore that some distortion in the international comparisons will result from this. The indicators affected will be those on ratios of students to staff and expenditures per student.
- ***Successful completion/graduation***: The definitions given in the Handbook (Section 4.2.3) seek to provide more clarity to the international definitions in the area of graduation but because graduation requirements vary from country to country it is difficult to state a categoric definition. The inherent difficulty lies in being unable at present to measure the quality or value of a graduation across (and within) countries. This would require an international standard or benchmark which is not available at present. Thus, indicators of graduation and completion must be viewed with this weakness in mind.
- ***Definition of educational institutions***: Whilst the classification of educational institutions (Section 4.5) has become clearer (*e.g.* between public and private), the definition of an institution as a separately identifiable statistical unit has yet to be properly addressed. In particular, whether an institution with several campuses counts as one institution or several institutions.
- ***Ancillary services expenditure***: Whilst it is clear that expenditure on ancillary services within educational institutions should be included in the reported data (See section 4.6.1), the extent to which they are varies by country. Also, for those countries that do report them, it remains difficult for many to report such expenditure separately from educational core services expenditure, particularly at the tertiary level. This presents potential distortions in the expenditure indicators and prevents these indicators- particularly expenditure per student- from being calculated on a more logical basis using core services expenditures only.
- ***Financial aid to students:*** Generally the need here is to seek fairer and more complete measures of the financial aid that is provided to students. There are two issues in particular which are yet to be adequately addressed: first, the reporting of student loans and second the tax benefits and allowances paid to students and their families which are contingent on the beneficiary being a student (see Section 4.6.2 for both). Student loans are currently measured on a gross basis, without netting off repayments. Whilst this is acceptable as a measure of the financing of students in the current year it does not adequately measure the generosity of the aid package available to students and nor does it fairly reflect the share of cost between the public and private sectors. Tax benefits to students and their families are excluded from the expenditures on education as there is no internationally agreed methodology for measuring and reporting them, and yet these are legitimate means of providing support to students and their families.

Excluding such expenditure therefore undermines comparisons of financial aid to students and of public subsidies to households generally.

- ***Student mobility***: This is as much a matter of capturing better data as improving the comparability of the foreign student data (Sections 3.4.6 and 4.2.8). The data currently collected are inadequate to properly measure student mobility and to build indicators that measure the internationalisation of tertiary education. Better data, for instance, on distance learning, student exchanges may be necessary as well as modifications of the data definitions currently in place.

Note

1. See Chapter 2, section 2.1

Chapter

7

INDICATOR CONCEPTS AND METHODOLOGIES

7.1 Introduction

This Chapter turns to the statistics and indicators that are derived from the raw data. It aims to explain the concepts, methodologies and conventions used in the calculation of these statistics and indicators and the measurement issues that arise. The chapter does not seek to describe in detail every indicator that appears or ever has appeared in *Education at a Glance* (EAG). Instead it focuses on the key indicators or groups of indicators which appear in EAG which have conceptual or methodological aspects which are worthy of explanation; it is a catalogue of indicator methodologies rather than a catalogue of indicators. Thus, indicators which are straightforward summaries of the data items as collected (*e.g.* the proportion of graduates who are female) are not covered here. In the indicators that are covered, the level of detail provided is intended to be sufficient for the reader to understand the indicators that appear in EAG rather than to allow them to necessarily reproduce them from the raw data collected.

The indicators presented are grouped into indicators of:

- Learning outcomes, graduation and completion
- Access, participation and progression
- The learning environment and school organisation
- Finance

For each indicator or group of indicator, the policy context is first discussed explaining the importance of the indicator and what it seeks to measure. The method of calculation is then given, often both descriptively and formulaically. Where necessary some notes on interpretation are also provided.

7.2 General

7.2.1 Calculation of international means

For many indicators a country mean is presented and for some an OECD total.

The *country mean* is calculated as the unweighted mean of the data values of all OECD countries for which data are available or can be estimated. The country mean therefore refers to an average of data values at the level of the national systems and can be used to answer the question of how an indicator value for a given country compares with the value for a typical or average country. It does not take into account the absolute size of the education system in each country.

The *OECD total* is calculated as a weighted mean of the data values of all OECD countries for which data are available or can be estimated. It reflects the value for a given indicator when the OECD area is considered as a whole. This approach is taken for the purpose of comparing, for example, expenditure charts for individual countries with those of the entire OECD area for which valid data are available, with this area considered as a single entity.

Note that both the country mean and the OECD total can be significantly affected by missing data. Given the relatively small number of countries, no statistical methods are used to compensate for this. In cases where a category is not applicable (code "a") in a country or where the data value is negligible (code "n") for the corresponding calculation, the value zero is imputed for the purpose of calculating country means. In cases where both the numerator and the denominator of a ratio are not applicable (code "a") for a certain country, this country is not included in the country mean.

7.2.2 Population data

Other than those indicators that are derived from labour force surveys, the population data that are used in the calculation of the gradation, entry and enrolment rates refer to all nationals present in or temporarily absent from the country and aliens permanently settled in the country. They refer to a population count at 1 January of each year with ages referenced at that same date.

7.3 Indicators of learning outcomes, graduation and completion

Many of the *Education at a Glance* indicators that measure the learning outcomes of individuals (skills/knowledge acquisition) are derived from data collected through the PISA survey. For details of how these are calculated, readers should refer to the comprehensive documentation on the PISA website: www.pisa.oecd.org. The indicators covered here are those derived from the other data sources, in particular the UOE data collection and the Labour Force Survey as follows:

- Graduation rates
- Educational attainment of the population/labour force
- Labour force participation rates and unemployment rates
- Tertiary survival rates
- Relative earnings
- Rates of return to investment in education

7.3.1 Graduation rates

Policy context

Graduation rates are a measure of the production of educational institutions and of the system in general and record the flow of graduates which can potentially enter the labour market or further study. In *Education at a Glance* graduation rates are typically shown for upper secondary, post-secondary non-tertiary and tertiary levels of education.

Rising skill demands in countries have made upper secondary qualifications the minimum credential required for successful labour market entry. Upper secondary education serves as the foundation for higher (post-secondary) learning and training opportunities, as well as preparation for direct entry into the labour market. Although many countries do allow students to leave the education system at the end of the lower secondary level, young people in OECD countries who leave without an upper secondary qualification tend to face severe difficulties in entering the labour market.

Tertiary graduation rates are an indicator of the current production rate of higher-level knowledge for each country's education system. Countries with high graduation rates at the tertiary level are most likely to be developing or maintaining a highly skilled labour force.

Measurement issues

Graduation rates can be either **gross** rates or **net** rates:

- ***Gross graduation rates*** measure the total number of graduates (the graduates themselves may be of any age) at the specified level of education divided by the population at the typical graduation age for the specified level. In many countries, defining a typical age of graduation is difficult, however, because graduates are dispersed over a wide range of ages, (see Annex 2 for typical ages used for countries).

- ***Net graduation rates*** measure the percentage of persons within a virtual age cohort who obtain a qualification at the specified level, thus being unaffected by changes in population size or typical graduation age. The net graduation rate is calculated by dividing the number of graduates at each single year of age, by the population at that age, and summing these over all the ages.

For *Education at a Glance*, the graduation rates at *upper secondary level* (ISCED 3) and at *post-secondary non-tertiary levels* (ISCED 4) of education are calculated as **gross** graduation rates. At the *tertiary level*, the graduation rates for *Tertiary type-A* and *Type B* programmes (ISCED 5) are **gross** rates whilst the rates for *advanced tertiary programmes* (ISCED6) are **net** rates.

Calculation:

Graduation rates at ISCED 3, ISCED 4 and ISCED 5

These are all calculated as ***Gross graduation rates.*** For level '*l*' , the calculation is:

$$\frac{GRAD_{,l}}{POP_{,a}} * 100$$

where:

$GRAD,l$ = total graduates in the reference year at level *'l'*

POP,a = Population of age group which represents the typical age of graduation at level *'l'*

This is calculated separately for levels *l* = ISCED 3A, 3B, 3C (long), 3C (short), general and Prevocational/ Vocational programmes, ISCED 3 Total, ISCED 4A, 4B, 4C, ISCED 4 Total, ISCED 5A, 5B.

In the case of ISCED 3 Total, ISCED 4 Total and ISCED 5A and 5B the *unduplicated* count of graduates at ISCED level 3 is used (see below)

Graduation rates at ISCED 6

Graduation rates for ISCED 6 (advanced tertiary programmes) are calculated as **net graduation rates** as follows:

$$\sum \frac{GRADa}{POPa} * 100$$

where

$GRADa$ = graduates at ISCED level 6 at a specific age 'a'

$POPa$ = the population at specific age 'a'

And this is summed over all specific ages 'a' for which there are ISCED 6 graduates.

Note: Graduate data by single year of age is only available for the ages of 17 to 29 years. For the ages of 30 to 39, graduation rates are estimated on the basis of 5 years age bands, and for age 40 and over graduation rates are based on the cohort size for 39 year-olds.

Unduplicated counts of graduates:

The unduplicated count of graduates counts first time graduates at that level and so avoids double counting of graduates over time within the same level and thus avoids artificial inflation of the graduates rates.

7.3.2 Educational attainment of the population and labour force

Policy context

Education plays a key role in providing individuals with the knowledge, skills and competencies to participate effectively in the labour market and society at large. Education also contributes to an expansion of scientific and cultural knowledge. As a result, a well-educated and well-trained population is important for the social and economic well-being of countries and individuals, and human capital is a factor which plays an important role in shaping economic outcomes and the quality of life. The adequacy of workers' skills and the capacity of the labour market to supply jobs that match those skills are important issues for policy-makers. Calculations for upper secondary and tertiary educational attainment are calculated in the same way.

Calculation:

This indicator seeks to provide a profile of the level of ***educational attainment of the population*** or subsets of it such as the labour force or specific age groups. Educational attainment is measured by the highest level of education attained by an individual, as recorded in the annual Labour Force Survey.

So for example the calculation for the proportion of the population aged 25-64 who have attained education level *'l'* is:

$$\frac{POP\ 25-64,\ educational\ level\ l}{POP\ 25-64,\ total} * 100$$

where:

POP25-64, education level 'l' = the number of people in the population whose highest recorded educational attainment is at level *'l'*

POP25-64, total = total population aged 25-64

Education at a Glance typically shows upper secondary and tertiary attainments rates and are often calculated separately for men and women.

7.3.3 Labour force participation rates and by level of educational attainment

Policy context

In recent decades, economies and labour markets have in many countries become increasingly dependent on a stable supply of well-educated workers to further their economic development and to maintain their competitiveness. This trend means that there is an increasing risk of exclusion for those individuals who have not attained at least an upper secondary qualification. This indicator provides a perspective on this effect by examining labour force participation rates of groups with different levels of education.

Calculation:

The labour force is calculated by the addition of both the employed and unemployed *i.e.*

Labour force = Employed + Unemployed (see next indicator for definition)

The labour force participation rate for a particular age group is the percentage of individuals in the population of the same age group who are either employed or unemployed using International Labour Organisation (ILO) definitions. So, the labour force participation for a group with a certain level of educational attainment, the calculation is:

$$100 \times \frac{LABOURFORCEedlev}{POPedlev}$$

where:

LABOURFORCEedlev = the number of people in the labour force who have attained education level 'edlevel'

and *POPedlev* = the total number of people in the population who have attained education level 'edlevel'

7.3.4 Unemployment rates by level of educational attainment

Policy context

The unemployment rate is a measure of a particular economy's ability to supply a job to everyone who wants one.

To the extent that educational attainment is assumed to be an indicator of skill, it can signal to employers the potential knowledge, capacities and workplace performance of candidates for employment. Since jobs on offer in the labour market require increasing levels of skill, persons with low attainment are often severely penalised in the labour market. Differences in unemployment rates by level of educational attainment can thus constitute an indicator of the degree to which further education improves individuals' economic opportunities.

At the same time, the employment prospects of individuals of varying educational attainment depend not only on the requirements of the labour market, but also of the matching between the labour market demand and supply by the education system of workers with different levels of skills. Given the cost incurred by educating young people at higher levels of education, the social costs incurred when those with higher levels of education do not work can be very high. In that respect, high unemployment rates of individuals with high levels of educational attainment can signal a mismatch between the labour market skill demands and oversupply of skilled individuals by the education system.

Calculation:

The unemployed are defined according to ILO guidelines and refers to individuals who are without work, actively seeking employment and currently available to start work.

The unemployment rate for a particular age group, gender, and level of educational attainment is equal to the percentage of individuals in the labour force of the same age group, gender and level of education attained who are unemployed. So, the unemployment rate for a group with a certain level of educational attainment, the calculation is

$$\frac{UNEMPPOPedlev}{LABOURFORCEedlev} * 100$$

where *UNEMPPOPedlev* = the number of people in the labour force who are unemployed and who have attained the level of education 'edlev'

LABOURFORCEedlev = the total number of people in the labour force who have attained the level of education 'edlev'

7.3.5 Tertiary survival rates

Policy context

Tertiary level dropout and survival rates can be useful indicators of the internal efficiency of tertiary education systems but the specific reasons for leaving a tertiary programme are varied: students may realise that they have chosen the wrong subject or educational programme; they may fail to meet the standards set by their educational institution, particularly in tertiary systems that provide broader access; or they may find

attractive employment before completing their programme. "Dropping out" is not necessarily an indication of failure by individual students, but high dropout rates may well indicate that the education system is not meeting the needs of its clients. Students may not find that the educational programmes offered meet their expectations or their labour market needs. It may also be that students find that programmes take longer than the number of years which they can justify being outside the labour market.

Calculation:

The tertiary survival rate is defined as the proportion of new entrants to the specified level of education who successfully complete a first qualification. It is calculated as the ratio of the number of students whoa are awarded an initial degree to the number of new entrants to the level 'n' years before, where 'n' is the number of years full-time study required to complete the degree. Algebraically the calculation is:

$$\frac{GRAD,_{y}}{ENTRANTS,_{y-n}} * 100$$

where:

GRAD, y is the number of graduates at ISCED level 6 in year 'y'

And *ENTRANTS,y-n* is the number of entrants at ISCED level 6 in year y-n where n is the typical number of years of full-time study required to complete the qualification

7.3.6 Relative earnings

Policy context

One of the ways in which the market provides incentives for individuals to develop and maintain appropriate levels of skills is through wage differentials, in particular through the enhanced earnings of accorded to those persons completing additional education. The pursuit of higher levels of education can also be viewed as an investment in human capital. Human capital includes the stock of skills that individuals maintain or develop, usually through education or training, and then offer in return for earnings in the labour market. The higher the earnings that result from increases in human capital, the higher the returns on that investment and the premium paid for enhanced skills and/or enhanced productivity.

Calculation:

Relative earnings from employment are defined as the mean earnings (income from work before taxes) of persons at a given level of educational attainment divided by the mean earnings of persons *with upper secondary education*. This ratio is then multiplied by 100. The estimates are restricted to individuals with income from employment during the reference period. Upper secondary attainment is taken as the reference point as this is a key decision point in student's educational career in most countries.

So the relative earnings for a group with a certain level of educational attainment, the calculation is:

$$\frac{EARN,_{edlev}}{EARN,_{upper\ sec}} * 100$$

where:

EARN,edlev= the mean earnings of those whose highest level of educational attainment is 'edlev'

EARN, upper sec = the mean earnings of those who whose highest level of attainment is upper secondary

7.3.7 Rates of return to investment in education

Policy context

The rate of return represents a measure of the returns obtained, over time, relative to the cost of the initial investment in education. Rates of return can be measured from the private individual's point of view or from society's point of view. Private rates of return measure the future net economic payoff to an individual of increasing the amount of education undertaken whilst social rates of return measure the benefits to society of additional education. The calculation formulae for both types of returns are the same, only the costs and benefits that are included differ between the two.

Technical definition of Internal Rates of Return (IRR)

The internal rate of return calculation is based on the actuarial method of calculating *present value*, a means for returning to a common date various streams of costs and benefits – *that occur at different moments of time* – in order to compare these streams. The calculation of present value is a traditional criterion of an investment choice in face of a certain future. It is widely used in financial management of companies, and /or by insurance companies when one wants to assess the schedule of receipts and expenditures.

Calculation:

Net Present Value (NPV) is calculated as follows:

$$NPV = \sum_{t=0}^{d-1} C_t / (1+i)^t + \sum_{t-d}^{64-a-d} B_t / (1+i)^t$$

where:

C_t: Costs at period t ($t \in 0$, d-1)

B_t: Benefits at period t ($t \in$ d, 64-a-d)

i: discount rate

d: duration studies (in year)

a : age at beginning of education/training

64: age at last year of activity in the labour market.

IRR is the discount rate at which NPV=0. In project evaluation, a project is approved if the IRR is greater than the prevailing interest rate or the return from an alternative investment.

Composition of costs and benefits

Framework: a hypothetical 40 year-old individual who decides to take training in order to reach a higher level of education.

The elements of costs are the following ones:

1. Foregone earnings during the training period
2. Training costs

Three educational expenditures are taking into account in the analysis:

– direct public expenditures on education (for infrastructure, teachers wages…)

– indirect public expenditures (subsidies)

– direct private expenditures (tuition, fees …).

3. Additional taxes are also considered as costs for the individual.

These can be grouped as follows:

Private costs: Foregone earnings + direct private expenditures + future taxes

State costs : Loss of taxes received during the training + public expenditures

Social costs : Private costs + State costs (future taxes paid by individual are taking account into benefits flows)

In ***private rates of returns*** the ***private costs*** are included and ***social rates of return*** the ***social costs*** are included in the calculation.

The elements of the benefits are the following:

1. Increase in earnings arising from getting a higher level of education
2. Higher probability of being employed.
3. Additional taxes received are also considered as a benefit for the State.

These can be grouped as follows:

Private benefits : Increases in earnings+ higher probability of being employed

State benefits: Future taxes

Social benefits: Private benefits + State benefits

In ***private rates of return*** the ***private benefits*** are included and in ***social rates of return*** the ***social benefits*** are included in the calculation.

Data and model assumptions

This model calculates IRR from the point of view the individual and the state (returns from the point of view of society are the summation of the net benefits to individual and the state).

Data:

1. Earnings correspond to annual money earnings as direct payment for labour services provided in local currency amounts (before deduction of income taxes or employee social security contributions). They do not include employer social security contributions, government social transfers, investment income, net increase in value of an owner operated business and any other income not directly related to work. The data are provided by Statistics Sweden.
2. The taxes are considered as an average rate in % for workers. The data are from OECD.
3. Estimation of income streams with cross sectional data. The streams of income are adjusted for the annual growth rate of productivity connected to the technical progress.

The assumptions of the model

1. Typical starting and ending age by level of education
2. The real interest rate taken from OECD database. When this rate increases, the NPV decreases. The IRR is compared with this rate of actualisation.
3. Growth rate of productivity is fixed to 1 % per year. Hypothesis is done that the growth rate is the same for all level of education.

4. The "starting salary" (after the training period) is an average between salary of a beginner without experience and a 40-year-old person experience (simulation for an individual of 40 years old).

5. The overall incentives to invest in human capital that are embedded in labour market benefits and financing arrangements can be summarised in estimates of rates of return. These rates of return can be measured from the private individual's point of view or from society's point of view. Private rates of return measure the future net economic payoff to an individual of increasing the amount of education undertaken whilst social rates of return measure the benefits to society of additional education. The rate of return represents a measure of the returns obtained, over time, relative to the cost of the initial investment in education.

7.4. Measures of access, participation and progression

This section described the indicator methodologies underpinning the indicators on access, participation and progression throughout the education cycle.

- Enrolment rates
- School expectancy including expected years in tertiary education
- Gross and net entry rates
- Internationalisation of tertiary education (Foreign student indicators)

In interpreting these indicators, it must be remembered that student numbers are reported on a domestic basis and therefore report activity within a countries' own territory. Therefore in countries where there are limited tertiary study opportunities, such as Luxembourg, entry/participation rates will appear low.

7.4.1 Enrolment rates

Policy context

A well-educated population is critical for the current and future economic and social development of a country. Societies, therefore, have an intrinsic interest in ensuring broad access to a wide variety of educational opportunities for both children and adults. Information on enrolment rates at various levels of education provides a picture of the structure of different education systems, as well as of access to educational opportunities in those systems.

The enrolment rates in *Education at a Glance* are calculated as ***net enrolment rates*** and are calculated by dividing the number of students of a particular age or age group enrolled in all levels of education by the number of people in the population in that age or age group.

Calculation:

Net enrolment rate =

$$\frac{ENRL_a}{POP_a} * 100$$

Where:

ENRL,a is the number of people aged 'a' who are enrolled in all levels of education.

And POPa is the corresponding population of aged 'a'.

This indicator is typically calculated for the following age groups: 4 years and under, 5-14 years, 15-19 years, 20-29 years, 30-39 years and 40 and over.

For the 4 years and under age group, the population of three and four year olds is used and for the forty plus group, the population aged 40 and over is taken

As alternatives to net enrolment rates, **gross enrolment rates**, which are not shown in *Education at a Glance*, divide total enrolment (or at a particular by level) by the typical or theoretical age of enrolment (at that level).

Notes on coverage

Differences in the reference dates between, for example, enrolment data and population data can lead to errors in calculation (*e.g.*, net enrolment rates exceeding 100 per cent) where there is a significant decrease or increase over time in any of the variables involved. If the reference date for students' ages used in the enrolment data differs from the reference date for the population data (usually 1 January of the reference year), this can be a further source of error in enrolment rates.

7.4.2 School expectancy and expected years in tertiary education

Policy context

School expectancy is the average duration of formal education in which a five year old child can expect to enrol during his/her lifetime. School expectancy for a particular education level indicates the average duration of enrolment to be expected at that level. It is calculated by adding the net enrolment rates for each single year of age from the age of five onwards.

Calculation:

Total school expectancy =

$$\sum_{a>4} \frac{ENRL_a}{POP_a} * 100$$

where:

ENRLa is the number of students aged 'a' enrolled in all levels of education in the reference year,

and *POPa* is the population aged 'a' in the reference year

and this is summed over all ages enrolled at level 'l' in the reference year.

This indicator is calculated for all levels of education combined, primary and lower secondary, upper secondary, post-secondary non-tertiary and tertiary.

For the school expectancy at a particular level, the calculation is:

$$\sum_{a>4} \frac{ENRL_{a,l}}{POP_a} * 100$$

where:

ENRLa,l is the number of students aged 'a' enrolled in education level 'l' in the reference year,

and *POPa* is the population aged 'a' in the reference year

and this is summed over all ages enrolled at level 'l' in the reference year.

Note on definitions and interpretation

Enrolment data by single year of age is only available for the ages of 5 to 29 years. For the ages of 30 to 39, enrolment rates are estimated on the basis of 5 year age bands, and for age 40 and over enrolment rates are based on the cohort size for 39 year-olds.

When comparing data on school expectancy, however, it must be borne in mind that neither the length of the school year nor the quality of education is necessarily the same in each country. In addition unless

otherwise shown school expectancy figures make no distinction between full and part-time study and these are given equal weight in the calculation.

7.4.3 Gross and net entry rates

Policy context

Participation can also be measured using entry rates rather than enrolment rates. Entry rates measure the inflow to education in a particular period rather than the stock of students who are there during a particular period. They have the advantage over enrolment rates in that the comparability between countries is not distorted by different course lengths.

High entry rates help to ensure the development and maintenance of a highly educated population and labour force. Completion of tertiary education is associated with better access to employment and higher earnings. Rates of entry to both types of tertiary education are an indication, in part, of the degree to which the population is acquiring high-level skills and knowledge valued by the labour market in knowledge societies. As students' awareness of the economic and social benefits of tertiary education has increased, so have rates of entry into both tertiary-type A and tertiary-type B education. Tertiary institutions will be challenged to meet growing demand through an expansion of places offered.

Calculation:

Entry rates in *Education at a Glance* are calculated as **net entry rates** unless lack of data prevents this in which case they are calculated as **gross entry rates**. Entry rates are currently calculated at the tertiary level only, where policy relevance is greatest.

The net entry rate of a specific age is obtained by dividing the number of first-time (new) entrants of that age to each type of tertiary education by the total population in the corresponding age group (multiplied by 100). The overall net entry rate for each tertiary level is calculated by summing the rates for each single year of age at that level.

These entry rates represent the proportion of people in a synthetic age-cohort who enter tertiary education at some point in their lives, irrespective of changes in population sizes and of differences between OECD countries in the typical entry age. Since data by single year are only available for ages 15 to 29, the net entry rates for older students are estimated from data for 5-year age bands.

Net entry rates to tertiary education $= \sum \frac{NENT,_a}{POP,_a} * 100$

where

$NENT,_a$ = the number of new entrants aged 'a' to ISCED level 5 (5A and 5B separately)

$POPa$ = number of people in the population aged 'a'

And this is summed over all ages 'a' of new entrants

Note: new entrant data by single year of age is only available for the ages of 17 to 29 years. For the ages of 30 to 39, enrolment rates are estimated on the basis of five-year age bands, and for age 40 and over enrolment rates are based on the cohort size for 35 to 39 year-olds. In Education at a Glance, the net entry rate has typically been accompanied by an analysis showing the 20th, 50th and 80th percentiles of the age distribution of first-time entrants, i.e., the age below which 20 per cent, 50 per cent and 80 per cent of first-time entrants are to be found.

Calculation of gross entry rates: In the case where no data on new entrants by age are available, gross entry rates are calculated. Gross entry rates are the ratio of all entrants, regardless of their age, to the size of the population at the *typical age of entry*. Gross entry rates are more easily influenced by differences in the size of population by single year of age.

Gross entry rates =

$$\frac{NENT,_{all.ages}}{POP,_{typage}} * 100$$

where

NENT, all ages = the total number of new entrants to ISCED5 (5A and 5B separately) irrespective of age

POP,typage= the number of people in the population in the single age 'a' which represents the typical age of entry to that level

7.4.4 Internationalisation of tertiary education (Foreign student indicators)

Policy context

The international dimension of higher education is receiving growing attention from multiple perspectives. Some of these perspectives are as follows:

- The international mobility of *students* involves economic costs and benefits, that depend to a large extent on sending countries' policies regarding financial aid to students going overseas for study, and host countries' policies on tuition fees and financial support for overseas' students. While the direct short-term monetary costs and benefits of this mobility are relatively easy to measure, the long-term social and economic outcomes are far more difficult to quantify.
- From the perspective of *institutions,* foreign enrolments may constrain the instructional settings and processes insofar as the curriculum and teaching methods sometimes have to be adapted to a culturally and linguistically diverse student body. These constraints are greatly outweighed, however, by numerous benefits to host institutions. Indeed, foreign enrolments can help to reach the critical mass needed to diversify the range of educational programmes offered, and may compensate for variations in domestic enrolment rates. They can also increase tertiary institutions' financial resources.
- The trend towards greater internationalisation of education is likely to have a growing impact on countries' *balances of payments*, and some OECD countries already show signs of specialisation in education exports.
- The internationalization of education can also be seen as an opportunity for smaller and / or less developed educational systems to improve the *cost efficiency of their education provision*. Indeed, training opportunities abroad may constitute a cost-efficient alternative to national provision, and allow countries to focus limited resources on educational programmes where economies of scale can be generated.

These are some of the reasons why this indicator is of growing importance, and how numbers and trends in students studying in other countries can provide some idea of the extent of student mobility and the internationalization of education.

How these indicators are calculated:

Variables used in the calculation of foreign students indicators:

ENRLFOR = number of foreign students enrolled

Dest = destination country (or host country)

Orig = country of origin

ENRL = total tertiary enrolment

l = level (for indicators on foreign students ISCED 5 and above)

g = gender (can be broken down between men and women)

1. Foreign enrolment as a proportion of total enrolment in the host country:

This indicator shows foreign enrolment as a proportion of the total enrolment in the destination (host) country at tertiary level (ISCED 5 and above). Total enrolment, used as a denominator, comprises all persons studying in the country (including all foreign students) but excludes all students from that country who study abroad.

$$\frac{ENRLFOR_{,\,l,\,g,\,DestA}}{ENRL_{,\,l,\,g,\,DestA}} * 100$$

2. Index of Intensity:

The index of intensity of foreign students' intake compares the numbers of foreign students as a proportion of domestic enrolments with the average order of magnitude for OECD countries. This makes it possible to refine the scale of foreign students' intakes based on the size of the tertiary education system. An index higher (lower) than one reflects a higher (lower) intake as a proportion of enrolments compared with the OECD mean. Alternatively, this index can also be interpreted in terms of a comparison of the weight of a country in OECD foreign students' intakes with its weight in OECD enrolments. If so, an index higher (lower) than one reflects a higher (lower) foreign students' intake than the country's weight in OECD enrolments would suggest.

To calculate this indicator the same formula is used as that for calculating enrolment as a proportion of total enrolment in the Home country:

1) $$\frac{ENRLFOR_{,\,l,\,t,\,HostA}}{ENRL_{,\,l,\,t,\,HostA}} * 100$$

The same calculation is then repeated but for the total of all OECD countries which provides an ***OECD weighted average mean:***

2) $$\frac{ENROLFOR_{,\,l,\,t,\,allOECDcountries}}{ENROL_{,\,l,\,t,\,allOECDcountries}} * 100$$

The index of intensity for the host country is thus:

3) $$\frac{ENRLFOR_{,\,DestA}}{ENRLFOR_{,\,OECDtotal}}$$

3. Foreign enrolment shown as a distribution of foreign students between destination countries:

This next indicator shows the proportion of foreign students enrolled in one country (destination country) as a proportion of all foreign students enrolled in all OECD/reporting countries. This indicator identifies top receiving countries in absolute terms but does not reflect the percentage of

foreign students in relative terms as enrolled in tertiary education in the host country. For example, the percentage of foreign students enrolled in some destination countries could be relatively small when shown as a proportion of total tertiary enrolment.

$$\frac{ENRLFOR,_{l,\,g,\,DestA}}{ENRLFOR,_{l,\,g,\,allOECDDest}} * 100$$

4. Proportion of foreign students in tertiary education by country of origin:

Another more detailed indicator shown in *Education at a Glance* is to demonstrate the proportion of foreign students by country of origin in tertiary education in the host country. That is, the proportion of all foreign students enrolled in the host country is further broken down by acknowledging each student's country of origin).

$$\frac{ENRLFOR,_{l,\,DestA,\,OrigX}}{ENRLFOR,_{l,\,DestA\,,\,OrigALL}} * 100$$

5. Proportion of Country A (Country of Origin) students in tertiary education studying abroad by destination country:

Conversely, the proportion of tertiary students holding citizenship of Country A but studying abroad can be calculated by summing the enrolment of tertiary students (country of origin) studying in a particular destination and dividing this by the number of students enrolled in tertiary education (country of origin) studying in all OECD and non-OECD reporting destination countries. This calculation is illustrated as below:

$$\frac{ENRL,_{l,\,DestX,\,OrigA}}{ENRL,_{l,\,DestALL,\,OrigA}} * 100$$

Notes on interpretation and definition

Students are classified as foreign students if they are not citizens of the country in which the data are collected. While pragmatic and operational, this classification may create inconsistencies resulting from differing national policies regarding the naturalisation of immigrants and the inability of several countries to report foreign students net of permanent resident students. Countries that naturalise immigrants stringently and which cannot identify non-resident foreign students therefore over-estimate the size of their foreign student body, compared to more lenient countries. Bilateral comparisons of the data on foreign students should therefore be made with caution, since some countries differ in the definition and coverage of their foreign students.

The method of obtaining data on the number of foreign students is the same as that used for collecting data on total enrolments, *i.e.,* records of regularly enrolled students in an educational programme are used. Domestic and foreign students are usually counted on a specific day or period of the year. This procedure measures the proportion of foreign enrolments in an education system, but the actual number of individuals involved in foreign exchange may be much higher, since many students study abroad for less than a full academic year, or participate in exchange programmes that do not require enrolment (*e.g.,* inter-university exchange or advanced research short-term mobility).

7.5 Measures of learning environment and school organisation

7.5.1 Average class size

Policy context

Class sizes are widely debated in many countries. Smaller classes are valued because they may allow students to receive more individual attention from their teachers and reduce the burden of managing large

numbers of students and their work. Smaller class sizes may also influence parental choice of schools for their children. At the same time, because of the predominance of teacher costs in educational expenditure, reducing class sizes leads to sharp increases in the costs of education.

The concept of a ratio of students to teaching staff is different from that of class size. Although one country may have a lower ratio of students to teaching staff than another, this does not necessarily mean that classes are smaller in the first country or that students in the first country receive more teaching.

The relationship between the ratio of students to teaching staff and average class size is complicated by many factors, including differences between countries in the length of the school year, the annual number of hours for which a student attends class, the annual time teachers are expected to spend teaching, the grouping of students within classes, and the practice of team teaching.

Calculation:

When calculated over the course of a school year, the counts of classes can be complicated if classes sub-divide into groups for certain parts of the curriculum. For example, if a class of 20 students receive tuition together for all but one lesson when the class splits into two groups of 10, it would be misleading to count the two classes of 10 students with equal weight as the class with 20 students. For simplicity in the calculation of class size at primary and lower secondary, where such splitting of classes is less prevalent, the advice given is to exclude the sub-divisions from the calculation. In upper secondary on the other hand, it would be advisable to weight the sub-divisions according to the proportion of the school week which they account for, though a methodology has not yet been established for this.

Average class size *for primary and lower secondary levels:*

$$\frac{TOTAL\ PUP}{TOTAL\ CLASS}$$

Where:

TOTALPUP= total number of students enrolled at the level

TOTALCLASS= total number of classes ***excluding those taught in sub-divisions and excluding special needs classes.***

7.5.2 Ratio of students to teaching staff

Policy context

While the intended instruction time reflects the time for which a student has access to teaching in various study areas, the student-teacher ratio provides a measure of students' access to teachers (in full-time equivalents).

Teachers are indeed the most important resource in student instruction. The ratio of students to teaching staff is an important indicator of the resources which countries devote to education. Because of the difficulty of constructing direct measures of educational quality, this indicator is also often used as a proxy for quality, on the assumption that a smaller ratio of students to teaching staff means better access by students to teaching resources.

However, a low ratio of students to teaching staff does not necessarily mean better access to teaching and to educational support and may simply be a symptom of ineffective use of human resources. But a very high ratio of students to teaching staff certainly suggests insufficient professional support for learning, particularly for students from disadvantaged home backgrounds. At the same time, such inferences need to be made with great care since many other factors influence learning outcomes. A reduction in the ratio

of weighted students to teaching staff may have to be weighed against higher salaries for teachers, greater investment in teaching technology, or more widespread use of assistant teachers and other paraprofessionals, whose salaries are often considerably lower than those of qualified teachers.

"Teaching staff" refers to professional personnel directly involved in teaching students. The classification includes classroom teachers; special education teachers; and other teachers who work with students as a whole class in a classroom, in small groups in a resource room, or in one-to-one teaching inside or outside a regular classroom. Teaching staff also includes chairpersons of departments whose duties include some amount of teaching, but it does not include non-professional personnel who support teachers in providing instruction to students, such as teachers' aides and other paraprofessional personnel.

Calculation:

This indicator shows the ratio of students to teaching staff, obtained by dividing the number of full-time equivalent students at a given level of education by the number of full-time equivalent "teachers" at that level and in similar types of institutions.

Notes on coverage

This indicator requires a consistent coverage of personnel and enrolment data to be meaningful and therefore the calculation uses the student and personnel count that are collected within the UOE collection on the same basis. These counts allow, for instance, students in religious schools to be excluded if their teachers are not reported in the personnel data.

7.5.3 Teachers salaries

Policy context

The recruitment and retention of an educated and skilled teaching force is a major concern in most OECD countries. Key determinants of the supply of qualified teachers are the salaries and working conditions of teachers, including starting salaries and the structures of pay scales, and the costs incurred by individuals in becoming teachers, as compared with salaries and costs in other occupations. Both affect the career decisions of potential teachers and the types of people attracted to the teaching profession.

The need for both competitive starting salaries and a reward system acknowledging new skills, the value of experience and actual performance, poses a challenge for every country. A comparison of different national salary schemes provides a unique opportunity for policy-makers to evaluate their own current policies and possible alternatives.

At the same time, teachers' salaries are the largest single factor in the cost of providing education. The compensation of teachers is thus a critical consideration for policy-makers seeking to maintain the quality of teaching and a balanced education budget. The size of education budgets naturally reflects trade-offs between a number of interrelated factors, including teachers' salaries, the student-teacher ratio, the quantity of instruction time intended for students, and the designated number of teaching hours of teachers.

Calculation:

In comparisons of teacher salaries the salaries are presented in equivalent US dollars adjusted for cross-national differences in purchasing power (PPPs).

$$\frac{SALARY_{public\ institutions,\ qualification,\ experience,\ level}}{PPP}$$

Salary per hour of net contact (teaching) time after 15 years of experience is calculated by dividing total annual gross salary for a teacher with the minimum qualifications required to be fully qualified and 15 years' experience by the number of hours a full-time teacher is expected to spend teaching. Hourly salaries are then converted using Purchasing Power Parities (PPPs) exchange rate data from the OECD National Accounts database.

$$\frac{SALARY}{TEACHTIME \times PPP}$$

where:

SALARY= total annual gross salary (before tax) for a teacher with the minimum training necessary to be fully qualified and with 15 years' experience

TEACHTIME= Net contact time for teaching *i.e.* the number of hours per year that a full-time teacher teaches a group or class of students according to the formal policy in that country

Notes on interpretation

Basic salary scales are only one among a set of incentives to attract and retain teachers in the profession. In addition to salary scales, most countries use a complex system of bonuses to increase basic salaries and reward qualifications and performance in teaching. The value of these is not currently reflected in this indicator. As a result, the international comparison of basic salaries will be a biased approximation of actual teachers' monetary incentives depending on countries' relative emphasis on bonuses or base salary. This must be kept in mind in analyses of these figures.

Other teacher salary indicators that are calculated relate gross salaries to GDP per capita and also compare salaries at different points in the salary progression scale: minimum salaries, salaries after 15 years and salaries at the top of the scale.

7.6 Measures of finance

This section describes the indicator methodologies which underpin the indicators on educational finance which appear in Chapter B of *Education at a Glance* as follows:

- Expenditure on educational institutions per student
- Cumulative expenditure on educational institutions per student over the average duration of tertiary studies
- Expenditure on educational institutions per student relative to GDP per capita
- Expenditure on educational institutions as a percentage of GDP
- Index of change in educational expenditure
- Relative proportions of public and private investment on educational institutions
- Public expenditure on educational institutions as a percentage of total public expenditure
- Support for student and households through public subsidies

7.6.1 National accounts measures used in the indicators

- **Purchasing Power Parities (PPPs)** are the currency exchange rates that equalise the purchasing power of different currencies. This means that a given sum of money when converted into different currencies at the PPP rates will buy the same basket of goods and services in all countries. In other

words, PPPs are the rates of currency conversion which eliminate the differences in price levels among countries. Thus, when expenditure on GDP for different countries is converted into a common currency by means of PPPs, it is, in effect, expressed at the same set of international prices so that comparisons between countries reflect only differences in the volume of goods and services purchased. The data are derived from the OECD National Accounts Database.

- **Gross Domestic Product (GDP)** refers to the producers' value of the gross outputs of resident producers, including distributive trades and transport, less the value of purchasers' intermediate consumption plus import duties. GDP is expressed in local money (in millions). For countries which provide this information for a reference year that is different from the calendar year (such as Australia and New Zealand), adjustments are made by linearly weighting their GDP between two adjacent national reference years to match the calendar year. The data are derived from the National Accounts Database.
- **GDP per capita** is the Gross Domestic Product (in equivalent US dollars converted using PPPs) divided by the population. The data are derived from the National Accounts Database.
- The **GDP deflator** is obtained by dividing the GDP expressed at current prices by the GDP expressed at constant prices. This provides an indication of the relative price level in a country. Data are based on the year 1995. The following limitation of the use of such deflators should be recognised: Note that this adjustment relates to changes in the general price level rather than specifically to educational prices. The data are derived from the National Accounts Database.
- **Total public expenditure** as used for the calculation of the education indicators, corresponds to the non-repayable current and capital expenditure of all levels of government. Current expenditure includes final consumption expenditure (*e.g.,* compensation of employees, consumption intermediate goods and services, consumption of fixed capital, and military expenditure), property income paid, subsidies, and other current transfers paid (*e.g.,* social security, social assistance, pensions and other welfare benefits). Capital expenditure is spending to acquire and/or improve fixed capital assets, land, intangible assets, government stocks, and non-military, non-financial assets, and spending to finance net capital transfers. The data are derived from the National Accounts Database.

7.6.2 Expenditure on educational institutions per student

Policy context

Effective schools require the right combination of trained and talented personnel, adequate facilities, state-of-the-art equipment and motivated students ready to learn. However, the demand for high-quality education, which can translate into higher costs per student, must be balanced against placing undue burdens on taxpayers.

As a result, the question of whether the resources devoted to education yield adequate returns to the investment made figures prominently in the public debate. Although the optimal volume of resources required to ensure optimal returns for either the participant or society as a whole is difficult to assess, international comparisons of spending per student can provide a starting point for discussion by evaluating how countries vary in the extent of their investment in education in order to assess the effectiveness of different models of educational provision.

Calculation and data sources

This indicator represents direct public and private expenditure on educational institutions in relation to the number of full-time equivalent students enrolled in these institutions. It also reviews how expenditure per student varies between different levels of education. The indicator covers all expenditure on educational

institutions, including expenditure on ancillary services and expenditure on R&D. Expenditure per student on a particular level of education is calculated by dividing the total expenditure on educational institutions at that level by the corresponding full-time equivalent enrolment. Only those educational institutions and programmes are taken into account for which both enrolment and expenditure data are available.

Expenditure in national currency is first converted into equivalent US dollars by dividing the national currency figure by the purchasing power parity (PPP) conversion factor (see definition in section 7.6.1). The student enrolment numbers used are those that are collected with a coverage aligned to that of the finance data (See section 4.2.9).

Alignment of school year to financial year

Differences between reference periods for the expenditure and enrolment data can lead to biased expenditure per student. In these cases, therefore, it is necessary to estimate student numbers for the reference period that coincides with the financial year. This involves taking a weighted average of the full-time equivalent number of students in the two adjacent academic years that overlap with the financial year. Annex 2 shows that such an adjustment is necessary for virtually all OECD countries. So the formula for adjusting student numbers to financial year 'x' is as follows:

$$weightedFTE_{,\ year\_x} = W_{year\ \_x-1/x} * FTE_{,\ x-1/x} + W_{year\ \_x/x+1} * FTE_{,\ year\ \_x/x+1},$$

where

$W_{year\ \_x-1/x}$ is the weight representing the portion of the academic year x-1/x that overlaps with the financial year x;

$W_{year\ \_x/x+1}$ is the weight representing the portion of the academic year x/x+1 that overlaps with the financial year x;

$FTE_{,\ x\text{-}1/x}$ is the number of full-time equivalent students in the academic year x-1/x; and

$FTE_{,\ x/x+1}$ is the number of full-time equivalent students in the academic year x/x+1

So, for example, in Austria, the alignment of school enrolment data to the 2001 financial year involves summing 8/12ths of the 2000/01 school year FTE enrolments data and 4/12ths of the 2001/02 school year FTE enrolments data.

In addition, there are a few countries where the financial year data do not align to the reference year- the calendar year. To correct for this- which would otherwise be a source of bias in the expenditure data- the financial year data are uprated to the intended reference period using the appropriate GDP deflators.

In summary, the calculation of expenditure per student takes into account these adjustments for inflation on the one hand, and alignment of enrollment data with the finance reference period. The calculation formula would thus be the following for the year 2001:

$$\frac{All\_EXPENDITURE \times INFLATION}{\left[ENRL_{2001} \times weight_{2001} + ENRL_{2002} \times (1 - \text{weight}_{2001})\right]^{alignedFIN} \times PPP}$$

7.6.3 Cumulative expenditure on educational institutions per student over the average duration of tertiary studies

Policy context

Since the typical duration and the intensity of tertiary education vary between OECD countries, the differences between countries' in annual expenditure per student as described above do not necessarily reflect the variation in the total cost of educating the typical tertiary student. Today, students can choose from a range of institutions and enrolment options in order to find the best fit between their degree objectives, abilities and personal interests. Many students enrol on a part-time basis while others work while studying, or attend more than one institution before graduating. These varying enrolment patterns can affect the interpretability of expenditure on education per student. In particular, comparatively low annual expenditure on education per student can result in comparatively high overall costs of tertiary education if the typical duration of tertiary studies is long.

The OECD therefore also calculates cumulative expenditure on education over the average duration of tertiary studies by multiplying annual expenditure per student by an estimate of the average duration of tertiary studies.

Calculating average duration of tertiary studies

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

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

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

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

for year *i* of study, that a student who started *i*-1 years before will still be enrolled in year *i* of study. Finally, the sum of all conditional probabilities gives an estimate of the average duration of tertiary education. Expenditure in the current reference year is assumed to be typical of the total duration of studies.

7.6.4 Expenditure on educational institutions per student relative to GDP per capita

Policy context

Similar to expenditure on educational institutions per student expressed in PPP monetary terms, expenditure per student expressed in terms of GDP per capita also permits an evaluation of how countries vary in the extent of their investment in education. Benchmarking against GDP per capita, compares a countries' investment in education relative to its ability to pay.

Calculation and data sources

As with expenditure per student expressed in PPP terms, this indicator is calculated by dividing the total expenditure on educational institutions at a given level of education by the corresponding full-time equivalent enrolment. Only those educational institutions and programmes are taken into account for which both enrolment and expenditure data are available.

Expenditure in national currency is then divided by GDP per capita in national currency.

$$\frac{All\_EXPENDITURE}{ENRL^{alignedFINANCE} \times GDPcap}$$

Notes on coverage

As in the previous indicator, the student enrolment data is aligned to the financial year reference period. An inflation adjustment to bring the financial year in line with the reference year may not, however, be necessary if the GDP per capita figures refer to the same reference year as the finance data.

7.6.5 Expenditure on educational institutions as a percentage of GDP

Policy context

This indicator provides a measure of the relative proportion of a nation's wealth that is invested in educational institutions and of the respective role of public and private stakeholders. Expenditure on education is an investment that can help to foster economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality. The proportion of total financial resources devoted to education is one of the key choices made in each country by governments, enterprises, and individual students and their families alike.

Calculation and data sources

This indicator examines the proportion of national resources devoted to educational institutions and the levels of education to which they are directed.

Expenditure on educational institutions, as covered by this indicator, includes expenditure on instructional educational institutions as well as expenditure on non-instructional educational institutions. The latter provide administrative, advisory or professional services to other educational institutions, although they do not enrol students themselves (*e.g.* national, state, and provincial ministries or departments of education-see section 4.5.2). This broad definition of institutions ensures that expenditure on services, which are provided in some countries by schools and universities and in others by agencies other than schools, are covered on a comparable basis.

This indicator is disaggregated by sources of funds. The distinction between public and private sources of funds is based on the *initial* sources of funds and does not reflect subsequent public-to-private or private-to-public transfers.

For this reason, subsidies to households for tuition fees and other payments to other private entities (see definition in Section 4.6) are included in public expenditure in this indicator (see **public_subsidies** in formula below). Similarly, international expenditure on educational institutions is included in public sources (see **Expendinternational** in formula below). Public expenditure is equal to :

$$\frac{EXPENDpublic + Public\_subsidies + EXPENDinternational}{GDP}$$

Private expenditures comprise payments from households and other private entities to educational institutions for tuition and other fees, net of offsetting public subsidies.

$$\frac{EXPEND\ private - public\_subsidies}{GDP}$$

7.6.6 Index of change in educational expenditure

Policy context

Although single year figures for educational expenditure are informative in showing the relative positions of countries' expenditure in the year in question, it is important to view these figures in the context of the trends over a number of years. In particular the impact of current policies are best viewed in terms of the trend in the figures.

This indicator therefore provides a measure of changes in educational expenditure over time, comparing latest year figures with those for an earlier year -1995 in this case. All 1995 educational expenditure are adjusted to current prices using the GDP deflator (see definition section 7.6.1).

Calculation and data sources

This indicator covers all expenditure on educational institutions, including expenditure on ancillary services and expenditure on R&D.

As with the previous indicator (7.6.5), changes in expenditure are expressed in terms of the initial source of funds *i.e.* before transfers of funds from public entities to private entities. This is due to limited data availability.

It is important, that the data for the base year and the reference period are obtained by countries following the same definitions, classifications and coverage. Experience shows that, because countries are continuously improving the coverage and quality of their data, the data for earlier years are unlikely to be consistent with that for current years and such comparisons tend to lead to an overestimation of increase in spending. For this reason the trend data have been compiled through a special data collection to ensure comparability.

Index of change in public expenditure on educational institutions =

$$\frac{EXPENDpublic, currentyear}{EXPENDpublic, 1995 * GDPdeflator(1995, currentyear)} * 100$$

Index of change in private expenditure on educational institutions =

$$\frac{EXPENDprivate, currentyear}{EXPENDprivate, 1995 * GDPdeflator(1995, currentyear)} * 100$$

$$\text{Index of change in public and private expenditure on educational institutions} = \frac{EXPEND_{public,\,currentyear} + EXPEND_{private,\,currentyear} + EXPEND_{international,\,currentyear}}{(EXPEND_{public,\,1995} + EXPEND_{private,\,1995} + EXPEND_{international,\,1995}) * GDPdeflator(1995,\,currentyear)} * 100$$

Note on interpretation

An index of change should always be read in relation to the absolute level of spending in the base year which, if small, can result in very large index changes. For example, if private expenditure was low or even negligible in a country in the base year, the introduction of even low level fees in the current year they would produce very large changes in the indices between the base and current years.

Care must be taken in looking at only two points in time to present changes in spending. This provides only a limited picture, since either the base year or the current year may be an exceptional year and therefore the comparison could convey a misleading trend. For example, an important school building project in a small country may cause such a distortion.

7.6.7 Relative proportions of public and private investments in education

Policy context

Cost-sharing between participants in the education system and society as a whole is an issue that is under discussion in many countries. This question is especially relevant at the beginning and ending stages of education – early childhood and tertiary education – in which full or nearly full public funding is less common in some countries. This indicator illustrates educational cost sharing between the public and private sectors, including the amounts invested by one sector relative to the other and the extent of transfers of educational funds between them.

Calculation and data sources

This indicator covers all expenditure on educational institutions, including expenditure on ancillary services and expenditure on R&D. Foreign funds are not taken into account for the purpose of this indicator.

For public and private funds *final funds* are presented *i.e.* **after** public transfers have been made to private entities. Additionally the share of public subsidies to the private sector attributable to payments for educational institutions is presented. Using this information *initial funds*, can also be calculated by the reader, by subtracting the share of subsidies to households for tuition fees and other payments to other private entities (public subsidies in formula below - see definition in Section 4.6) from the final private funds and adding them to the final public funds.

$$\textit{Relative proportion of public sources} = \frac{EXPEND\_public}{EXPEND\_public + EXPEND\_private} * 100$$

$$\textit{Relative proportion of private sources} = \frac{EXPEND\_private}{EXPEND\_public + EXPEND\_private} * 100$$

$$\textit{Private: of which: subsidised} = \frac{Public\_subsidies}{EXPEND\_public + EXPEND\_private} * 100$$

7.6.8 Public expenditure on educational institutions as a percentage of total public expenditure

Policy context

This indicator focuses on public investment in education. Public budgets remain the main source of funds for education. Governments become involved in providing services to the public for different reasons, one of them resulting from the existence of positive externalities in educational investments, whereby the public and social benefit from education may be greater than the sum of private benefits alone. As a result, markets alone may fail to provide these services adequately. Education is one area where all governments intervene to fund or direct the provision of services since there is no guarantee that markets would provide equal access to educational opportunities. Government funding of educational services thus ensures that education is not beyond the reach of some members of society, and can contribute to broader equity-related social goals.

Public expenditure on educational institutions as a percentage of total public expenditure indicates the value of education relative to that of other public investments such as health care, social security, defence and security. To some extent, it can be interpreted in terms of relative priorities between different functions of the private sector. However, the role and mandate of the public sector varies greatly across countries given specific circumstances. For instance, nationwide health or security crises may result in comparatively lower spending on education relative to health or defence, even though education may remain a high priority on public agendas.

In addition, the size of public sectors varies widely across countries and so public investment in education is also presented relative to national GDP, in order to assess the magnitude of the public effort on education.

Calculation and data sources

Public educational expenditure includes expenditure on educational institutions as well as subsidies for students' living costs and for other private expenditure outside institutions (subsidies for education to private entities). Public expenditure on education includes expenditure by all public entities, including ministries other than the ministry of education, local and regional governments and other public agencies.

Educational expenditure is expressed as a percentage of a country's total public sector expenditure (PUBEXPEND – See definition in section 7.6.1) ***and as a percentage of GDP*** (GDP – See definition in section 7.6.1):

$$\frac{EXPENDpublic + Subsidies\ for\ education\ to\ private\ entities}{PUBEXPEND}$$

and

$$\frac{EXPENDpublic + Subsidies\ for\ education\ to\ private\ entities}{GDP}$$

Total public expenditure, also referred to as total government spending, corresponds to the non-repayable current and capital expenditure of all levels of government, central, regional and local.

7.6.9 Support for student and households through public subsidies

Policy context

Through subsidies to students and their families, governments can help to cover the costs of education and related expenditure, with the aim of increasing access to education and reducing social inequalities. Furthermore, public subsidies play an important role in indirectly funding educational institutions.

Channelling funding for institutions through students may help to increase competition among institutions and result in greater efficiency in the funding of education. Since aid for student living costs can also serve as a substitute for work as a financial resource, public subsidies may enhance educational attainment by enabling students to study full-time and to work fewer hours or not at all.

Calculation and data sources

Public subsidies to households include grants and scholarships, public student loans and transfers to other private entities. They are expressed in relation to total public expenditure on education to assess governments' relative emphasis on different types of subsidies.

The proportion of scholarships and loans in total public expenditure on education are expressed as:

$$100 \times \frac{\text{Scholarships and other grants to students/households}}{EXPENDpublic + Subsidies\ for\ education\ to\ private\ entities}$$

and

$$100 \times \frac{Expenditure\_on\_student\_loans}{EXPENDpublic + Subsidies\ for\ education\ to\ private\ entities}$$

Expenditure on student loans is reported on a gross basis - that is, without subtracting or netting out repayments or interest payments from the borrowers (students or households). This is because the gross amount of loans including scholarships and grants is the relevant variable for measuring financial aid to current participants in education (see definition in Section 4.6).

In addition, public costs related to private loans guaranteed by governments are included in subsidies to other private entities. Unlike public loans, only the net cost of these loans is included. The proportion of transfers to other private entities is thus expressed as:

$$100 \times \frac{Transfers\_and\_payments\_to\_other\_private\_entities}{EXPENDpublic + Subsidies\ for\ education\ to\ private\ entities}$$

Last, total subsidies to the private sector are related to GDP in order to assess the magnitude of these public indirect transfers.

$$100 \times \frac{Subsidies\_for\_education\_to\_private\_entities}{GDP}$$

Annex

1

CONTRIBUTORS TO THIS PUBLICATION

Over the years many people have contributed to the development of the concepts, definitions and classifications that appear in this publication. The following people have been particularly helpful in drawing this publication together. The OECD wishes to thank them all for their valuable efforts.

Technical Group on Education Statistics and Indicators

Mr. R.R.G. ABELN (Netherlands)
Mr. Paul AMACHER (Switzerland)*
Ms. Karin ARVEMO-NOTSTRAND (Sweden)
Ms. Alina BARAN (Poland)
Ms. Eva BOLIN (Sweden)
Mr. Fernando CELESTINO REY (Spain)
Mr. Eduardo DE LA FUENTE (Spain)*
Ms. Gemma DE SANCTIS (Italy)
Mr. Kjetil DIGRE (Norway)
Mr. Philippe DIEU (Belgium)
Ms. Ritsuko DOKO (Japan)
Ms. Maria DOKOU (Greece)*
Mr. J. Douglas DREW (Canada)
Ms. Mary DUNNE (EUROSTAT)
Mr. Michele EGLOFF (Switzerland)
Mr. Timo ERTOLA (Finland)
Mr. Pierre FALLOURD (France)
Ms. Alzbeta FERENCICOVA (Slovak Republic)
Mrs. Esin FENERCIOGLU (Turkey)
Dr. Katie FREEMAN (United States)*
Mr. Paul GINI (New Zealand)
Mr. Bengt GREF (Sweden)
Ms. Yonca GUNDUZ-OZCERI (Turkey)
Mr. Heinz-Werner HETMEIER (Germany)
Ms. Maria HRABINSKA (Slovak Republic)
Ms Natalia KOVALEVA (Russian Federation)
Mr. Jesus IBANEZ MILLA (Spain)
Mr. Klaus Fribert JACOBSEN (Denmark)
Ms. Michèle JACQUOT (France)
Ms. Nathalie JAUNIAUX (Belgium)
Mr. Felix KOSCHIN (Czech Republic)*
Mr. Steve LEMAN (United Kingdom)*
Mr. Jérôme LEVY (Luxembourg)
Mr. Laszlo LIMBACHER (Hungary)
Ms. Judit KOZMA LUKACS (Hungary)
Mr. Douglas LYND (UNESCO)*
Mr. Dittrich MAGERKURTH (Germany)
Mr. Robert MAHEU (Canada)*
Ms. Sabine MARTINSCHITZ (Austria)
Ms. Giuliana MATTEOCCI (Italy)
Mr. Konstantinos MITROGIANNIS (Greece)
Mr. Geir NYGARD (Norway)
Mr. Muiris O'CONNOR (Ireland)
Mr. Brendan O'REILLY (Australia)*
Ms. Hyun-Jeong PARK (Korea)
Mr. Wolfgang PAULI (Austria)
Mr. João PEREIRA DE MATOS (Portugal)
Mr. Jose PESSOA (UNESCO)
Mr. Spyridon PILOS (EUROSTAT)*
Ms. Elena REBROSOVA (Slovak Republic)
Mr. Jean Paul REEFF (Luxembourg)
Mr. Ingo RUSS (Germany)
Mr. Pascal SCHMIDT (EUROSTAT)*
Mr. Joel SHERMAN (United States)
Mr. Thomas SNYDER (United States)*
Ms. Maria Pia SORVILLO (Italy)
Mr. Konstantinos STOUKAS (Greece)
Mr. Dick TAKKENBERG (Netherlands)
Mr. Ken THOMASSEN (Denmark)*
Mr. Mika TUONONEN (Finland)
Mr. Shuichi UEHARA (Japan)
Ms. Ásta URBANCIC (Iceland)
Mr. Matti VAISANEN (Finland)
Ms. Erika VALLE BUTZE (Mexico)
Ms. Ann VAN DRIESSCHE (Belgium)
Ms. Elisabetta VASSENDEN (Norway)*
Mr. Rik VERSTRAETE (Belgium)
Mr. Yoshihiro NAKAYA (Japan)

*Member of the Handbook Editorial Review Group which reviewed drafts as they were produced.

OECD Secretariat

Mr. Michael DAVIDSON
Ms. Joanna BIESMANS
Mr. Eric CHARBONNIER
Mr. Jean-Luc HELLER
Mrs. Annette PANZERA
Mr. Andreas SCHLEICHER

Other contributors to this publication

Mr. Kai v. AHLEFELD (Layout)
Mr. Michael BRUNEFORTH (Consultant)
Mr. Gilles BURST (Layout)

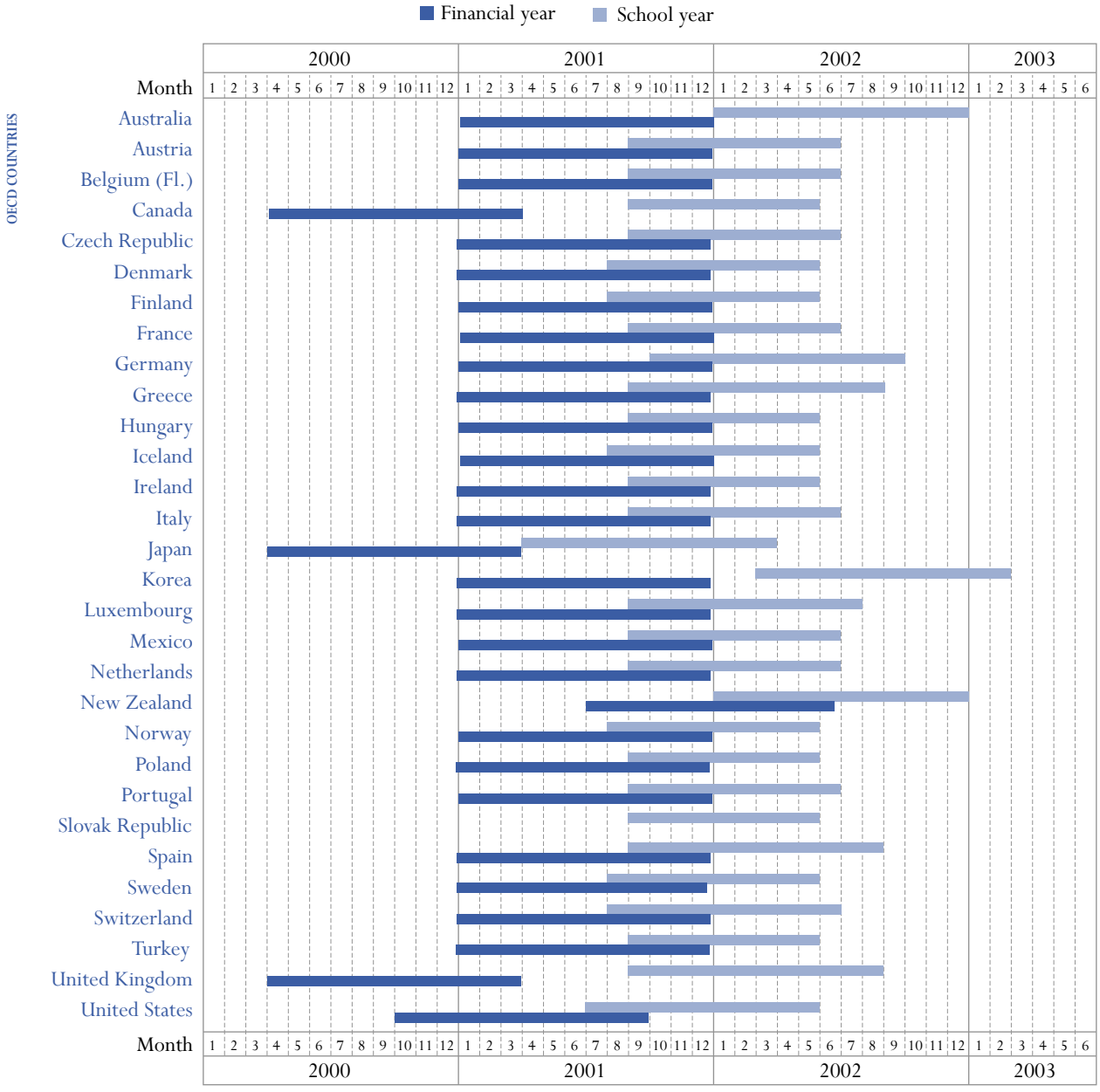
Annex

2

REFERENCE DATES IN OECD COUNTRIES' DATA SUBMISSIONS

Table X.1

School year and financial year used for the calculation of indicators in the 2003 data collection



Source: OECD.

Table X.2
Data collection period and reference dates for ages reported by OECD countries in the 2003 data collection[1]

	Data collection period	Reference date for student ages	Exceptions
Australia	August/02	June/02	
	March/02	June/02	Tertiary levels only
Austria	October/01	December/01	
	November/01	December/01	ISCED levels 5A and 6 only
Belgium	October/01	January/02	
	February/02	January/02	Tertiary levels only
Canada	June/01	September/01	
Czech Republic	September/01	January/02	
	October/01	January/02	
Denmark	June/02	January/02	
Finland	December/01	December/01	Universities, apprenticeship training, Kindergarten
	September/01	December/01	Other student data
France		January/02	
Germany	October/01	December/01	
Greece	January/02	December/01	
Hungary	October/01	December/01	
Iceland	October/01	December/01	
Ireland	October/01	December/01	
	February/02	December/01	ISCED level 6 only
Italy	October/01	December/01	
	July/02	December/01	Tertiary levels only
Japan	May/01		
Korea	April/02	September/01	
Luxembourg		April/02	
Mexico	October/01	September/01	
Netherlands	October/01	December/01	
	December/01	December/01	ISCED levels 1 and 6 (primary and advanced tertiary) only
Norway	October 2001		
New Zealand	July/02	July/02	
Poland		August/01	
Portugal		February/02	
Spain		September/01	
Slovak Republic	September/01	December/01	
	October/01	December/01	ISCED levels 5A and 6 only
Sweden	Autumn-01	December 31/01	
Switzerland		September/01	
Turkey	October/01	September/01	
		August/01	ISCED levels 2 and 3 (secondary and upper secondary) only
	November/01	November/01	Tertiary levels only
United Kingdom	Various	August/01	
United States	December/02	October/01	

1. The intended reference periods in the 2003 data collection were: Financial year 2001 for finance data, calendar year 2002 for graduate data and 2001/2002 school/academic year for remaining data.
Source: OECD.

Table X.3
Typical graduation ages in upper secondary education

	Programme orientation		Educational/labour market destination			
	General programmes	Pre-vocational or vocational programmes	ISCED 3A programmes	ISCED 3B programmes	ISCED 3C short programmes[1]	ISCED 3C long programmes[1]
OECD COUNTRIES						
Australia	m	m	17	m	m	m
Austria	18	18	18	18	18	a
Belgium	18	18	18	a	18	18
Czech Republic	18	18	18	18	17	a
Denmark	19-20	19-20	19-20	a	a	19-20
Finland	19	19	19	a	a	a
France	18-19	17-20	18-19	19-20	17-20	18-21
Germany	19	19	19	19	a	a
Greece	17-18	17-18	17-18	a	a	17-18
Hungary	18-19	18-19	18-19	a	18-19	19-20
Iceland	20	20	20	19	18	20
Ireland	17-18	17-18	17-18	a	a	17-18
Italy	19	19	19	19	17	a
Japan	18	18	18	18	16	18
Korea	17-18	17-18	17-18	a	a	17-18
Luxembourg	19	17-19	17-19	19	n	17-19
Mexico	18	18	18	a	a	18
Netherlands	17-18	18-20	17-18	a	18-19	18-20
New Zealand	m	a	18	17	17	17
Norway	18-19	18-19	18-19	a	m	16-18
Poland	19	20	19-20	a	18	a
Slovak Republic	18	16-18	18	a	17	16
Spain	17	17	17	a	17	17
Sweden	19	19	19	19	a	19
Switzerland	18-20	18-20	18-20	18-20	17-19	17-19
Turkey	16	16	16	a	a	m
United States	18	a	18	a	a	a

1. Duration categories for ISCED 3C - Short: more than one year shorter than ISCED 3A/3B programmes; Long: of similar duration to ISCED 3A or 3B programmes.
Source: OECD.
a = not applicable; m = missing

Table X.4
Typical graduation ages in post-secondary non-tertiary education

		Educational/labour market destination		
		ISCED 4A programmes	ISCED 4B programmes	ISCED 4C programmes
OECD COUNTRIES	Austria	19	20	20
	Belgium	19	a	19-21
	Czech Republic	20	a	20
	Denmark	21-22	a	21-22
	Finland	a	a	25-29
	France	18-21	a	19-21
	Germany	22	22	a
	Hungary	a	a	19-22
	Iceland	a	a	21
	Ireland	a	a	19
	Italy	a	a	20
	Korea	a	a	a
	Luxembourg	a	a	20-25
	Mexico	a	a	a
	Netherlands	a	a	18-20
	New Zealand	18	18	18
	Norway	20-25	a	20-25
	Poland	a	a	21
	Slovak Republic	20-21	a	a
	Spain	18	18	a
	Sweden	m	m	19-20
	Switzerland	19-21	21-23	a
	Turkey	a	a	a
	United States	a	a	20

1. OECD estimate.
Source: OECD.
a = not applicable; m = missing

Table X.5
Typical graduation ages in tertiary education

OECD COUNTRIES

	Tertiary-type B (ISCED 5B)	All programmes	Tertiary-type A (ISCED 5A)			Advanced research programmes (ISCED 6)
			3 to less than 5 years	5 to 6 years	More than 6 years	
Australia	m	a	20-21	22-23	24	25-29
Austria	m	a	22	23	a	25
Belgium	m	a	m	m	m	25-29
Czech Republic	22	a	22	24	a	26
Denmark	21-25	a	22-24	25-26	27-30	30
Finland	21-22	a	25-29	25-29	30-34	29
France	20-21	a	21-22	23-24	25	25-26
Germany	21	a	25	26	a	28
Greece	20-21	a	21-22	22-24	a	24-28
Hungary	20-22	a	22-24	23-26	26-27	30-34
Iceland	22-24	a	23	25	27	29
Ireland	20	a	21	23	24	27
Italy	22-23	a	22	23-25	25-27	27-29
Japan	20	a	22	24	a	27
Korea	m	a	m	m	m	26
Mexico	20	20-26	22	24	25	26
Netherlands	m	a	m	m	m	25
New Zealand	20	21	m	m	m	28
Norway	m	a	m	m	m	29
Poland	m	24	m	m	m	m
Slovak Republic	20-21	a	m	m	m	27
Spain	19	20-22	m	m	m	25-27
Sweden	22-23	a	23-25	25-26	a	27-29
Switzerland	23-29	a	23-26	23-26	28	29
Turkey	m	m	m	m	m	28-29
United Kingdom	20	a	21	23	24	24
United States	20	22	22	a	a	27

Note: Where tertiary-type A data are available by duration of programme, the graduation rate for all programmes is the sum of the graduation rates by duration of programme.

Source: OECD.

a = not applicable; m = missing

Annex

3

EXCERPT FROM THE FRASCATI MANUAL

Institutional Classification

Higher education sector

Coverage

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.

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.

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.

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.

Post-secondary education

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).

University hospitals and clinics

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).

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.

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.

Borderline research institutions

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.

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.

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.

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.

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.

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.

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.

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.

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).

It is recommended that R&D expenditure and personnel of all institutes at the borderline with the higher education sector be reported separately.

Measurement of expenditures devoted to R&D

Introduction

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.

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.

Intramural expenditures

Definition

Intramural expenditures are all expenditures for R&D performed within a statistical unit or sector of the economy, whatever the source of funds.

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.

Current expenditures

Current expenditures are composed of labour costs and other current costs.

Labour costs of R&D personnel

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.

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.

Labour costs of postgraduate students engaged in R&D

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.

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.

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.

Other current costs

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.

Indirectly paid current costs

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.

Rents for research facilities

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.

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.

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.

Social security costs and pensions for R&D personnel

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.".

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.

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.

Value Added Tax (VAT)

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. 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.

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.

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.

Exclusion of depreciation

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.

Capital expenditures

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.

They are composed of expenditures on:

- land and buildings;
- instruments and equipment.

Land and buildings

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.

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.

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.

Countries should maintain a consistent methodology with regard to these costs.

Instruments and equipment

This comprises major instruments and equipment acquired for use in the performance of R&D.

Conventions for distinguishing between current and capital items

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.

Identifying the R&D content of capital expenditures

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).

Sale of R&D capital goods

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.

Libraries

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.

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.

Sources of funds

Methods of measurement

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.

The first of these approaches is strongly recommended.

Criteria for identifying flows of R&D funds

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.

Direct transfer

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.

Resources may be transferred in a number of ways, not all of which may be considered direct.

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.

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.

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.

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.

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).

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.

Transfer both intended and used for R&D

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.

Identifying the sources of flows of R&D funds

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.

Influence of the type of the statistical unit

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.

Subcontracting and intermediaries

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.

Public general university funds (GUF)

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 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.

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.

Extramural expenditures

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.

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", with the following subclassification system:

- subsidiary or associated company;
- joint ventures;
- other business enterprise company located abroad;
- foreign government;
- EC;
- international organisations;
- other.

National totals

Gross domestic expenditure on R&D (GERD)

GERD is total intramural expenditure on R&D performed on the national territory during a given period.

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. 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.

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.

Gross national expenditure on R&D (GNERD)

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.

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.

Annex

4

EXCERPT FROM SYSTEM OF NATIONAL ACCOUNTS 1993

Imputed social contributions (D.612)

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.

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.

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.

The two steps involved may be summarised 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

5

BROAD GROUPS AND FIELDS OF EDUCATION

This Annex lists the constituent parts of the fields of education listed in Section 5.3.3. The fields of education in the original ISCED were modified to eliminate overlapping, and increased to include new fields. Thus, there are now 25 fields of education as compared to 21 in the original version. Another innovation is the establishment of broad groups composed of fields of education having similarities. One such example is the broad group Health and Welfare comprising educational programmes in medicine, medical services, nursing, dental services and social services.

General programmes

01 Basic programmes

Basic general programmes pre-primary, elementary, primary, secondary, etc.

08 Literacy and numeracy

Simple and functional literacy, numeracy.

09 Personal development

Enhancing personal skills, *e.g.* behavioural capacities, mental skills, personal organizational capacities, life orientation programmes.

Education

14 Teacher training and education science

Teacher training for pre-school, kindergarten, elementary school, vocational, practical, non-vocational subject, adult education, teacher trainers and for handicapped children. General and specialized teacher training programmes.

Education science: curriculum development in non-vocational and vocational subjects. Educational assessment, testing and measurement, educational research, other education science.

Humanities and Arts

21 Arts

Fine arts: drawing, painting, sculpture;

Performing arts: music, drama, dance, circus;

Graphic and audio-visual arts: photography, cinematography, music production, radio and TV production, printing and publishing;

Design; Craft skills.

22 Humanities

Religion and theology; Foreign languages and cultures: living or 'dead' languages and their literature, area studies;

Native languages: current or vernacular language and its literature;

Other humanities: interpretation and translation, linguistics, comparative literature, history, archaeology, philosophy, ethics.

Social sciences, business and law

31 Social and behavioural science

Economics, economic history, political science, sociology, demography, anthropology (except physical anthropology), ethnology, futurology, psychology, geography (except physical geography), peace and conflict studies, human rights.

32 Journalism and information

Journalism; library technician and science; technicians in museums and similar repositories;

Documentation techniques;

Archival sciences.

34 Business and administration

Retailing, marketing, sales, public relations, real estate; Finance, banking, insurance, investment analysis;

Accounting, auditing, bookkeeping;

Management, public administration, institutional administration, personnel administration;

Secretarial and office work.

38 Law

Local magistrates, 'notaires', law (general, international, labour, maritime, etc.), jurisprudence, history of law.

Science

42 Life sciences

Biology, botany, bacteriology, toxicology, microbiology, zoology, entomology,

ornithology, genetics, biochemistry, biophysics, other allied sciences, excluding

clinical and veterinary sciences.

44 Physical sciences

Astronomy and space sciences, physics, other allied subjects, chemistry, other allied subjects, geology, geophysics, mineralogy, physical anthropology, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, marine science, vulcanology, palaeoecology.

46 Mathematics and statistics

Mathematics, operations research, numerical analysis, actuarial science, statistics and other allied fields.

48 Computing

Computer sciences: system design, computer programming, data processing, networks, operating systems - software development only (hardware development should be classified with the engineering fields).

Engineering, manufacturing and construction

52 Engineering and engineering trades

Engineering drawing, mechanics, metal work, electricity, electronics, telecommunications, energy and chemical engineering, vehicle maintenance, surveying.

54 Manufacturing and processing

Food and drink processing, textiles, clothes, footwear, leather, materials (wood, paper, plastic, glass, etc.), mining and extraction.

58 Architecture and building

Architecture and town planning: structural architecture, landscape architecture, community planning, cartography;

Building, construction;

Civil engineering.

Agriculture

62 Agriculture, forestry and fishery

Agriculture, crop and livestock production, agronomy, animal husbandry, horticulture and gardening, forestry and forest product techniques, natural parks, wildlife, fisheries, fishery science and technology.

64 Veterinary

Veterinary medicine, veterinary assisting.

Health and welfare

72 Health

Medicine: anatomy, epidemiology, cytology, physiology, immunology and immunoaematology, pathology, anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, neurology, sychiatry, radiology, ophthalmology;

Medical services: public health services, hygiene, pharmacy, pharmacology, therapeutics, rehabilitation, prosthetics, optometry, nutrition;

Nursing: basic nursing, midwifery;

Dental services: dental assisting, dental hygienist, dental laboratory technician, odontology.

76 Social services

Social care: care of the disabled, child care, youth services, gerontological services;

Social work: counselling, welfare n.e.c.

Services

81 Personal services

Hotel and catering, travel and tourism, sports and leisure, hairdressing, beauty treatment and other personal services: cleaning, laundry, dry-cleaning, cosmetic services, domestic science.

84 Transport services

Seamanship, ship's officer, nautical science, air crew, air traffic control, railway operations, road motor vehicle operations, postal service.

85 Environmental protection

Environmental conservation, control and protection, air and water pollution control, labour protection and security.

86 Security services

Protection of property and persons: police work and related law enforcement, criminology, fire-protection and fire fighting, civil security;

Military.

Not known or unspecified

(This category is not part of the classification itself but in data collection '99' is needed for 'fields of education not known or unspecified'.)

Annex

6

ISCED MAPPINGS OF COUNTRIES' NATIONAL PROGRAMMES TO ISCED LEVELS

Diagram legend	
Diagram legend	**Isced-97 Level** NC: Not yet classified
	Programme Orientation
General (G)/Type 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.
Pre-vocational or pre-technical (P)/Type 2	Education which is mainly designed explicitly to prepare 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. At least 25% of the content has to be vocational or technical.
Vocational or technical (V)/Type 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.
	Cumulative duration at Isced 5
Short (S)	Short 2 to less than 3 years
Medium (M)	Medium 3 to less than 5 years
Long (L)	Long: 5 to 6 years
Very long (VL)	Very long: More than 6 years
	Position in the national degree/qualification structure
Intermediate	Intermediate degree/qualification
1st	First degree/qualification
2nd	Second degree/qualification
3rd and +	Thrid and further degree/qualification

Reader's guide to the diagrams

For each country, the diagrams show how national educational programmes are mapped and reported under each level of ISCED-97. Each block in the diagram represents a national programme or group of national programmes, which are reported under a specific ISCED level. The descriptions adjoining the block indicate:

- the numeric reference for the programme (numbered consecutively from ISCED 0 programmes onwards)- they key to which is shown on the facing page
- the ISCED level to which the national programme is mapped (indicating the orientation where necessary: G= general, V= vocational, P= Pre-vocational
- the typical starting age (TSA) of students taking the programme
- the number of students enrolled on the programme in the 20002/01 school year (? = numbers not known).

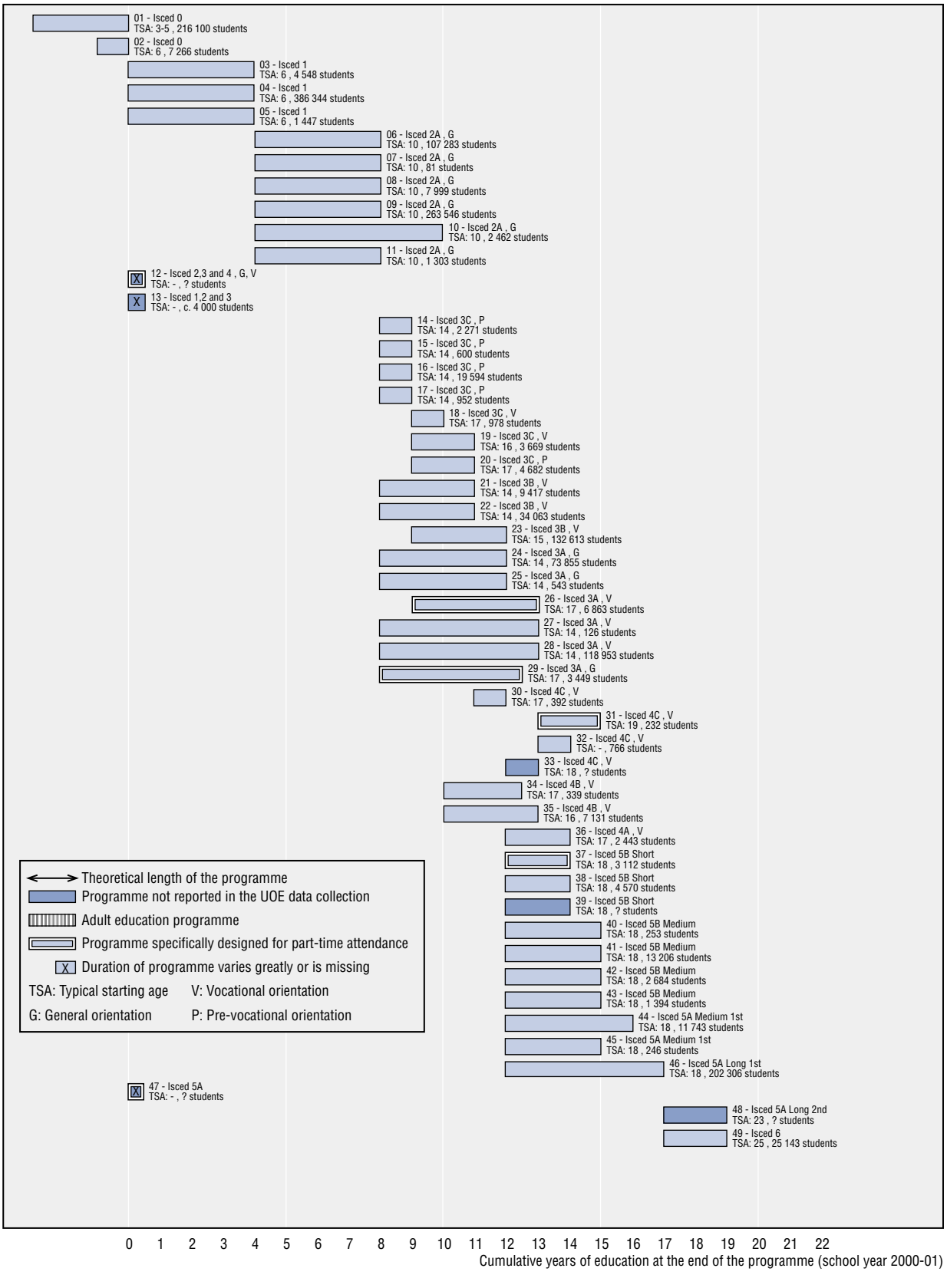
The length of the block represents the theoretical duration of the programme as indicated on the scale at the bottom of the diagram. Adult education programmes and programmes not reported in the annual UOE data collection (See Chapter 2) are indicated by different shading of the blocks and programmes designed for part-time attendance have the blocks enclosed in a border.

So, for example, for Australia, national programme 06 (Initial Vocational Courses: Operatives) is reported as ISCED 3C and is of vocational orientation. The typical age at which students start the programme is 15-40 years, some 236 301 students were enrolled in the school year 2000/01 and the theoretical duration is 1 year. This programme is for adults and has been designed for part-time attendance.

Australia

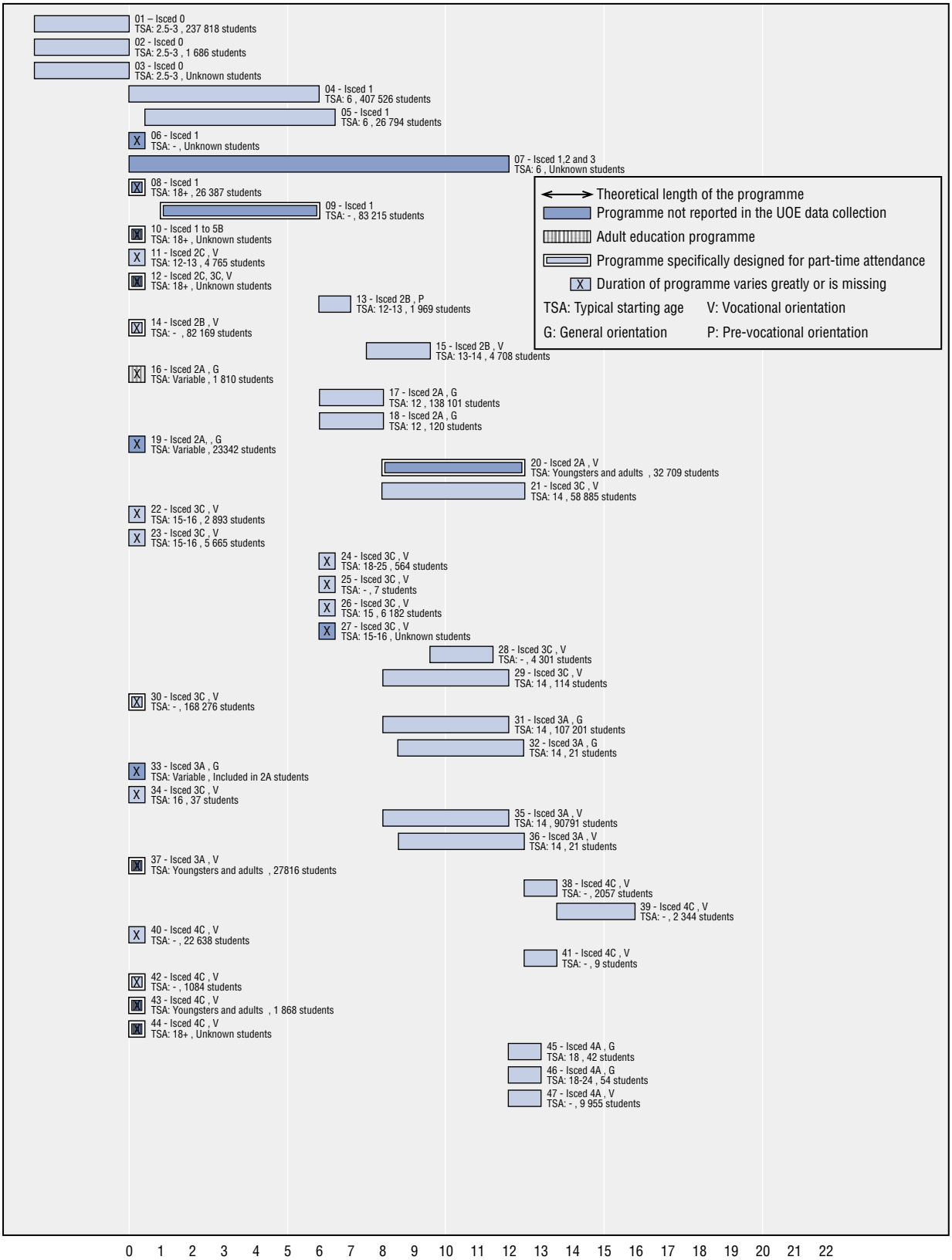
01 – Pre-school/Kindergarten
02 – Primary school
03 – 2100 Entry to Employment or Further Education: Basic Education and Basic Employment Skills (Stream 2100)
04 – Secondary school: 1st stage
05 – 2200 Entry to Employment or Further Education: Educational Preparation (Stream 2200)
06 – 3100 Initial Vocational Courses: Operatives
07 – 3211 Initial Vocational Courses: Skilled Courses for Recognised Trades – Partial Exemption to Recognised Trade Courses
08 – 3221 Initial Vocational Courses: Other Skilled Courses – Partial Exemption to Other Skills Courses
09 – 4100 Courses Subsequent to Initial Vocational Courses: Operative Level
10 – 3212 Initial Vocational Courses: Skilled Courses for Recognised Trades – Complete Trade Courses
11 – 3222 Initial Vocational Courses: Other Skilled Courses – Complete Other Skills Courses
12 – Secondary School: 2nd Stage
13 – 3300 Initial Vocational Courses: Trade Technician/Trade Supervisory
14 – 4300 Courses Subsequent to Initial Vocational Courses: Trade Technician/Trade Supervisory
15 – 4200 Courses Subsequent to Initial Vocational Courses: Skilled Level
16 – 3400 Initial Vocational Courses: Paraprofessional – Technician
17 – 3500 Initial Vocational Courses: Paraprofessional – Higher Technician
18 – Undergraduate Diplomas awarded by Universities
19 – 4400 Courses subsequent to Initial Vocational Courses: Paraprofessional/Technician
20 – 4500 Courses Subsequent to Initial Vocational Courses: Paraprofessional/Higher Technician
21 – 3600 Initial Vocational Courses: Professional
22 – Bachelor (Pass)
23 – Bachelor -Honours
24 – Courses to Qualify Graduates for Further Study (Graduate Certificate)
25 – Courses to Qualify Graduates for Further Study (Bachelor's Graduate Entry)
26 – Graduate Diplomas
27 – Dentistry
28 – Veterinary Science
29 – Medicine and Surgery
30 – Masters Degree done by course work
31 – Masters Degree by thesis
32 – Doctorate (by Course Work)
33 – Doctorates
34 – Doctorates

Austria



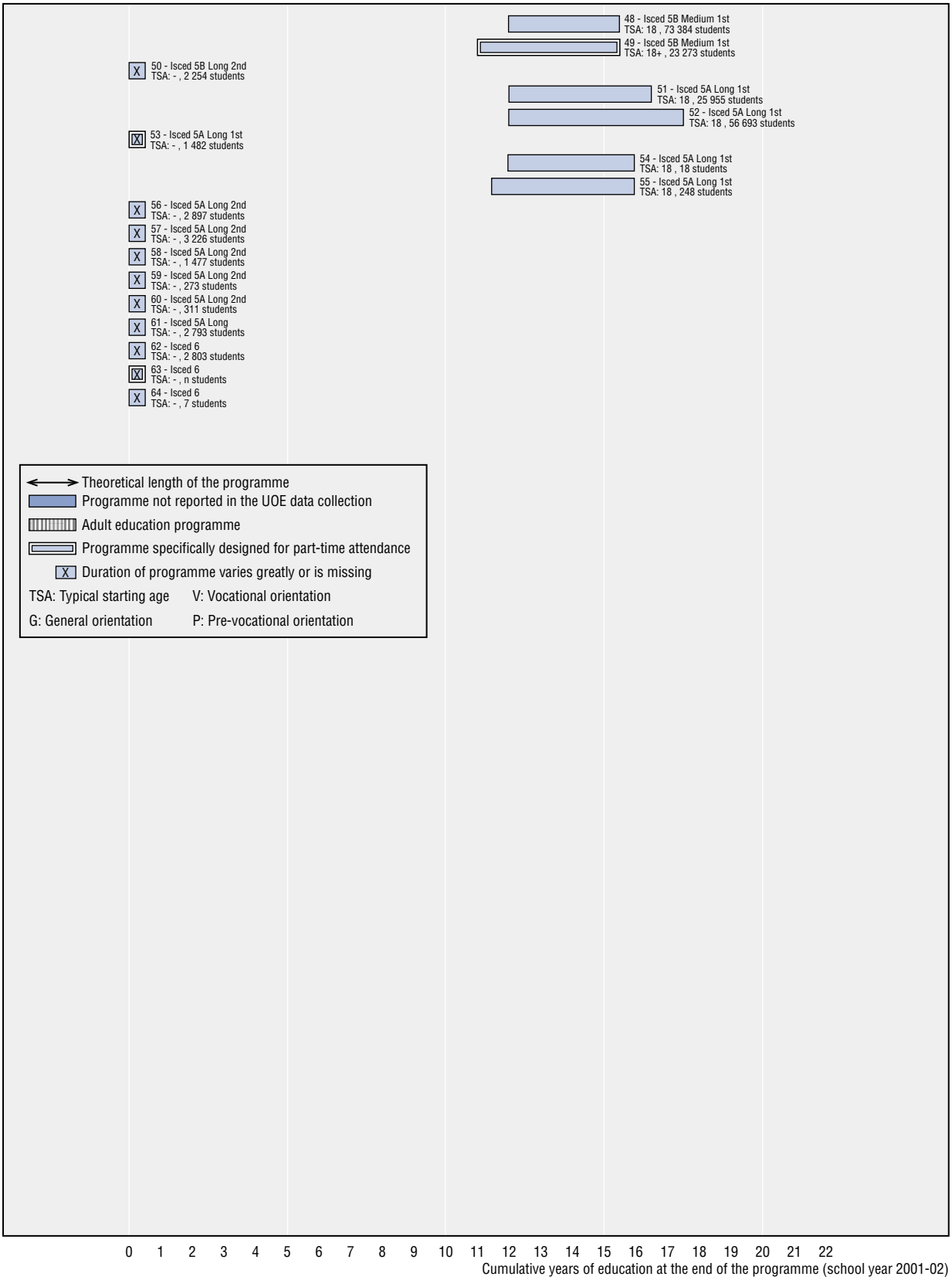
01 – Kindergarten
(Kindergartens)
02 – Vorschulstufe
(Pre-primary stage (of primary schools))
03 - Sonderschule (inkl. Heilstättenschulen), Schulstufen 1-4
(Special school, stages 1-4)
04 - Volksschule, 1-4.Schulstufe
(Primary school)
05 - Allgemeinbildende Statutschulen, 1.-4. Schulstufe
(General schools of own statutory right, stages 1-4)
06 - Allgemeinbildende höhere Schule, Unterstufe (inkl. Übergangsstufe)
(Secondary academic school, stages 5-8)
07 - Volksschule, Oberstufe
(Primary school, stages 5-8)
08 - Sonderschule (inkl. Heilstättenschulen), Schulstufen 5-8
(Special school, stages 5-8)
09 - Hauptschule
(Main general secondary school)
10 – Realschule
(Realschule (programme similar to main general secondary school plus two additional years of education))
11 - Allgemeinbildende Statutschulen, 5.-8. Schulstufe
(General schools of own statutory right, stages 4-8)
12 – Externistenprogramme
(Programmes outside the regular school system, leading to certificates of the regular system)
13 - Internationale Schulen
(International schools)
14 - Haushaltungs-, Hauswirtschaftsschulen
(One-year and two-year home-economic schools)
15 - Land- und forstwirtschaftliche mittlere Schulen (1jährig, schulpflichtersetzend)
(Pre-vocational schools for agriculture and forestry)
16 - Polytechnische Schule
(Pre-vocational year)
17 - Sonderschule (inkl. Heilstättenschulen), 9. Schulstufe
(Special school, stage 9)
18 – Pflegehilfelehrgänge
(Courses for the training of auxiliary nurses)
19 - Schulen zur Ausbildung von Leibeserziehern und Sportlehrern
(Courses for the training of sports instructors)
20 - Berufsbildende Statut-Schulen (soweit nicht anders zugeordnet)
(Private schools of own statutory right (as not allocated otherwise))
21 - Land- und forstwirtschaftliche mittlere Schulen (weiterführend)
(Vocational schools for agriculture and forestry)
22 - Mittlere berufsbildende Schulen
(Secondary technical and vocational schools))
23 - Lehre (Duale Ausbildung)
(Apprenticeship)
24 - Allgemeinbildende höhere Schulen, Oberstufe
(Secondary academic school)
25 - Allgemeinbildende Statutschulen, 9. Schulstufe und höher
(General schools of own statutory right, stages 9 and higher)
26 - Höhere berufsbildende Schulen für Berufstätige
(Secondary technical and vocational colleges for adults)
27 - Allgemeinbildende höhere Schulen mit Berufsausbildung
(Secondary academic schools with vocational training)
28 - Höhere berufsbildende Schulen
(Secondary technical and vocational colleges)
29 - Allgemeinbildende höhere Schule für Berufstätige
(Secondary academic schools for adults)
30 – Speziallehrgänge
(Specialised courses)
31 - Sonderpädagogische Lehrgänge
(Special needs courses)
32 - Sonderausbildungen im gehobenen Dienst für Gesundheits- und Krankenpflege
(Courses in the field of nursing)
33 - Universitätslehrgänge (Maturaniveau, kürzer als 2 Jahre)
(University courses (short duration, for upper secondary graduates))
34 - Schulen für den medizinisch-technischen Fachdienst
(Secondary schools for medical services)
35 - Schulen für Gesundheits- und Krankenpflege
(Secondary schools for nursing)
36 – Aufbaulehrgänge
(Add-on courses)
37 - Meister- und Werkmeisterausbildung, Bauhandwerkerschulen
(Master craftsmen and foremen courses, courses for building workers)
38 - Kollegs
(Post-secondary courses in TVE (Technical and Vocational Education))
39 - Universitätslehrgänge (Maturaniveau, mindestens 2jährig)
(University courses (for upper secondary graduates))
40 - Kurzstudium
(Short vocationally oriented studies at universities and universities of the arts)
41 - Akademien der Lehrerbildung
(Post-secondary colleges for teacher training)
42 - Akademien des Gesundheitswesens
(Post-secondary colleges for medical services)
43 - Akademien für Sozialarbeit
(Post-secondary colleges for social work)
44 – Fachhochschulstudium
(Fachhochschulstudium (university education))
45 – Bakkalaureatstudium
(Bachelor-degree studies)
46 - Diplomstudium und Studium nach alter Studienvorschrift an Universitäten und Universitäten der Künste
(Studies at universities and universities of arts)
47 – Privatuniversitäten
(Private universities)
48 - Universitätslehrgänge (postgradual)
(University courses (at post-graduate level))
49 - Doktoratstudium (Zweitabschluß)
(Doctorate)

Belgium (Flemish Community)



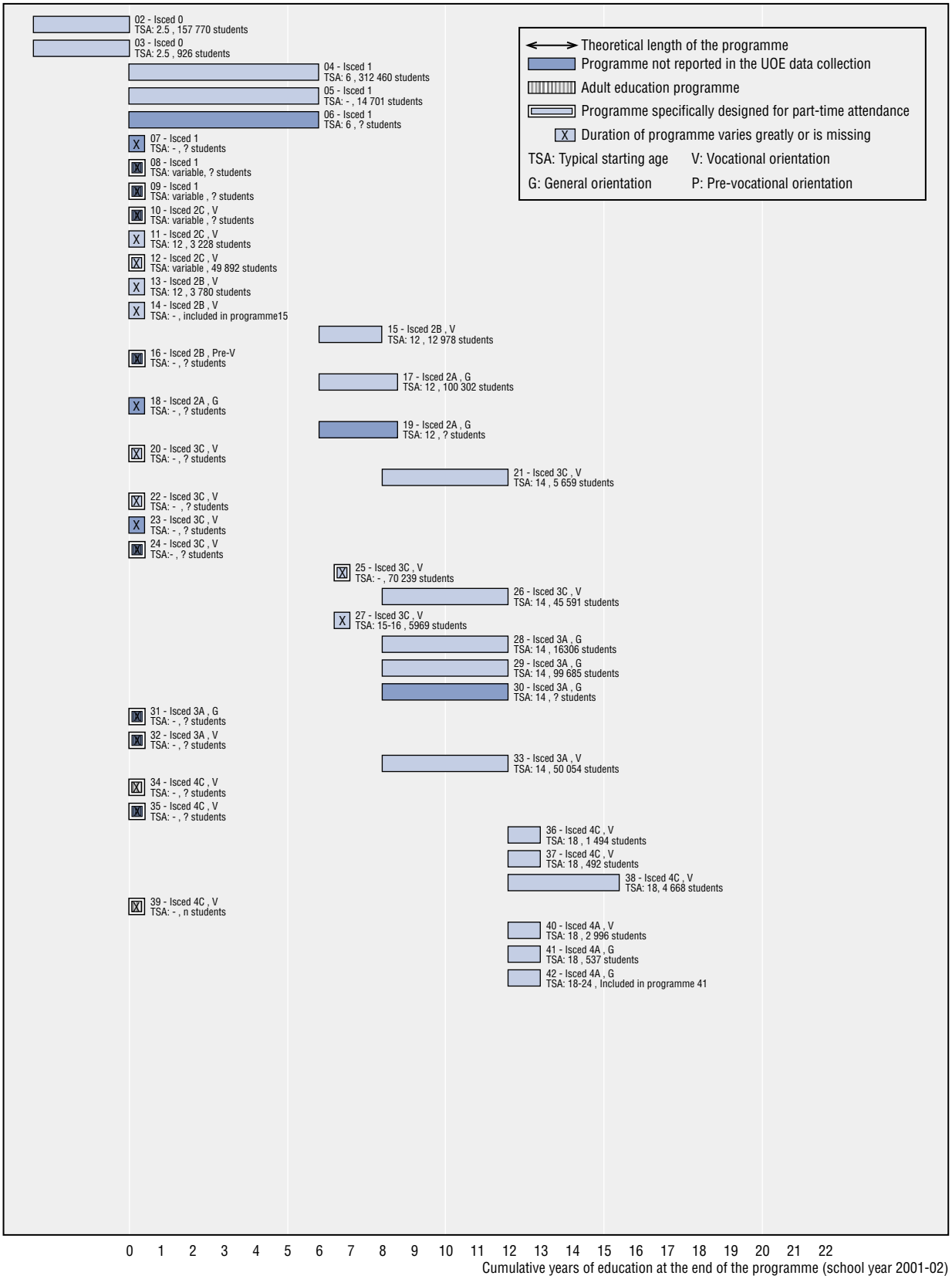
01 - Gewoon kleuteronderwijs
(Regular nursery education)
02 - Buitengewoon kleuteronderwijs
(Special nursery education)
03 - Europese en internationale scholen
(European and international schools)
04 - Gewoon lager onderwijs
(Regular primary education)
05 - Buitengewoon lager onderwijs
(Special primary education)
06 - Huisonderwijs
(Home education)
07 - Europese en internationale scholen
(European and international schools)
08 - Basiseducatie
(Adult basic education)
09 - Deeltijds kunstonderwijs –- lagere graad
(Part-time artistic education – lower degree)
10 - VDAB-beroepsopleidingen
(Vocational training focused on the labour market (organised by the Flemish Employment and Vocational Training Agency - VDAB))
11 - Buitengewoon secundair onderwijs – opleidingsvorm 1 en 2
(Special secondary education – training form 1 and 2)
12 - Sociaal-cultureel vormingswerk
(Social and cultural training)
13 - Buitengewoon secundair onderwijs – opleidingsvorm 3 – 1ste leerjaar
(Special secondary education – training form 3 – 1st year)
14 - Secundair onderwijs voor sociale promotie – LSBL en LSTL
(Social advancement secondary education: lower secondary vocational courses and lower secondary technical courses)
15 - Buitengewoon secundair onderwijs – opleidingsvorm 3 – 2de en 3de leerjaar
(Special secondary education – training form 3 – 2nd and 3rd year)
16 - Onthaalklas voor anderstalige nieuwkomers
(Reception class for immigrant school entrants)
17 - Gewoon secundair onderwijs – 1ste graad
(Regular secondary education – 1st stage)
18 - Buitengewoon secundair onderwijs – opleidingsvorm 4 – 1ste graad
(Special secondary education – training form 4 – 1st stage)
19 - Begeleid individueel studeren
(Supervised individual study (distance learning))
20 - Deeltijds kunstonderwijs – middelbare graad
(Part-time artistic education – middle degree)
21 - Gewoon secundair onderwijs – 2de graad en 1ste en 2de leerjaar van de 3de graad BSO
(Regular secondary education – 2nd stage and 1st and 2nd year of the 3rd stage BSO)
22 - Modulair secundair onderwijs
(Modular secondary education)
23 - Deeltijds beroepssecundair onderwijs 15-18-jarigen
(Part-time vocational secondary education for 15 to 18-years-olds)
24 - Deeltijds beroepssecundair onderwijs 18-25-jarigen
(Part-time vocational secondary education for 18 to 25-years-olds)
25 - Deeltijds zeevisserij-onderwijs
(Part-time offshore fishing secondary education)
26 - Vorming in de leertijd georganiseerd door het VIZO
(Apprenticeship training courses organised by 'VIZO' (Flemish Institute for the Self-Employed))
27 - Vormingsprogramma's voor de vervulling van de deeltijdse leerplicht
(Training programmes for compulsory education organised by recognized centres)
28 - Buitengewoon secundair onderwijs – opleidingsvorm 3 – 4de tot 6de leerjaar
(Special secondary education – training form 3 – 4th till 6th year)
29 - Buitengewoon secundair onderwijs – opleidingsvorm 4 – 2de graad en 1ste en 2de leerjaar van de 3de graad BSO
(Special secondary education – training form 4 – 2nd stage and 1st and 2nd year of the 3rd stage BSO)
30 - Secundair onderwijs voor sociale promotie – HSBL en HSTL
(Social advancement secondary education: upper secondary vocational courses and upper secondary technical courses)
31 - Gewoon secundair onderwijs – 2de graad en 1ste en 2de leerjaar van de 3de graad ASO
(Regular secondary education – 2nd stage and 1st and 2nd year of the 3rd stage ASO (ASO= general secondary education))
32 - Buitengewoon secundair onderwijs – opleidingsvorm 4 – 2de graad en 1ste en 2de leerjaar van de 3de graad ASO
(Special secondary education – training form 4 – 2nd stage and 1st and 2nd year of the 3rd stage ASO)
33 - Begeleid individueel studeren
(Supervised individual study (distance learning))
34 - Koninklijke School voor Onderofficieren
(Royal Academy for non-commisioned officiers)
35 - Gewoon secundair onderwijs – 2de graad en 1ste en 2de leerjaar van de 3de graad TSO en KSO
(Regular secondary education – 2nd stage and 1st and 2nd year of the 3rd stage TSO (TSO= technical secondary education) and KSO (KSO= Artistic secondary education))
36 - Buitengewoon secundair onderwijs – opleidingsvorm 4 – 2de graad en 1ste en 2de leerjaar van de 3de graad TSO en KSO
(Special secondary education – training form 4 – 2nd stage and 1st and 2nd year of the 3rd stage TSO and KSO)
37 - Deeltijds kunstonderwijs – hogere graad
(Part-time artistic education – higher degree)
38 - Gewoon secundair onderwijs – 3de leerjaar van de 3de graad TSO, KSO and BSO (Regular secondary education – 3rd year of the 3rd stage TSO, KSO and BSO (BSO not giving access to higher education; TSO= technical secondary education; KSO=artistic secondary education; BSO=vocational secondary education))
39 - Gewoon secundair onderwijs – 4de graad BSO
(Regular secondary education – 4th stage BSO)
40 - Ondernemersopleiding georganiseerd door het VIZO
(Entrepreneurial training courses organised by 'VIZO' (VIZO=Flemish Institute for the Self-Employed))
41 - Buitengewoon secundair onderwijs – opleidingsvorm 4 – 3de leerjaar van de 3de graad TSO, KSO en BSO
(Special secondary education – training form 4 – 3rd year of the 3rd stage BSO, TSO and KSO)
42 - Secundair onderwijs voor sociale promotie – ASBL
(Social advancement secondary education: additional secondary vocational courses)
43 - Deeltijds kunstonderwijs – specialisatiegraad
(Part-time artistic education – specialisation degree)
44 - Landbouwopleidingen
(Agricultural training)
45 - Gewoon secundair onderwijs – 3de leerjaar van de 3de graad ASO
(Regular secondary education – 3rd year of the 3rd stage ASO)
46 - Voorbereidende Divisie van de Koninklijke Militaire School
(Introductory/preparatory year for students at the Royal Military Academy)
47 - Gewoon secundair onderwijs – 3de leerjaar van de 3de graad BSO
(Regular secondary education – 3rd year of the 3rd stage BSO giving access to tertiary education)

Belgium (Flemish Community) *(Continued)*



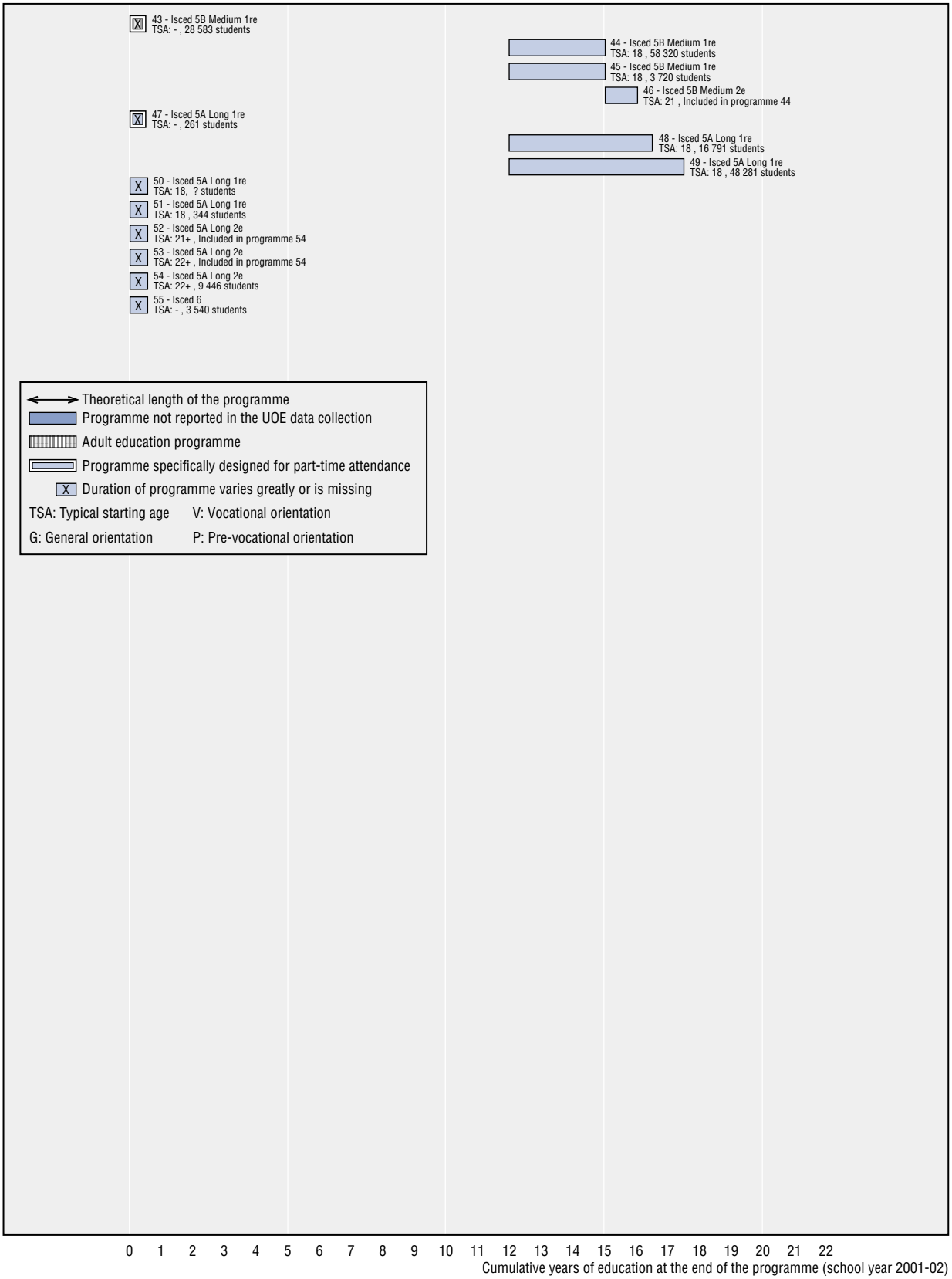
48 - Hogescholenonderwijs van 1 cyclus
(1-cycle higher education provided by colleges of higher education)
49 - Hoger onderwijs voor sociale promotie
(Social advancement higher education)
50 - Voortgezette opleidingen volgend op hogescholenonderwijs van 1 cyclus
(Advanced studies after 1-cycle higher education provided by colleges of higher education)
51 - Hogescholenonderwijs van 2 cycli
(2-cycle higher education provided by colleges of higher education)
52 - Basisopleidingen aan de universiteiten
(Basic academic education, 2 cycles)
53 - Basisopleidingen aan de Open Universiteit
(Basic academic education, Open University)
54 - Basisopleidingen aan de Universitaire Faculteit voor Protestantse Godsgeleerdheid
(Basic academic education, Protestant Theological Faculty)
55 - Koninklijke Militaire School
(Royal Military Academy)
56 - Gediplomeerde in de aanvullende studies
(Academic degree in the supplementary studies)
57 - Gediplomeerde in de gespecialiseerde studies
(Academic degree in the specialist studies)
58 - Academische lerarenopleiding
(Academic teacher training)
59 - Voortgezette opleidingen aan het Instituut voor Tropische Geneeskunde
(Advanced studies at the Institute for Tropical Science)
60 - Voortgezette opleidingen volgend op hogescholenonderwijs van 2 cycli
(Advanced studies after 2-cycle higher education provided by 'hogescholen')
61 - Doctoraatsopleiding
(Doctoral training)
62 - Doctoraat
(Doctorate)
63 - Doctoraat aan het Instituut voor Tropische Geneeskunde
(Doctorate at the Insititute for Tropical Science)
64 - Doctoraat aan de Universitaire Faculteit voor Protestantse Godsgeleerdheid
(Doctorate)

Belgium (French Community)



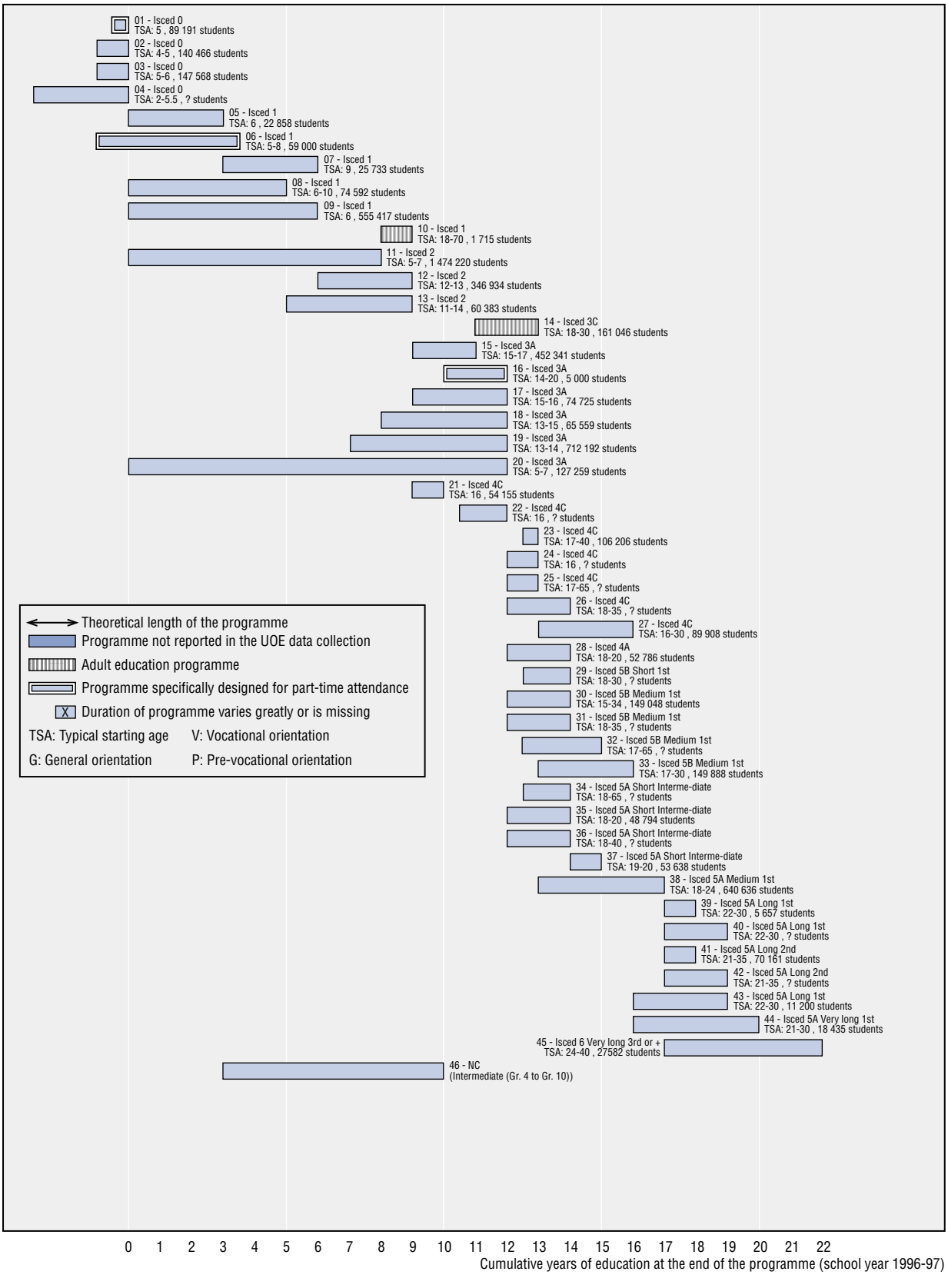
02 - Enseignement maternel ordinaire
(regular pre-primary education)
03 - Enseignement maternel spécial
(special pre-primary education)
04 - Enseignement primaire ordinaire
(regular primary education)
05 - Enseignement primaire spécial
(special primary education)
06 - Enseignement à domicile
(home education)
07 - Enseignement à distance
(distance learnnig)
08 - Alphabétisation des adultes
(adult basic education)
09 - Filière préparatoire de l'enseignement artistique à horaire réduit
(part-time artistic education)
10 - Formation du FOREM et IBFFP; éducation des adultes - programmes non organisés par un Ministère
(Vocational training focused on the labour market)
11 - Enseignement spécial de forme 1 ou 2
(Special secondary education)
12 - Enseignement de promotion sociale secondaire inférieur
13 - Enseignement spécial de Forme 3 : 1ere Phase
(Special secondary education)
14 - 1re année primo-arrivants
15 - 1re accueil et 2e prof (1er degré différencié) de l'enseignement ordinaire ou spécial de forme 4
16 - Filière de formation de l'enseignement artistique à horaire réduit
17 - 1er degré commun de l'enseignement ordinaire ou spécial de forme 4
18 - Enseignement à distance
(Distance learning)
19 - Enseignement à domicile
(home education)
20 - Filière de qualification de l'enseignement artistique à horaire réduit
21 - Enseignement spécial de forme 3 Phase 2 et 3
(Special secondary education form 3)
22 - Apprentissage des classes moyennes
23 - Formation du FOREM et de l'IBFFP
24 - Formation continue des adultes
25 - Enseignement de promotion sociale : secondaire supérieur
26 - 2e et 3e degrés (hors 7e année) de l'enseignement professionnel secondaire ordinaire ou spécial de forme 4
27 - Enseignement secondaire en alternance
28 - 2e et 3e degrés de l'enseignement secondaire technique ou artistique de transition ordinaire ou spécial de forme 4
29 - 2e et 3e degrés de l'enseignement général secondaire ordinaire ou spécial de forme 4
30 - Enseignement à domicile
(home education)
31 - Enseignement à distance
(Learning distance)
32 - Fillière de transition de l'enseignement artistique à horaire réduit
33 - 2e et 3e années de l'enseignement secondaire technique ou artistique de qualification (hors 7e année) ordinaire ou spécial de Forme 4
34 - Formation des chefs d'entreprises
35 - Formation professionnelle des personnes travaillant dans l'agriculture
36 - La 7e année de l'enseignement professionnel secondaire (7P/a)
37 - La 7e année de l'enseignement technique de qualification secondaire
38 - Le 4e degré professionnel complémentaire (y compris année préparatoire)
39 - professionnel complémentaire de promotion sociale
40 - 7e année de l'enseignement professionnel secondaire (7P/b et 7P/c, donnant accès au CESS)
41 - 7e année préparatoire à l'enseignement supérieur
42 - Division préparatoire à l'Ecole Royale Militaire

Belgium (French Community) *(Continued)*



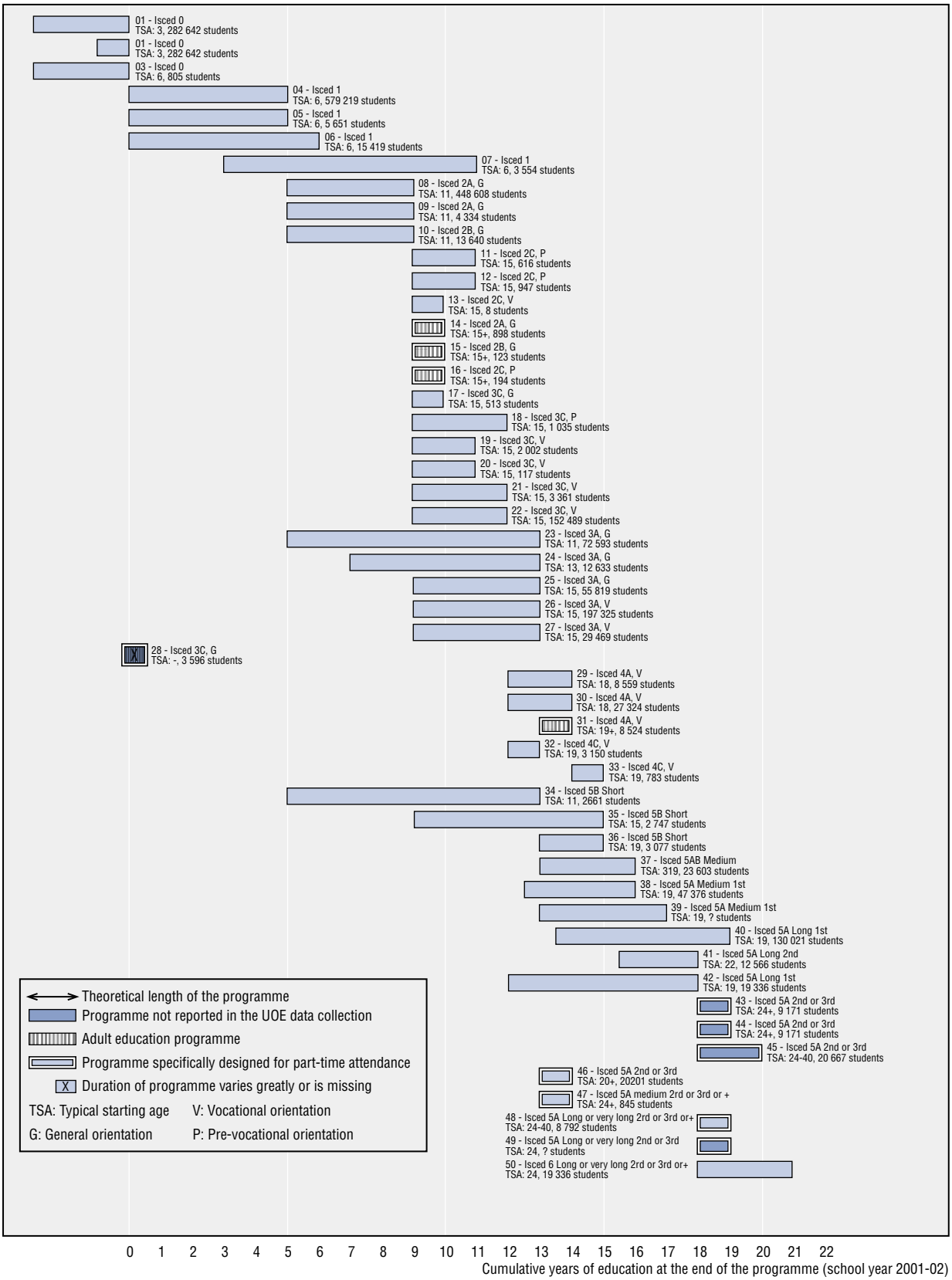
43 - Enseignement supérieur de promotion sociale de type court
44 - Enseignement supérieur de type court
45 - Enseignement artistique supérieur (musique et arts plastiques)
46 - Enseignement supérieur de type court complémentaire
47 - Enseignement supérieur de promotion sociale de type long
48 - Enseignement supérieur de type long
49 - Enseignement universitaire (1er et 2e cycle)
50 - Enseignement artistique supérieur de type long
51 - Ecole Royale Militaire
52 - Agrégation de l'enseignement secondaire supérieur
53 - Enseignement supérieur de type long : année complémentaire
54 - Enseignement universitaire : année complémentaire et 3e cycle
55 - Enseignement universitaire : doctorat et Agrégation de l'enseignement supérieur

Canada



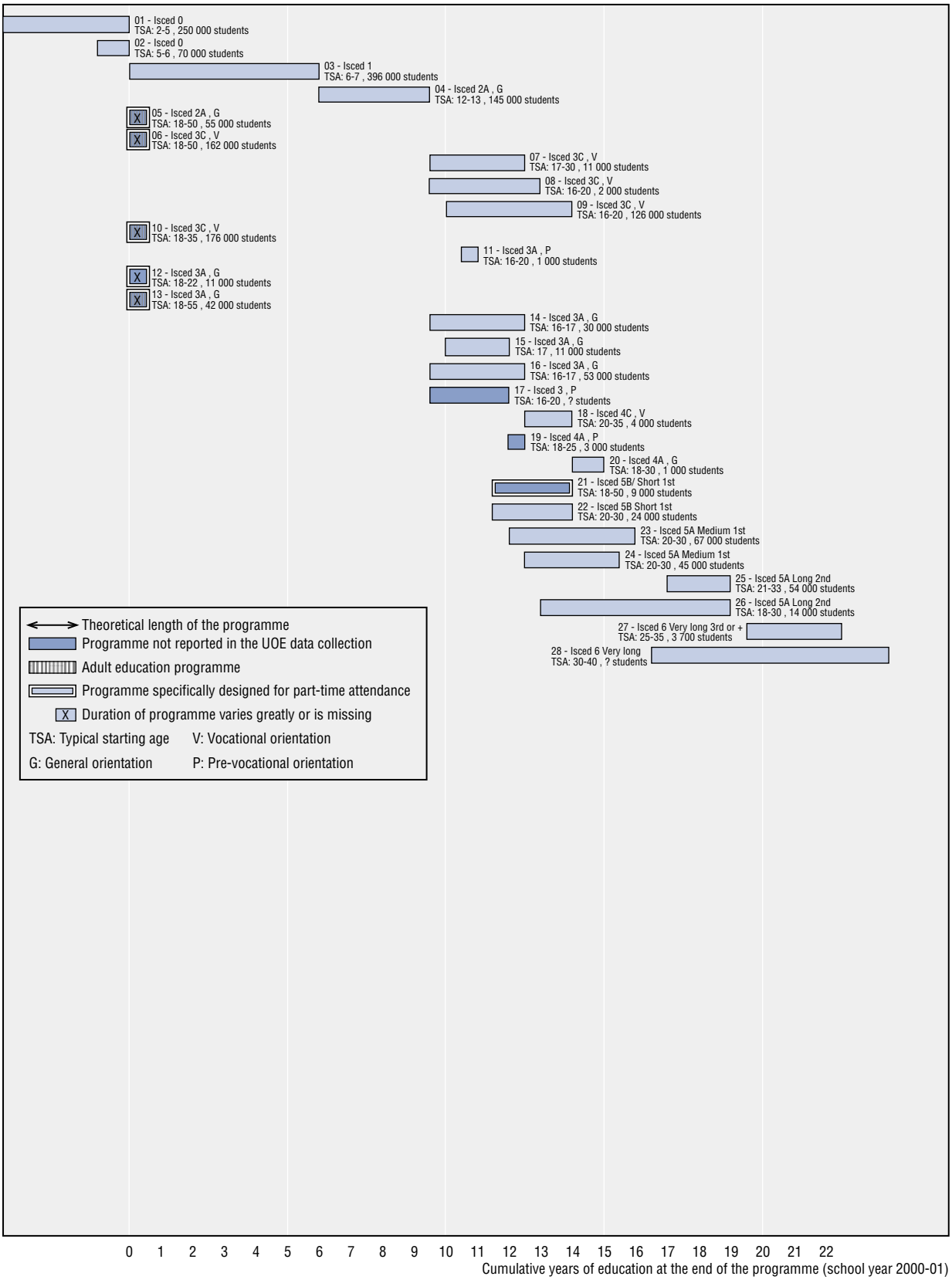
01 - Preschool
02 - indergarten/Jr. K.
03 - Kindergarten
04 - Pre-kindergarten/Nursery
05 - Primary (3 years)
06 - Primary (Kinder. to Gr. 3)
07 - Elementary (3 years)
08 - Grades 1 to 5
09 - Primary (6 years)
10 - Adult basic academic upgrading(< 1 year)
11 - Elementary (8 years)
12 - Secondary – 1st stage/Jr. H.S.
13 - Grades 6 to 9
14 - Adult basic academic upgrading
15 - Secondary 2nd stage
16 - Independent study and mature student programme
17 - Secondary – Sr. H.S.
18 - Secondary (4 years)
19 - Secondary (5 years)
20 - Elementary/Secondary (12 years)
21 - Vocational training – other short AFP (1 year)
22 - Vocational training (1.5 year)
23 - Vocational certificate programme (< 1 year)
24 - Vocational training AVS (1 year)
25 - Trade/vocational certificate (1 year)
26 - Occupational/technology programme
27 - Apprenticeship
28 - University transfer/Quebec
29 - Vocational Diploma (18 months)
30 - College diploma programme (2-3 years)
31 - Occupational/technology programme
32 - Vocational Diploma (27 months)
33 - College diploma programme (3-4 years)
34 - Academic certificate programme (1-2 years)
35 - University transfer
36 - University Diploma Programme
37 - University Certificate (1 year)
38 - Bachelor's degree (3-5)
39 - Post-graduate certificate programme (1 year)
40 - Post-graduate certificate programme (2 years)
41 - Master's (1-2 years)
42 - Master's (2-3 years)
43 - First Professional degree (1-2 years)
44 - First Professional Degree (3-5 years)
45 - (Doctorate)

Czech Republic



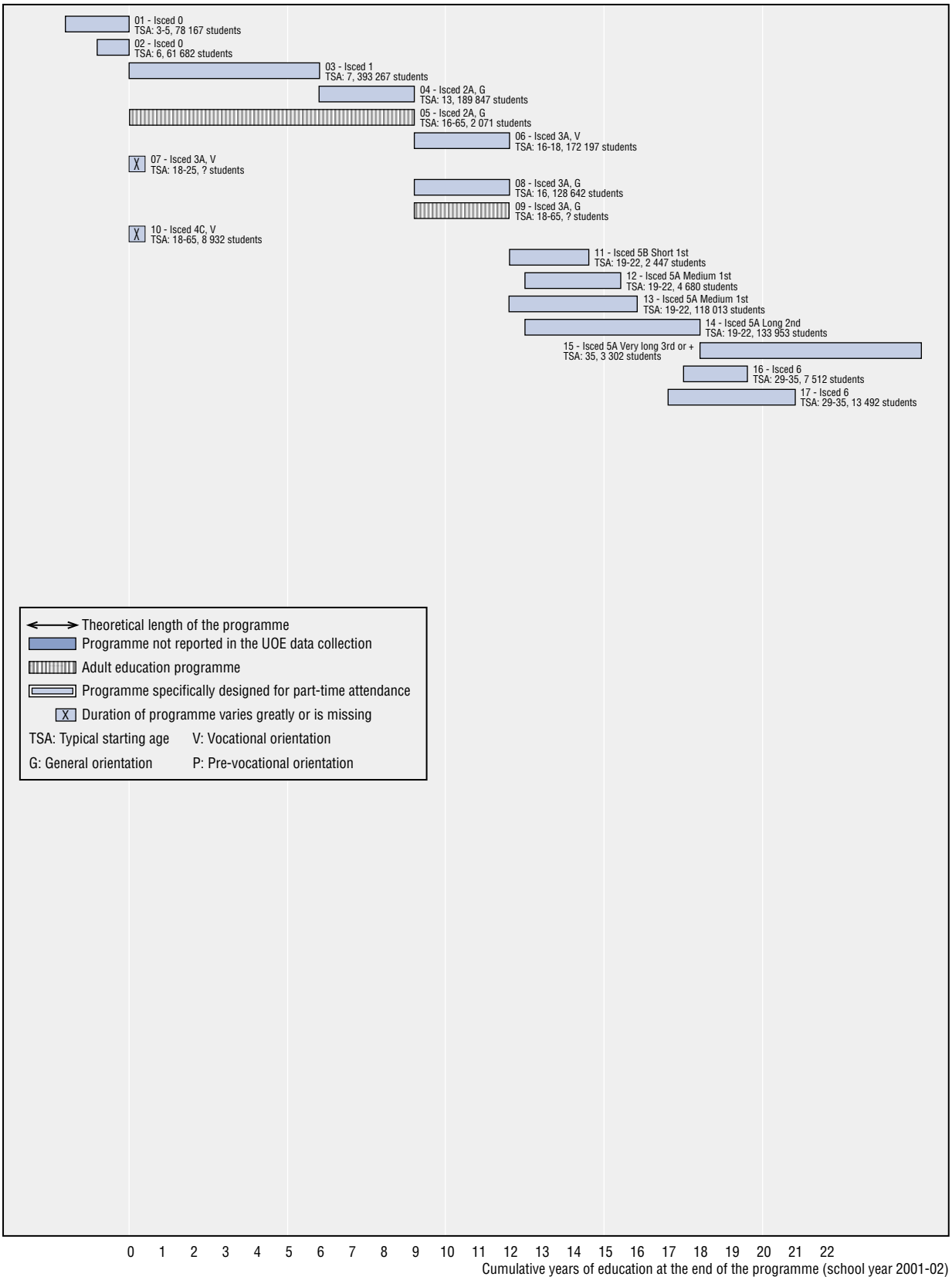
01 - Mate ská škola
(Kindergarten)
02 - P ípravné t ídy pro d ti ze sociokulturn znevýhodn ného prost edí
(Preparatory classes for socially disadvantaged children)
03 - P ípravný stupe
(Auxiliary school – preparatory stage)
04 - Základní škola – 1. stupe
(Basic school – 1st stage)
05 - Speciální základní škola – 1. stupe
(Special basic school – 1st stage)
06 - Zvláštní škola – 1. a 2. stupe
(Remedial school – 1st and 2nd stages)
07 - Pomocná škola – nižší, st ední, vyšší stupe a rehabilita ní t ídy
(Auxiliary school – lower, middle and upper stages)
08 - Základní škola – 2. stupe
(Basic school – 2st stage)
09 - Speciální základní škola – 2. stupe
(Special basic school – 2st stage)
10 - Zvláštní škola – 3. stupe
(Remedial school – 3rd stage)
11 - Pracovní stupe pomocné školy
(Auxiliary school – working stage)
12 - Praktická škola 1-2letá
(1-2 year special vocational school)
13 - Samostatné t ídy odborných u ilišt pro p ípravu pro výkon jednoduchých profesí
(Vocational school – programmes for simple appretices fields)
14 - Kursy pro doplnění základního vzd lání
(Courses complementary to basic education)
15 - Kursy pro doplnění vzd lání poskytovaného zvláštní školou
(Courses complementary to education at schools for mentally handicapped (remedial schooling programme))
16 - Kursy pro doplnění vzd lání poskytovaného pomocnou školou
(Courses complementary to education at auxiliary school)
17 - Integrovaný 1. ro ník
(Integrated 1st grade)
18 - Praktická škola 3letá
(3year special vocational school)
19 - U ilišt – obory se zvláš upravenými u ebními plány
(Vocational school – programmes with specially modified curriculum)
20 - Odborné u ilišt – obory se zvláš upravenými u ebními plány
(Vocational school – programmes with modified curriculum)
21 - St ední odborná škola, studium bez maturity
(Secondary technical, courses school without maturita)
22 - St ední odborné u ilišt , studium bez maturity
(Secondary vocational school, courses without maturita)
23 - 8leté gymnázium
(Gymnasium – 8 years)
24 - 6leté gymnázium
(Gymnasium – 6 years)
25 - 4leté gymnázium, lyceum
(Gymnasium, lyceum – 4 years)
26 - St ední odborná škola, studium s maturitou
(Secondary technical school, courses with maturita exam)
27 - St ední odborné u ilišt , studium s maturitou
(Secondary vocational school, courses with maturita)
28 - Studium jednotlivých p edmet
(Study of selected subjects)
29 - Nástavbové studium na SOŠ
(Follow-up courses)
30 - Nástavbové studium na SOU
(Follow-up courses)
31 - Jazyková škola (pomaturitní studium)
(Language schools with certificate of Ministry of education (post-secondary courses))
32 - Rekvalifikační kursy na SOŠ a SOU
(Courses for retraining vocational type)
33 - Rekvalifikační kursy na SOU s výu ním listem
(Courses for retraining, vocational type with certificate on apprenticeship)
34 - Konzervato , 8leté studium
(Conservatoire, 8 years)
35 - Konzervato , 6leté studium
(Conservatoire, 6 years)
36 - Vyšší odborná škola
(Higher technical school)
37 - Vyšší odborná škola
(Higher technical school)
38 - Bakalá ské univerzitní studium
(Bachelor university study)
39 - U itelství pro 1.stupe základní školy
(teacher training for primary)
40 - Magisterské studium
(Master university study)
41 - Magisterské navazující studium
(Master university study)
42 - Magisterské studium
(Master university study)
43 - Další vzd lávání na vysoké škole: získání pedagogické kvalifikace
(Universities: pedagogical education - second qualification)
44 - Další vzd lávání na vysoké škole: rozší ení pedagogické kvalifikace
(Universities: extension of pedagogical education - 2nd or 3rd qualification)
45 - Další vzd lávání na vysoké škole: jiné formy studia (nepedagogické)
(Universities: non pedagogical education - second qualification)
46 - Další vzd lávání na vysoké škole: pro absolventy SŠ
(Universities: the second qualification for graduates of upper secondary schools)
47 - Další vzd lávání na vysoké škole: pro bakalá e a absolventy VOŠ
(Universities: the second qualification for bachelors and graduates of higher technical schools)
48 - Další vzd lávání na vysoké škole: pro absolventy magisterských studijních program .
(Universities: the second qualification for masters)
49 - Státní rigorózní zkouška
(State rigorous exam)
50 - Doktorské studium
(Doctoral university study)

Denmark



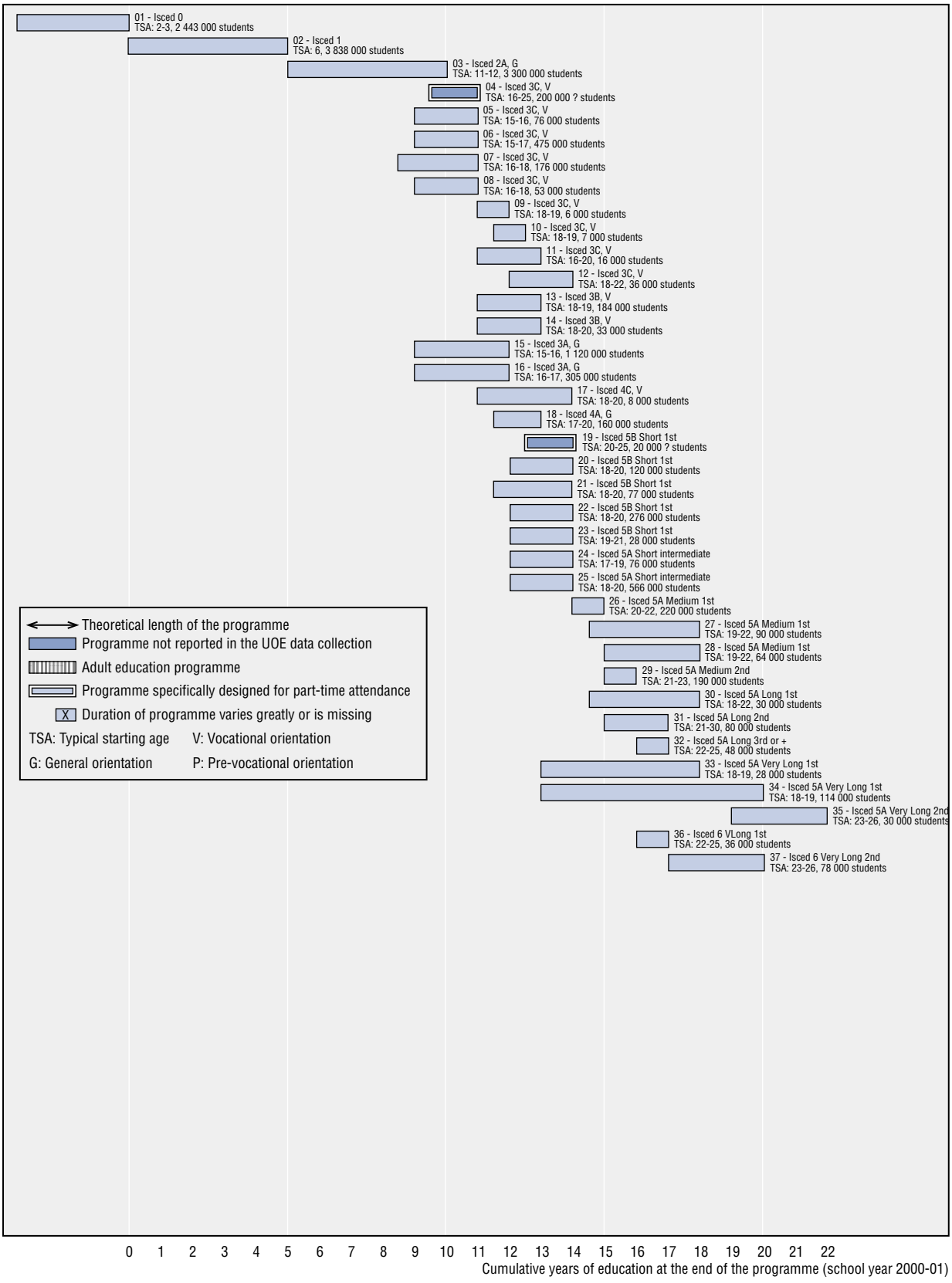
01 - Børnehave
(kindergarten)
02 - Børnehaveklasse
(pre-school class in primary school)
03 - Grundskolen 1.-6. klasse
(primary level 1st-6th grade)
04 - Grundskolen 7.-10. Klasse
(lower secondary level 7th-10th grade)
05 - Almen voksenuddannelse (AVU)
(general adult education 9th-10th grade)
06 - EUD-enkeltfag
(upper secondary, open vocational education)
07 - Social- og sundhedsuddannelserne (SOSU)
(social and health service assistant)
08 - Landbrugs-, gartner- og skovbrugsuddannelser
(agriculture, horticulture, forestry)
09 - Erhvervsfaglige uddannelser (carpenter, blacksmith, electrician)
(carpenter, blacksmith, electrician upper secondary, vocational education)
10 - Abejdsmarkedsuddannelserne (AMU)
(adult vocational training)
11 - Håndarbejds- og husholdningsskoler
(home economics and needlework)
12 - Folke- og ungdoms Højskoler
(folk-and youth high-school)
13 - HF-enkeltfag, studentereksamensfag
(higher prepatory examination, single subject education)
14 - Højere teknisk eksamen (HTX), Højere handelseksamen (HHX)
(upper sec. higher technical ex. higher commercial ex.)
15 - Højere Forberedelseseksamen (HF)
(HF higher prepatory examination)
16 - Gymnasium
(upper secondary school leaving examination)
17 - Fri ungdomsuddannelse
(indidividual organised youth education)
18 - Korte videregående uddannelser af mindre end 2 års varighed, herunder teknikere
(technician <2 years)
19 - TIF- kurser (værkstedskurser)
(practical admitance courses for programmes at 5B)
20 - Adgangskursus til ingeniøruddannelserne Gymnasiale suppleringskurser
(admittance courses for programmes at 5A and 5B)
21 - Tertiary ed. Open education
(Tertiary ed. Open education post-secondary, open education)
22 - Korte videregående uddannelser af mere end 2 års varighed, herunder teknikere
(tertiary ed. short cycle, including technician >2 years)
23 - Mellemlange videregående uddannelser
(tertiary ed., medium cycle)
24 - Bachelor
(Bachelor)
25 - Lange videregående uddannelser (kandidatuddannelser)
(tertiary ed., long cycle)
26 - Lange videregående uddannelser
(tertiary ed., long cycle museum conservator, ex. from academi of music)
27 - Doktorgrad
(doctoral programmes)
28 - Doktorgrad
(Doctorate)

Finland



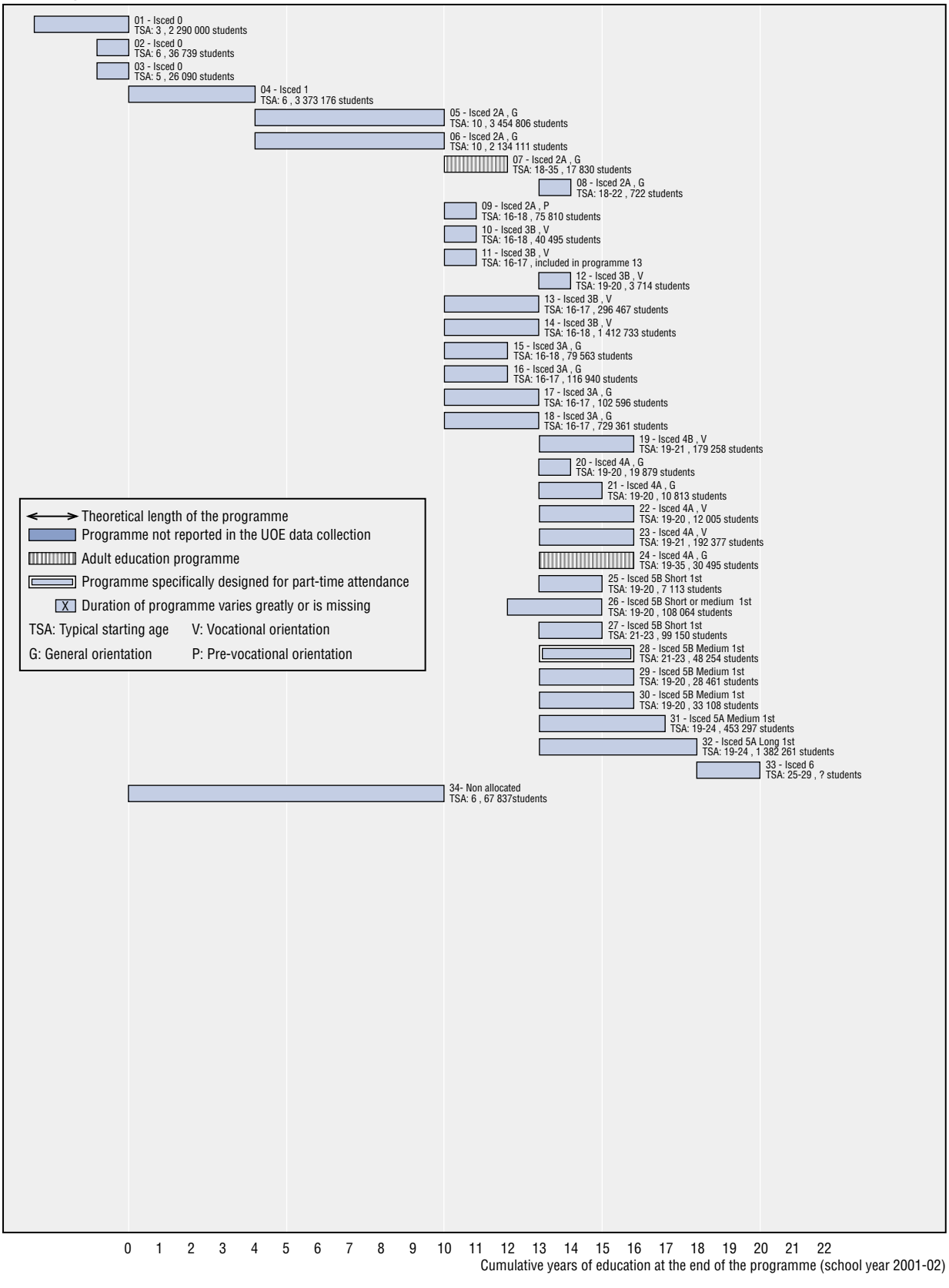
01 - 3-5-v. lapset päiväkodeissa
(Kindergartens (3 to 5-year-old children), including special education)
02 - 6-v. lasten esiopetus
(Pre-primary education for 6-year-old children in kindergartens and comprehensive schools, including special education)
03 - Peruskoulun luokat 1-6
(Comprehensive school grades 1-6, including special education)
04 - Peruskoulun luokat 7-9 (10)
(Comprehensive school grades 7-9 (10), including special education)
05 - Peruskoulun koko oppimäärän suorittamiseen tähtäävä koulutus aikuisopiskelijoille
(Comprehensive school programmes for adults (leading to a leaving certificate from comprehensive school))
06 - Ammatillinen perustutkinto
(Upper secondary vocational programmes (including apprenticeship programmes, programmes preparing for skills examinations and special education))
07 - Ammattitutkinto
(Upper secondary vocational programmes preparing for further vocational qualifications (including apprenticeship programmes))
08 - Lukio, ylioppilastutkinto
(Upper secondary general programmes)
09 - Lukion koko oppimäärän suorittamiseen tähtäävä koulutus aikuisopiskelijoille
(Upper secondary general programmes for adults (leading to a matriculation examination))
10 - Erikoisammattitutkinto
(Vocational programmes preparing for specialist vocational qualifications (including apprenticeship programmes))
11 - Ammatillinen opistoasteen tutkinto
(Vocational college programmes)
12 - Alemmat korkeakoulututkinnot, kandidaatin tutkinnot
(Lower university programmes)
13 - Ammattikorkeakoulu (AMK)
(Polytechnic programmes)
14 - Ylemmät korkeakoulututkinnot, maisterin tutkinnot
(Higher university programmes)
15 - Erikoislääkärit, erikoishammaslääkärit, erikoiseläinlääkärit
(Specialists in medicine, dentistry, veterinary)
16 - Lisensiaatti
(Doctorate programmes: licentiate)
17 - Tohtori
(Doctorate programmes: doctor)

France



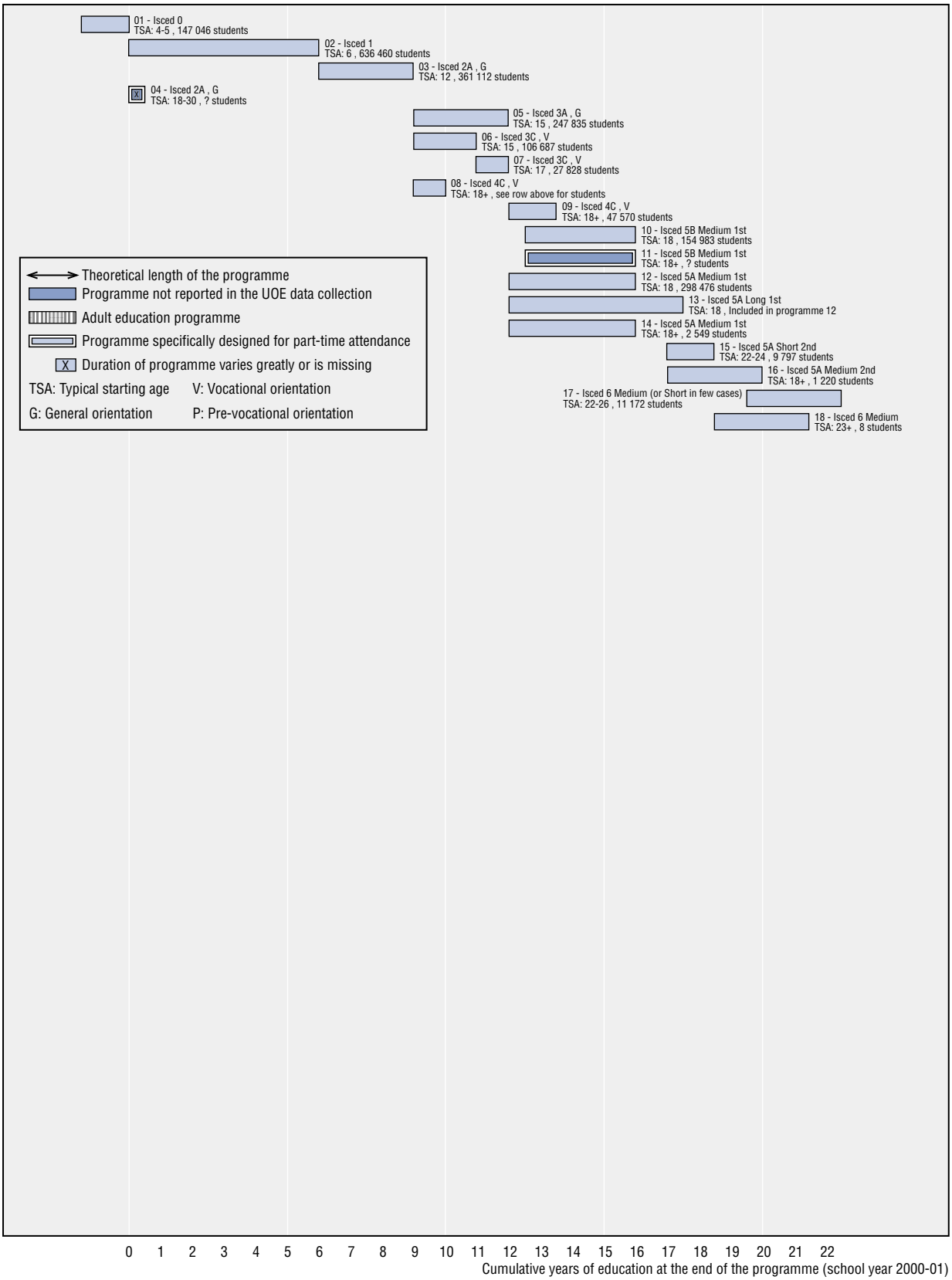
01 - Enseignement préélémentaire
(Pre-school education)
02 - Enseignement primaire
(Primary education)
03 - Enseignement du premier cycle du second degré – Collège
(Secondary education (1st cycle))
04 - Enseignement dans le cadre de contrat de qualification (niveau enseignement secondaire)
(Vocational training for young people without qualification (secondary level education))
05 - Enseignement de second cycle professionnel du second degré (sous statut scolaire)
(Secondary education (2nd cycle), vocational training (under school statute))
06 - Enseignement de second cycle professionnel du second degré (sous statut scolaire)
(Secondary education (2nd cycle), vocational training (under school statute))
07 - Enseignement de second cycle professionnel du second degré (en apprentissage)
(Secondary education (2nd cycle), vocational training, (programs combining school and labour market))
08 - Enseignement de second cycle professionnel du second degré (en apprentissage)
(Secondary education (2nd cycle), vocational training, (programs combining school and labour market))
09 - Enseignement de second cycle professionnel du second degré (sous statut scolaire)
(Secondary education (2nd cycle), vocational training, second level (under school statute))
10 - Enseignement de second cycle professionnel du second degré (en apprentissage)
(Secondary education (2nd cycle), vocational training, second level (programs combining school and labour market))
11 - Enseignement des écoles sanitaires et sociales (specific schools)
(Schools of health and social (specific schools))
12 - Enseignement de second cycle professionnel du second degré (en apprentissage)
(Secondary education (2nd cycle), vocational training, second level (programs combining school and labour market))
13 - Enseignement de second cycle professionnel du second degré (sous statut scolaire)
(Secondary education (2nd cycle), vocational training, second level (under school statute))
14 - Enseignement de second cycle professionnel du second degré (en apprentissage)
(Secondary education (2nd cycle), vocational training, second level (programs combining school and labour market))
15 - Enseignement de second cycle général du second degré
(Secondary education (2nd cycle), general)
16 - Enseignement de second cycle technologique du second degré
(Secondary education (2nd cycle), technology)
17 - Enseignement des écoles sanitaires et sociales
(Schools of health and social (specific schools))
18 - Enseignement pré-universitaire
(Pre-university education)
19 - Enseignement dans le cadre de contrat de qualification (niveau enseignement supérieur)
(Vocational training for young people without qualification (level higher education))
20 - Enseignement en institut universitaire de technologie (IUT)
(Specific vocational training (university))
21 - Enseignement d'écoles supérieures spécialisées (enseignement court, conduisant au niveau bac +2 ou bac +3)
(Courses in specialized higher schools (short teaching, leading to the level bac+2 or bac+3) (specific schools))
22 - Enseignement des classes des sections de techniciens supérieurs (sous statut scolaire)
(Courses in the classes of the sections of high-level techniciens (under school statute))
23 - Enseignement des classes des sections de techniciens supérieurs (en apprentissage)
(Courses in the classes of the sections of high-level techniciens (programs combining school and labour market))
24 - Enseignement des classes préparatoires aux grandes écoles (CPGE)
(Courses in the preparatory classes at "grandes écoles" (specific general training))
25 - Enseignement de premier cycle des études universitaires
(University education, 1st cycle)
26 - Enseignement de deuxième cycle des études universitaires
(University education, 2nd cycle, 1st year)
27 - Enseignement des écoles d'ingénieur
(Higher engineering school)
28 - Enseignement des écoles de commerce
(Higher business school)
29 - Enseignement de deuxième cycle des études universitaires
(University education, 2nd cycle, 2nd year)
30 - Diverses formations: architecture, études vétérinaires, art, etc.. Ecoles supérieures spécialisées (conduisant au niveau bac +4 ou bac+5)
(Various training: architect, veterinary surgeon, art, etc. Specialized higher schools (leading to the level bac+4 or bac+5))
31 - Enseignement en institut universitaire de formation des maîtres (IUFM)
(Teaching in university institute of training of Masters (university departement))
32 - Enseignement de troisième cycle des études universitaires
(University education, 3rd cycle)
33 - Enseignement dans les universités qui comporte la spécialité de formation pharmacie
(Teaching in universities with a pharmacy speciality)
34 - Enseignement dans les universités qui comporte la spécialité de formation médecine et odonthologie
(Teaching in universities with medicine and odonthology specialities)
35 - Enseignement de spécialisation des métiers de la santé
(Teaching of health specialization)
36 - Enseignement de troisième cycle des études universitaires
(University education, 3rd cycle, doctorate)
37 - Enseignement de troisième cycle des études universitaires
(University education, 3rd cycle, 1st year)

Germany



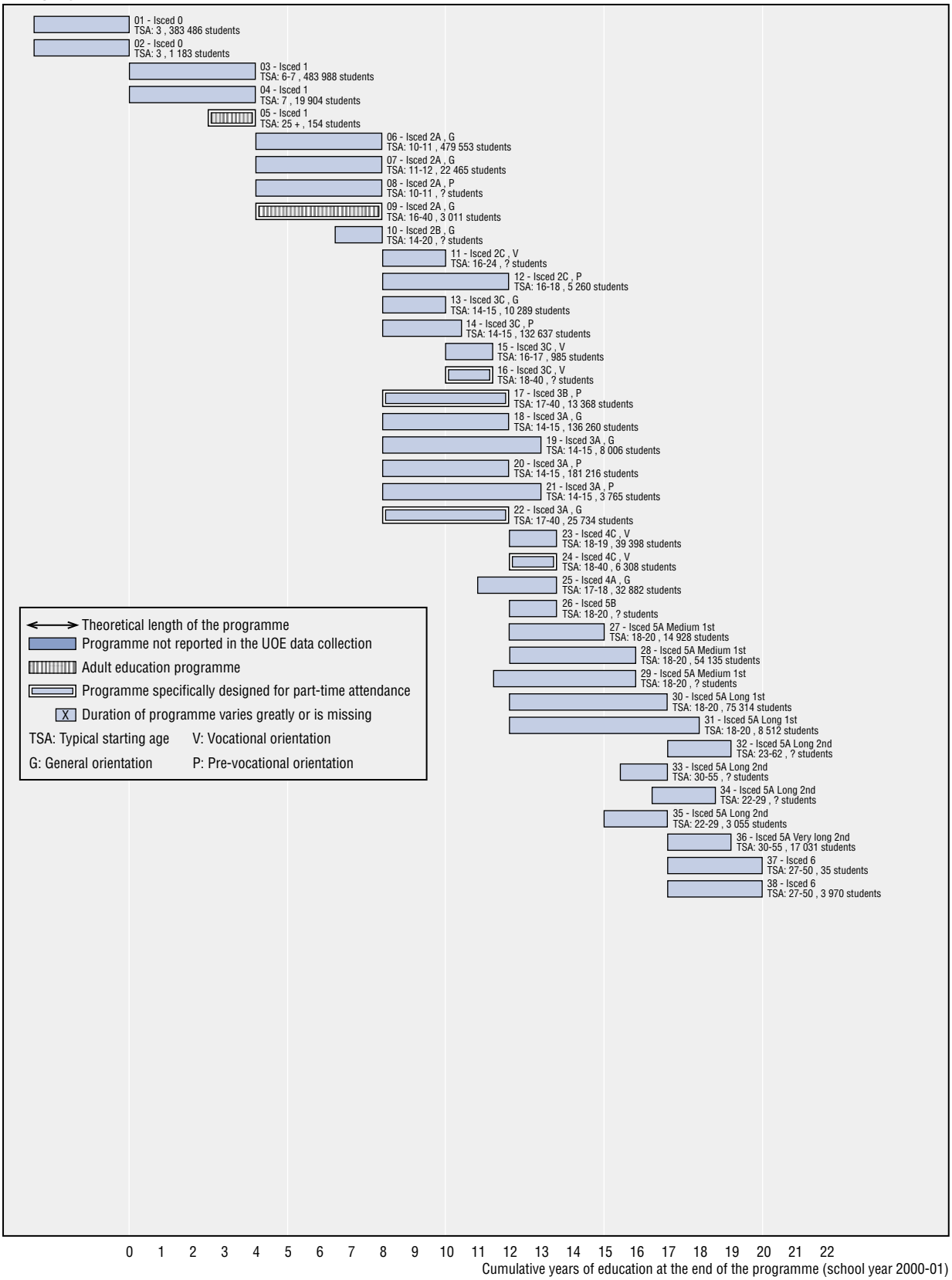
01 - Kindergärten
(Kindergarten)
02 - Schulkindergärten
(School kindergarten)
03 - Vorklassen
(Pre-school classes)
04 - Primarbereich
(Primary schools)
05 - Sekundarbereich I, ohne Qualifikation für weiterführende allgemeinbildende Bildungsgänge
(Lower secondary schools, no access to general)
06 - Sekundarbereich I, mit Qualifikation für weiterführende allgemeinbildende Bildungsgänge
(Lower secondary schools, access to general)
07 - Sekundarbereich I, Abendschulen
(Lower secondary schools evening schools)
08 - Berufsaufbauschulen
(Vocational extension schools)
09 - Berufsvorbereitungsjahr
(Pre-vocational training year)
10 - Berufsgrundbildungsjahr
(Basic vocational training year)
11 - Berufsfachschulen, die berufliche Grundkenntnisse vermitteln
(Specialised vocational schools: basic vocational knowledge)
12 - Schulen des Gesundheitswesens, 1jährig
(Health sector schools, 1 year)
13 - Berufsfachschulen, die einen Berufsabschluss vermitteln
(Specialised vocational schools: occupational qualification)
14 - Berufsschulen (Duales System) Erstausbildung
(Dual System)
15 - Fachoberschulen, 2jährig
(Specialised vocational high schools, 2 years)
16 - Berufsfachschulen, die eine Studienberechtigung vermitteln
(Specialised vocational schools: qualification for ISCED 5A)
17 - Fachgymnasien
(Fachgymnasien)
18 - Allgemeinbildende Programme im Sekundarbereich II
(Upper secondary schools (general))
19 - Berufsschulen (Duales System) (Zweitausbildung, beruflich)
(Dual System (second cycle))
20 - Fachoberschulen, 1jährig
(Specialised vocational high schools, 1 year)
21 - Berufsoberschulen/Technische Oberschulen
(Berufsoberschulen/Technische Oberschulen)
22 - Berufsfachschulen, die einen Berufsabschluss vermitteln (Zweitausbildung kombiniert mit Studienberechtigung)
(Specialised vocational schools: occupational qualification (second cycle) combined with qualification for ISCED 5A)
23 - Berufsschulen (Duales System) (Zweitausbildung kombiniert mit Studienberechtigung)
(Dual System (second cycle) combined with qualification for ISCED 5A)
24 - Sekundarbereich II, Abendschulen
(Upper secondary evening schools)
25 - Fachakademien (Bayern)
(Specialised academies (Bavaria))
26 - Schulen des Gesundheitswesens, 2+3jährig
(Health sector schools, 2+3 years)
27 - Fachschulen, 2jährig
(Trade and technical schools, 2 years)
28 - Fachschulen, 3+4jährig
(Trade and technical schools, 3+4 years)
29 - Berufsakademien
(Vocational academies)
30 - Verwaltungsfachhochschulen
(Colleges of public administration)
31 - Fachhochschulen
(Fachhochschulen)
32 - Universitäten
(University studies)
33 - Promotionsstudium
(Doctoral studies)
34 - Students in special education (mostly mentally disadvantaged students) who cannot be allocated to a particular ISCED level.

Greece



01 - Nipiagogeio
(Kindergarten (Pre-primary))
02 - Dimotiko Scholeio
(Elementary school (Primary))
03 - Gymnasio
(Gymnasium (Lower secondary education))
04 - Scholeio Defteris Efkairias
(Second Chance School (Lower secondary education))
05 - Eniaio Lykeio
(Unified Lyceum (Upper secondary education))
06 - Techniko Epangelmatiko Ekpaideftirio (TEE)
(Technical Vocational Institut (Upper secondary education))
07 - Techniko Epangelmatiko Ekpaideftirio (TEE)
(Technical Vocational Institute (Upper secondary education))
08 - Institouto Epangelmatikis Katartisis (IEK)
(Institute of vocational training (post secondary education))
09 - Institouto Epangelmatikis Katartisis (IEK)
(Institute of vocational training (post secondary education))
10 - Technologiko Ekpaideftiko Idryma (TEI)
(Technological Education Institution (Technological sector))
11 - Programmata Spoudon Epilogis
(Extended university programmes)
12 - Panepistimio
(University (University Sector))
13 - a. Panepistimio b. Polytechneio
(a. University b. Polytechnic School -(Technical University) (both a and b belong to universal sector))
14 - Elliniko Anoikto Panepistimio (EAP)
(Greek Open University (University sector))
15 - a. Panepistimio b. Polytechneio
(Universal sector (post-graduate studies, Master))
16 - Elliniko Anoikto Panepistimio (EAP)
(Greek Open University (University sector))
17 - a. Panepistimio b. Polytechneio
(Universal sector (post-graduate studies, Doctorate programme))
18 - Elliniko Anoikto Panepistimio (EAP)
(Greek Open University (post-graduate studies, Doctorate programme))

Hungary

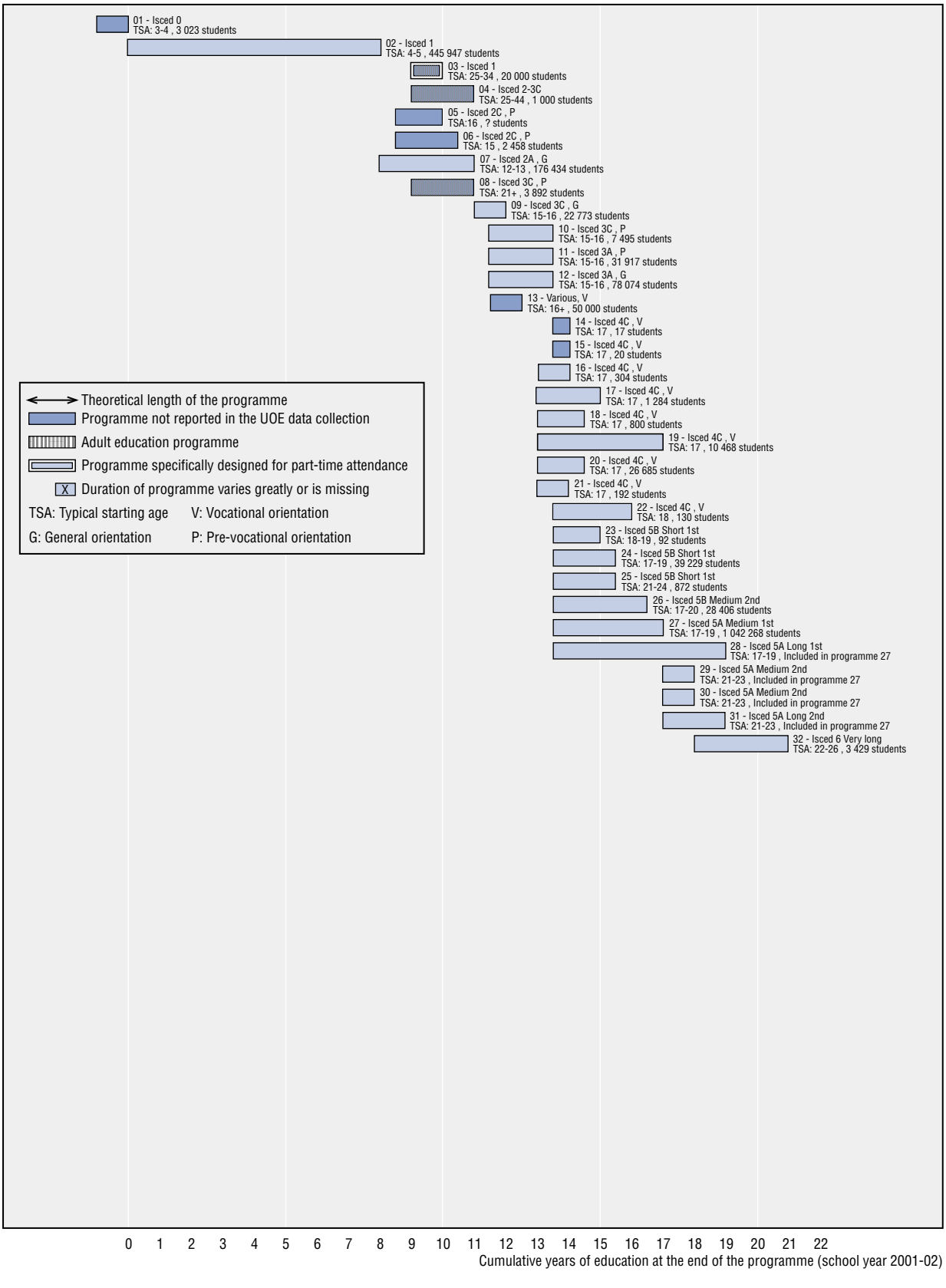


01 - Óvoda (kindergarten, of which one-year compulsory pre-school education)
02 - Gyógypedagógiai óvoda (kindergarten, special education)
03 - Általános iskola 1-4 (general school primary level, 1-4 Grades)
04 - Gyógypedagógiai általános iskola elokészíto és 1-4 évfolyam (general school primary level, Grades preparatory and 1-4, special education)
05 - Dolgozók általános iskolája -. évfolyam (adult literacy courses)
06 - Általános iskola 5-8, 6 és 8 évfolyamos gimnázium 7-8, ill. 5-8 (general school upper level, Grades 5-8 and Grades 5-8 or 7-8 of the eight-year and six-year general secondary programmes, respectively)
07 - Gyógypedagógiai általános iskola 5-8 (general school upper level, special education, 5-8)
08 - Muvészeti általános iskola (basic – lower secondary – education with art/music pre-vocational programmes)
09 - Felnottek általános iskolája 5-8 évfolyam (esti, levelezo, távoktatás) (general school upper level part-time, 5-8)
10 - Felzárkóztató általános iskolai programok (second chance programmes for late maturers preparing for next level of education)
11 - Szakiskola alapfokú iskolai végzettség nélküli szakmákra (vocational programmes requiring less than 10 years of completed general education
12 - Speciális gyógypedagógiai szakiskola (értelmi fogyatékosok részére(vocational education for special education children)
13 - Általános iskola, szakiskola általánosan képzo -. évfolyamai (basic education programme of the vocational school)
14 - Szakmunkásképzo iskola . Törvény szerint (vocational school- according to the Education Act of)
15 - Szakiskolai szakképzo évfolyamok és programok (vocational programmes preparing for NVQL examinations)
16 - Szakiskolai szakképzo évfolyamok és programok (esti, levelezo képzés(vocational programmes preparing for NVQL examinations, part-time)
17 - Felnottek szakközépiskolája -. évfolyam (upper vocational secondary part-time programmes, pre-matura course)
18 - Gimnázium -. évfolyam (grammar school)
19 - Kéttannyelvu gimnázium/szakközépiskola -. évfolyam (bilingual upper secondary school)
20 - Szakközépiskola nappali képzés -. évfolyam (secondary vocational school – pre-matura stage)
21 - Muvészeti szakközépiskola -. évfolyam (upper secondary education with art/music pre-vocational programmes)
22 - Felnottek gimnáziuma -. évfolyam (upper secondary part-time programmes)
23 - Szakképzo évfolyamok és programok érettségire épülo OKJ szakmákban (post-secondary vocational programmes)
24 - Szakképzo évfolyamok és programok érettségire épülo OKJ szakmákban (esti-levelezo) (post-secondary vocational programmes, part-time)
25 - Szakmunkások érettségire felkészíto középiskolája (general secondary programme for vocational school graduates)
26 - Akkreditált iskolai rendszeru felsofokú szakképzés (post-secondary vocational programmes accredited by the Hungarian Higher Education Accreditation Committee)
27 - és féléves foiskolai szintu elso alapképzések (college first programmes – 3 years)
28 - 8 féléves foiskolai szintu elso alapképzések (college graduate education – 4 years)
29 - 8 és 9 féléves egyetemi szintu elso alapképzés (university first programmes – 4 years)
30 - 10 féléves egyetemi szintu elso alapképzés (university first programmes – 5 years)
31 - 11 és 12 féléves egyetemi szintu elso alapképzés (university first programmes – 6 years)
32 - Szakképzés felsofokú végzettséget igénylo OKJ szakmákra (vocational programmes with an entrance requirement of Level qualification)
33 - Foiskolai szakirányú továbbképzés (college post-graduate specialisation programmes)
34 - Kiegészíto egyetemi képzés foiskolát végzettek számára (mérnök, közgazdász, agrármérnök, nyelvtanár (university supplementary programme)
35 - Muszaki tanárképzés muszaki foiskolát végzetteknek (supplementary teacher training programme for engineers)
36 - Egyetemi szakirányú továbbképzés (university post-graduate specialisation programme)
37 - DLA (muvészképzésben megfelel a Ph.D.-nek(doctoral degree in liberal arts)
38 - Ph.D. (doctoral programme)

Iceland

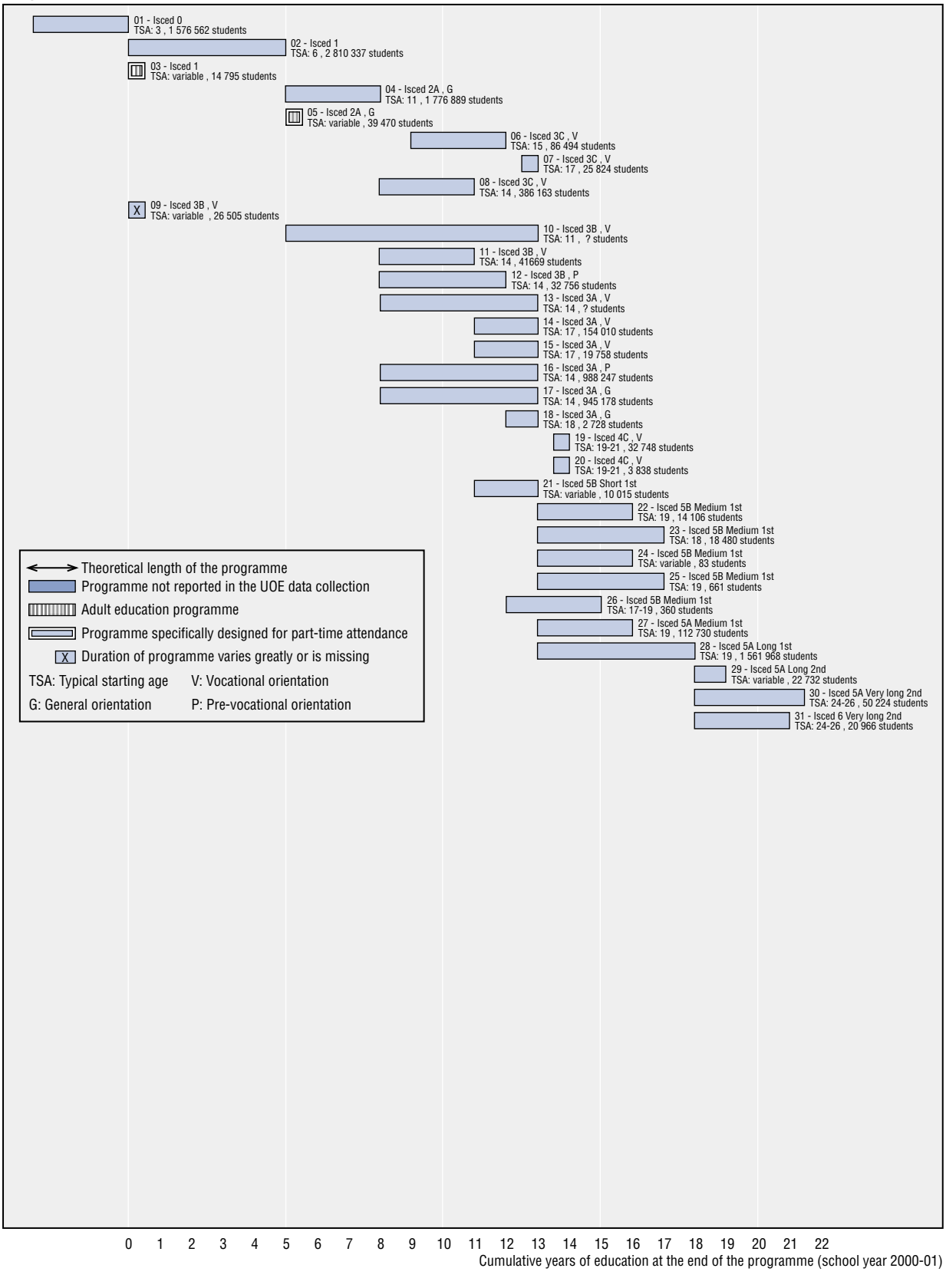
01 - Leiksk li
(Pre-primary schools)
02 - Grunnsk li I
(Primary schools (1st section compulsory education))
03 - Grunnsk li II
(Lower-secondary school (2nd section compulsory education))
04 - Skip- og vØlstj rn 1. stig
(Marine captain and engineering programmes, 1st grade)
05 - Eins Ærs verknÆmsbrautir framhaldssk lastigs
(1-year upper secondary level vocational programmes)
06 - Skip- og vØlstj rn 2. stig
(Marine captain and engineering programmes, 2nd grade)
07 - L ggilt i ngrein 2ja Æra
(Certified indentured trades, 2 years contract time)
08 - Tveggja Æra verknÆmsbrautir framhaldssk lastigs
(Upper secondary level vocational 2-year programmes)
09 - Skip- og vØlstj rn 3. stig
(Marine captain and engineering programmes, 3rd grade)
10 - StarfsnÆm Æ framhaldssk lastigi me b knÆm sem forkr fu
(Vocational programmes at upper secondary level with a general programme prerequisite)
11 - 3ja Æra verknÆmsbrautir framhaldssk lastigs
(Upper secondary level vocational 3-year programmes)
12 - L ggilt i ngrein 3ja Æra
(Certified indentured trades, 3-year contract time)
13 - L ggilt i ngrein 4ra Æra
(Certified indentured trades, 4-year contract time)
14 - StarfsnÆm 4 Ær Æ framhaldssk lastigi
(Vocational 4-year programmes at upper secondary level)
15 - StarfsnÆm 5 Ær Æ framhaldssk lastigi
(Vocational 5-year programmes at upper secondary level)
16 - SØrdeildir fatla ra
(Special education programmes for the mentally handicapped)
17 - Almenn nÆmsbraut framhaldssk la
(General programmes at the start of upper secondary level)
18 - ListnÆm Æ framhaldssk lastigi
(Fine and applied arts at upper secondary level)
19 - FornÆm myndlistar Æ framhaldssk lastigi
(Preparatory programme for fine and applied arts)
20 - B knÆmsbrautir til stœdentspr fs, 4ra Æra
(General programmes leading to matriculation examination at upper secondary level, 4 years)
21 - Stœdentspr f a loknu starfsnÆmi
(Matriculation examination at upper secondary level after completion of vocational programmes)
22 - Lei s gunÆm
(Tourist guide programme)
23 - Skip- og vØlstj rn 4. stig
(Marine captain and engineering programmes at post-secondary level, 4th grade)
24 - MeistaranÆm l ggiltri i ngrein
(Trade master's programmes at post-secondary level in a certified indentured trade)
25 - StarfsnÆm, 1,5 Ær Æ millinÆmsstigi
(Vocational programmes at post-secondary level, 1.5 years)
26 - ˇ ra nÆm 2 Ær Æn hÆsk lagrÆ u
(Tertiary programmes 2 years not leading to a university degree)
27 - ˇ ra nÆm 3 Ær Æn hÆsk lagrÆ u
(Tertiary programmes 3 years not leading to a university degree)
28 - ListnÆm ri sk la, 3ja Æra
(Fine and applied arts at tertiary level, 3 years)
29 - NÆm til kennslurØttinda Æn hÆsk lagrÆ u
(Teacher's qualification programme, no degree)
30 - Stuttar hagn tar nÆmsbrautir hÆsk lum
(Short practical programmes at the tertiary level)
31 - HÆsk lanÆm t knifr i til fyrstu grÆ u
(Tertiary technical programmes, first university degree)
32 - HÆsk lanÆm 3ja Æra til fyrstu grÆ u
(Tertiary programmes 3 years, first university degree))
33 - HÆsk lanÆm 4ra Æra til fyrstu grÆ u
(Tertiary programmes 4 years, first university degree)
34 - HÆsk lanÆm, 1 vi b tarÆr ofan Æ 3 Ær, ekki vi b targrÆ a
(Tertiary programmes, 1 year in addition to 3-year studies, not leading to a second degree)
35 - HÆsk lanÆm, 2 vi b tarÆr ofan Æ 4 Ær, ekki vi b targrÆ a
(Tertiary programmes 2 years in addition to 4 years studies, not leading to a second degree)
36 - HÆsk lanÆm 5 Æra til fyrstu grÆ u
(Tertiary programmes, 5 years, first university degree)
37 - HÆsk lanÆm 6 Æra til fyrstu grÆ u
(Tertiary programmes, 6 years, first university degree)
38 - HÆsk lanÆm, 1.5-2 vi b tarÆr ofan Æ 3-4 Ær, tekin vi b targrÆ a
(Tertiary programmes, 1.5-2 years in addition to 3-4 year studies, leading to a second degree)
39 - HÆsk lanÆm, 2 vi b tarÆr ofan Æ 5-6 Ær, tekin vi b targrÆ a
(Tertiary programmes, 2 years in addition to 5-6-year studies, leading to a second degree)
40 - DoktorsnÆm
(Doctoral programme, Ph.D.)

Ireland



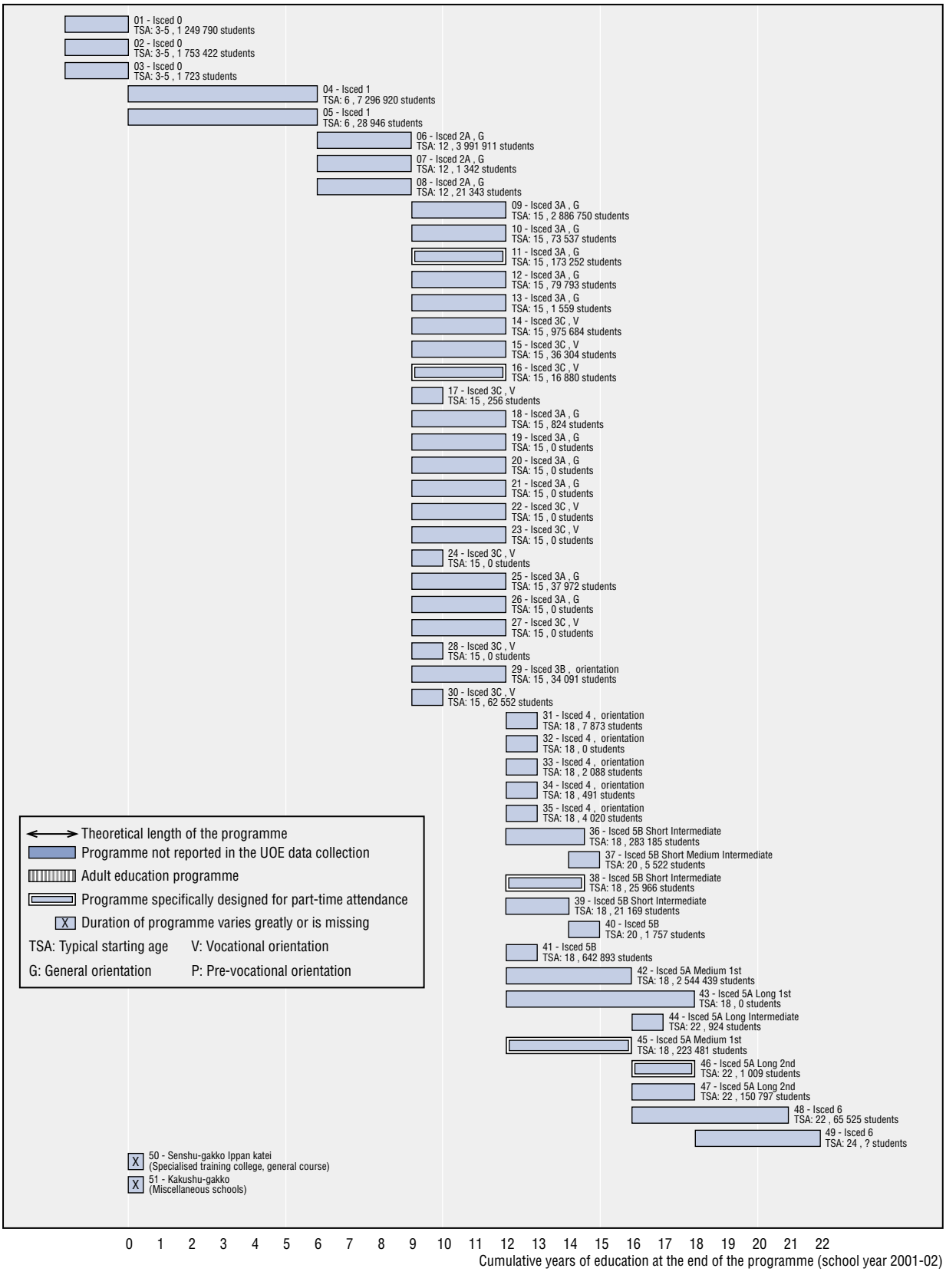
01 - Pre-primary education (early start + private)
02 - Primary education
03 - Adult Literacy Programme
04 - Senior Traveller Education Programme
05 - BIM Introducation to Aquaculture
06 - Youth Reach
07 - Junior Certificate (and JCSP)
08 - Core VTOS
09 - Transition year programme
10 - Leaving Certificate Applied
11 - Leaving Certificate Vocational Programme
12 - Leaving Certificate (established)
13 - FAS various
14 - BIM Aquaculture Level 2
15 - BIM Commercial Fishing Certificate and Seafood Products Cert.
16 - CERT Bar Service/ Reception/ Travel agency skills
17 - CERT Hospitality skills/ Professional Cookery/ Tourism skills
18 - Teagasc Vocational Certificate in Agriculture/ Horticulture/ Forestry/ Equestrian studies
19 - Apprenticeship (FAS)
20 - Vocational preparation and training II (PLC) Yr. 1 and 2
21 - Secretarial/Technical Training Programme
22 - Teagasc Advanced Certificate in Agriculture
23 - Cadetship (Army, Air Corps and Naval Service Training)
24 - Certificate (HETAC, IoT)
25 - National Diploma in Police Studies
26 - Diploma (HETAC, IoT)
27 - Primary Degree Level
28 - Primary Degree Level
29 - Post-graduate Diploma
30 - Master Degree (taught)
31 - Master Degree by Research
32 - Doctorate (Ph.D.)

Italy



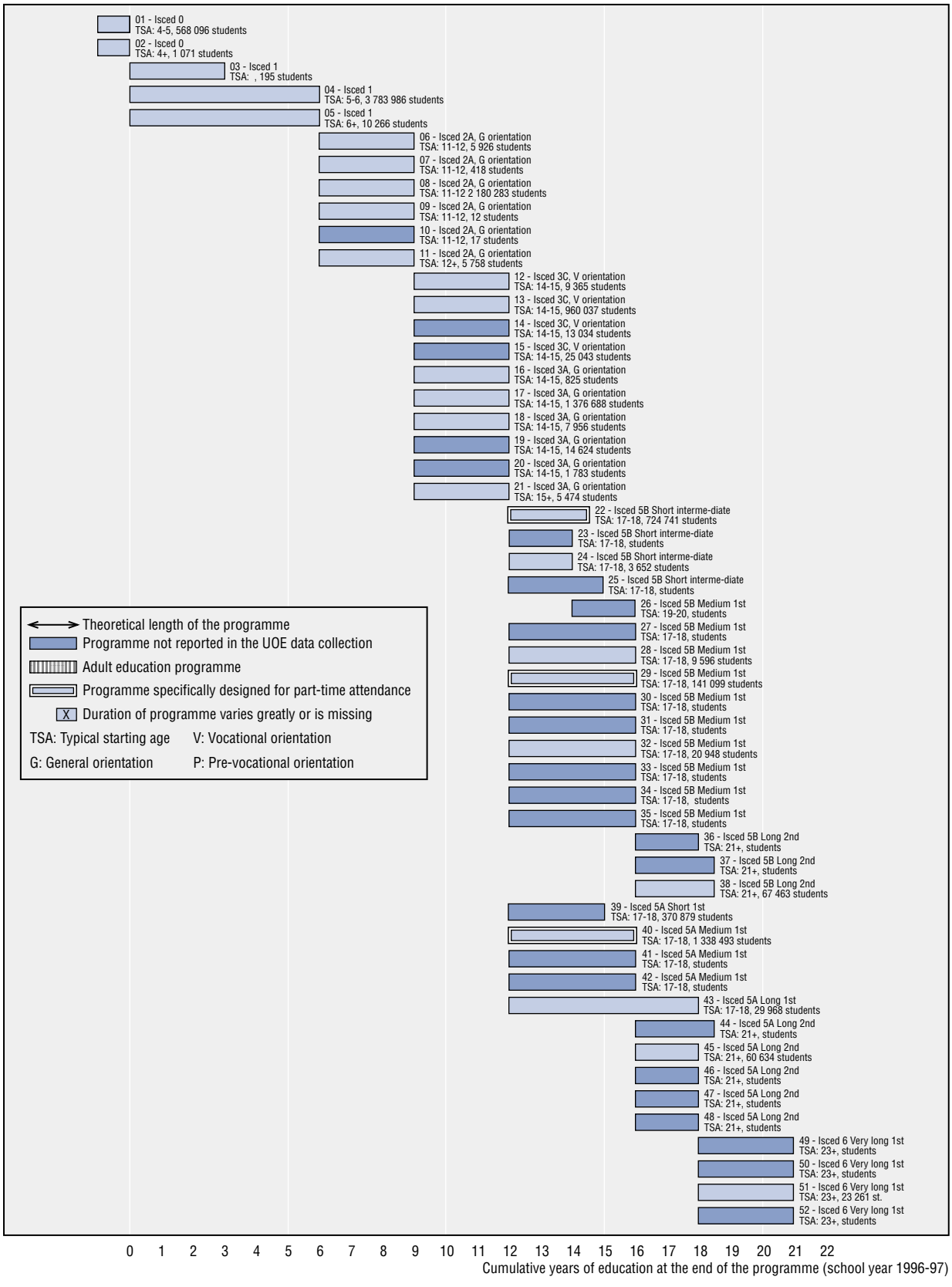
01 - Scuola dell'infanzia
(Pre-primary education)
02 - Scuola elementare
(Primary school)
03 - Corsi di alfabetizzazione culturale 1° ciclo
(Adult literacy school (1st cycle))
04 - Scuola Media
(Lower secondary education)
05 - Corsi di alfabetizzazione culturale 2° ciclo
(Adult literacy school (2nd cycle))
06 - Formazione professionale regionale post-obbligo
(Regional vocational education)
07 - Raccordo formazione-istruzione
(Training-education joint)
08 - Istituto professionale (I ciclo)
(Vocational institute (1st cycle))
09 - Conservatorio musicale
(Music conservatory)
10 - Accademia di danza
(Dance studies)
11 - Istituto d'Arte (I ciclo)
(Art institute (1st cycle))
12 - Liceo artistico
(Art high school)
13 - Corsi sperimentali in Istituti professionali e Istituti d'arte
(Experimental vocational and art courses)
14 - Istituto professionale (II ciclo)
(Vocational institute (2nd cycle))
15 - Istituto d'Arte (II ciclo)
(Art Institute (2nd cycle))
16 - Istituto tecnico
(Technical institute)
17 - Liceo (classico, scientifico, linguistico), ex istituto magistrale ed, ex scuola magistrale
(Secondary general education)
18 - Liceo artistico (anno integrativo)
(Art high school (5th year))
19 - Formazione professionale post-diploma regionale
(Regional vocational education)
20 - Formazione tecnica superiore
(Higher technical studies)
21 - Conservatorio musicale
(Music conservatory)
22 - Istituto Superiore di Educazione Fisica
(Sport studies)
23 - Accademia di belle arti
(Fine-arts academy)
24 - Accademia di arte drammatica
(Dramatic art studies)
25 - Istituto Superiore Industrie Artistiche
(Higher artistic studies)
26 - Accademia di danza
(Dance studies)
27 - Corsi di Diploma universitario
(University education)
28 - Corsi di Laurea
(University education)
29 - Corsi di perfezionamento
(Post graduate courses)
30 - Specializzazione post-laurea
(Professional post graduate courses)
31 - Dottorati di ricerca
(Doctorate)

Japan



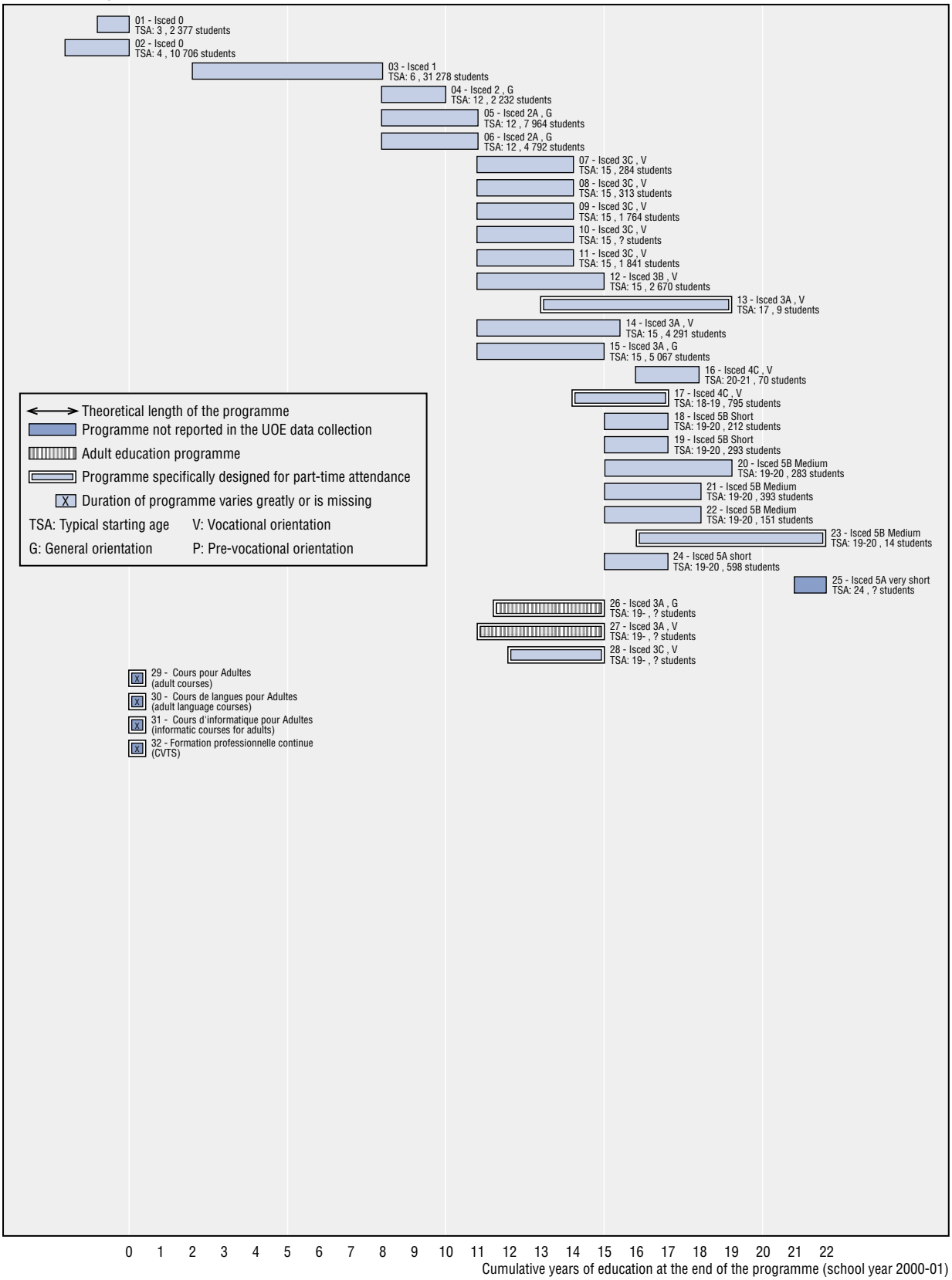
01 - Hoikusho
(Day nursery)
02 - Yochien
(Kindergarten)
03 - Tokushu-kyoiku-gakko Yochi-bu
(Special education school, kindergarten department)
04 - Shogakko
(Elementary school)
05 - Tokushu-kyoiku-gakko Shogaku-bu
(Special education school, elementary department)
06 - Chugakko
(Lower secondary school)
07 - Chuto-kyoiku-gakko (Zenki katei)
(Secondary education school(lower division))
08 - Tokushu-kyoiku-gakko Chugaku-bu
(Special education school, lower secondary department)
09 - Koto-gakko Zennichisei Honka Futu
(Upper secondary school, full day general course)
10 - Koto-gakko Teijisei Honka Futu
(Upper Secondary school, day/evening general course)
11 - Koto-gakko Tsushinsei Futu
(Upper Secondary school, correspondence general course)
12 - Koto-gakko Zennichisei Honka Futu
(Upper secondary school, full day integrated course (general))
13 - Koto-gakko Teijisei Honka Sogo
(Upper secondary school, day/evening integrated course (general))
14 - Koto-gakko Zennichisei Honka Senmon
(Upper secondary school, full day specialized course)
15 - Koto-gakko Teijisei Honka Senmon
(Upper secondary school, day/evening specialized course)
16 - Koto-gakko Tsushinsei Senmon
(Upper secondary school, correpondence specialized course)
17 - Koto-gakko Zennichisei Teijisei Bekka(Futu Sogo Senmon)
(Upper secondary school, day/evening school,short-term course(general integrated specialized))
18 - Chuto-kyoiku-gakko (Koki katei) Zennichisei Honka Futu
(Secondary education school(upper division),full day general course)
19 - Chuto-kyoiku-gakko (Koki katei) Teijisei Honka Futu
(Secondary education school(upper division), day/evening general course)
20 - Chuto-kyoiku-gakko (Koki katei) Zennichisei Honka Sogo
(Secondary education school(upper division),full day integrated course (general))
21 - Chuto-kyoiku-gakko(Koki katei) Teijisei Honka Sogo
(Secondary education school(upper division), day/evening integrated course(general))
22 - Chuto-kyoiku-gakko (Koki katei)Zennichisei Honka Senmon
(Secondary education school(upper division),full day specialized course)
23 - Chuto-kyoiku-gakko (Koki katei)Teijisei Honka Senmon
(Secondary education school(Upper division), day/evening specialized course)
24 - Chuto-kyoiku-gakko (Koki katei) Zennichisei Teijisei Bekka(Futu Sogo Senmon)
(secondary education school(Upper division), full day/day/evening short-term course(general integrated specialized))
25 - Tokushu-kyoiku-gakko Koto-bu Honka Fusu
(Special education school, upper secondary department, general course)
26 - Tokushu-kyoiku-gakko Koto-bu Honka Sogo
(Special education school, upper secondary department, integrated course (general))
27 - Tokushu-kyoiku-gakko Koto-bu Honka Senmon
(Special education school, upper secondary department, Specialized course)
28 - Tokushu-kyoiku-gakko Koto-bu Bekka
(Special education school, upper secondary department short-term course)
29 - Koto-senmon-gakko Honka
(College of technology, regular course)
30 - Sensyu-gakko Koto katei
(Specialized training college, upper secondary course)
31 - Koto-gakko Zennichisei Teijisei Senkoka(Futu Sogo Senmon)
(Upper secondary school, full day/day/evening, advanced course(general integrated specialized))
32 - Chuto-kyoiku-gakko (Koki katei) Zennichisei Teijisei Senkoka(Futu Sogo Senmon)
(Secondary education school(Upper division), full day/day/evening, advanced course(general integrated specialized))
33 - Tokushu-kyoiku-gakko Koto-bu Senkoka(Futu Sogo Senmon)
(Special education school, upper secondary department, advanced course(general integrated specialized))
34 - Tanki-daigaku Bekka
(Junior college, short-term course)
35 - Daigaku Gakubu Bekka
(University, short-term course)
36 - Tanki-daigaku Honka
(Junior college, regular course)
37 - Tanki-daigaku Senkoka
(Junior college, advanced course)
38 - Tanki-daigaku Tushinsei
(Junior college, correspondence course)
39 - Koto-senmon-gakko Honka
(College of technology, regular course)
40 - Koto-senmon-gakko Senkoka
(College of technology, advanced course)
41 - Sensyu-gakko Senmonkatei
(Specialised training college, post-secondary course)
42 - Daigaku Gakubu
(University, undergraduate)
43 - Daigaku Ishigaku Juigaku
(University, undergraduate of medicine, dentistry and veterinary medicine)
44 - Daigaku Senkoka
(University, advanced course)
45 - Daigaku Tsushinsei katei
(University, undergraduate, correspondence course)
46 - Daigakuin Shushi katei Tsushinsei katei
(University, graduate school, Master's course correspondence course)
47 - Daigakuin Shushi katei
(University, graduate school, Master's course)
48 - Daigakuin Hakushi katei
(University, graduate school, Doctor's course)
49 - Daigakuin Hakushi katei Ishigaku Juigaku
(University, graduate school, Doctor's course of medicine, dentistry and veterinary medicine)
50 - Senshu-gakko Ippan katei
(Specialised training college, general course)
51 - Kakushu-gakko
(Miscellaneous schools)

Korea



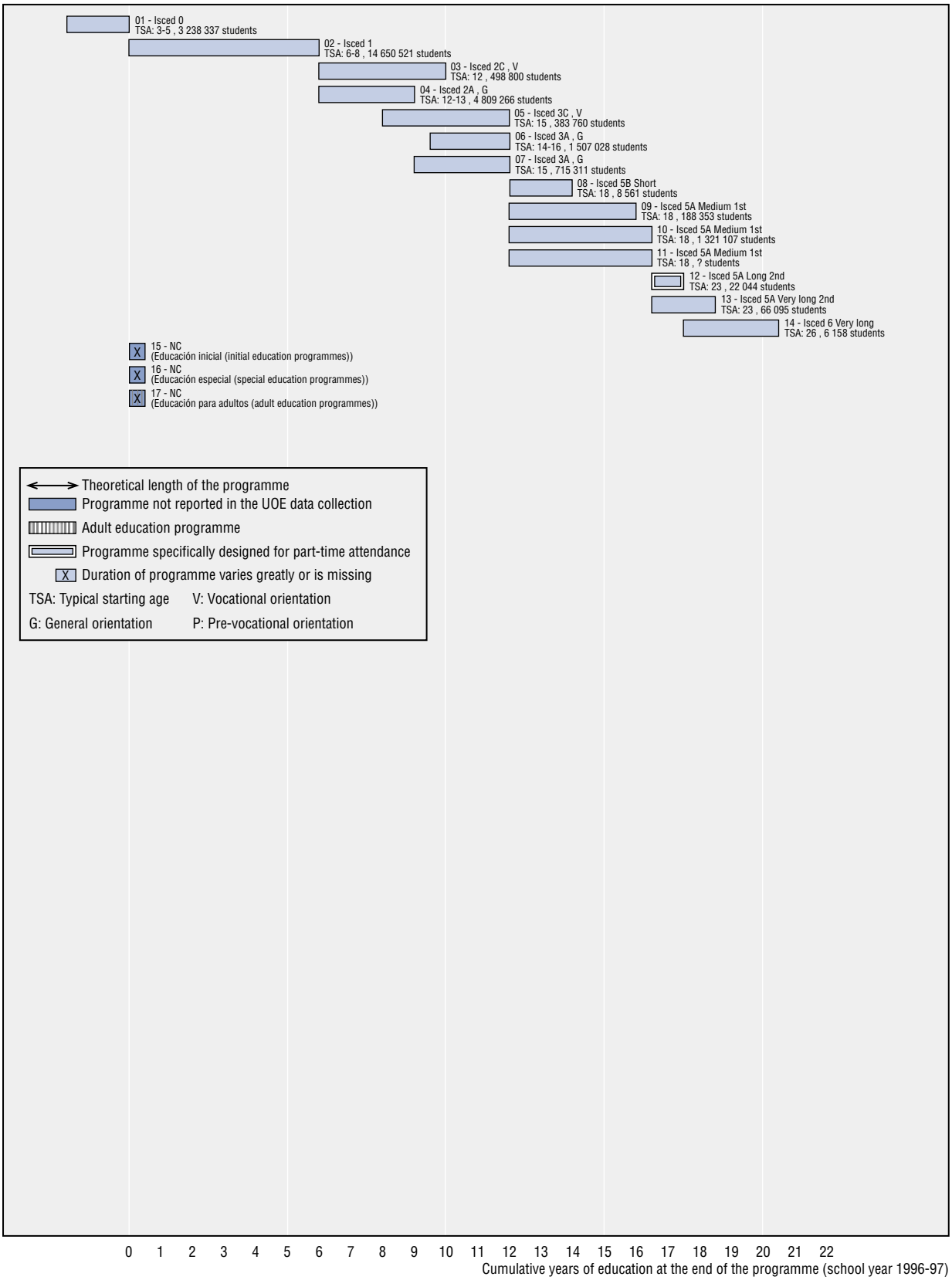
01 - (Yuchiwon (kindergarten))
02 - (Teuksu-hakgyo(ynchiwon kwajong) (special school, kindergarten course))
03 - (Kongmin-hakgyo (civic school))
04 - (Chodeung-hakgyo (primary school))
05 - (Teuksu-hakgyo(chodeung-hakgyo kwajong) (special school, primary school course))
06 - (Kakjong-hakgyo(jung-hakgyo kwajong) (miscellaneous school, middle school course))
07 - (Kodeung kongmin hakgyo (civic high school))
08 - (Jung-hakgyo (middle school))
09 - (Sanupche-busol junghakgyo (middle school attached to industrial firms))
10 - (Teukbul hakgeop(junghakgyo) (special evening classes for working youths, middle school))
11 - (Teuksu-hakgyo (jung-hakgyo kwajong) (special school, middle school course))
12 - (Kodeung kisul-hakgyo (trade high school))
13 - (Silupgye kodeung-hakgyo (vocational high school))
14 - (Teukbul hakgeop (silupgye kogyo) (special evening classes for working youths, vocational high school))
15 - (Sawhaigyoyuksiseol hakgyo (accredited non-formal education facilities schools))
16 - (Kakjong-hakgyo(kodeung-hakgyo kwajong) (miscellaneous school, high school course))
17 - (Ilbangye kodeung-hakgyo (general high school))
18 - (Sanupche-busol kodeung-hakgyo (high school attached to industrial firms))
19 - (Bangsongtongsin kodeung-hakgyo (air and correspondence high school))
20 - (Teukbul hakgeop(ilbangye kogyo) (special evening classes for working youths, general high school))
21 - (Teuksu-hakgyo(kodeung-hakgyo kwajong) (special school, high school course))
22 - (Jeonmun daehak (junior college))
23 - (Kinung daehak (polytechnic college))
24 - (Kakjong-hakgyo (jeonmun daehak kwajong) (miscellaneous school, junior college course))
25 - (Kisul daehak (technical college))
26 - (Yukkun samsakwan hakgyo (third military academy))
27 - (Semu daehak (national college of taxation))
28 - Kakjong-hakgyo (daehak kwajong) (miscellaneous school, undergraduate course))
29 - (Sanup daehak (gaebang daehak) (open university, polytechnic university))
30 - (Yukkun sakwan hakgyo (military academy))
31 - (Geongchal daehak (national college of police))
32 - (Gyoyuk daehak (university of education))
33 - (Kukkunganho sakwan hakgyo (nursing academy))
34 - (Haekun sakwan hakgyo (naval academy))
35 - (Kongkun sakwan hakgyo (air force academy))
36 - (Kukbang daehakwon (school of national securities))
37 - (Teuksu daehakwon (graduate school, special))
38 - (Jeonmun daehakwon (graduate school, professional))
39 - (Bangsongtongsin daehak [air and correspondence university (open university)])
40 - (Daehak(gyo) (university))
41 - (Hankuk kwahak kisulwon (Korea advanced institute of science and technology))
42 - (Hankuk yeosuljonghap hakgyo (yeosulsa kwajong) (the Korean National University of Arts))
43 - (Woikwa deahak,chikwa daehak (university, medical-dentistry))
44 - (Hankuk jeongsin munwha yeonku won (seoksa kwajong) (the Academy of Korean Studies, MA course))
45 - (Ilbandaehakwon(seoksa kwajong) (graduate school, Master's degree programme, short))
46 - (Hankuk kwahak kisulwon (seoksa kwajong) (Korea Advanced Institute of Science and Technology, MA course))
47 - (Daehakwon daehak (seoksa kwajong) (university of graduate school))
48 - (Hankuk yeosuljonghap hakgyo (jeonmun yeosulsa kwajong) (the Korean National University of Arts, MA course))
49 - (Hankuk kwahak kisulwon(baksa kwajong) (Korea Advanced Institute of Science and Technology))
50 - (Hankuk jeongsin munwha yeonku won (baksa kwajong) (Academy of Korean Studies, Ph.D.))
51 - (Ilban daehakwon (baksa kwajong) (graduate school, Doctorate programme))
52 - (Daehakwon daehak(baksa kwajong) (university of graduate school))

Luxembourg



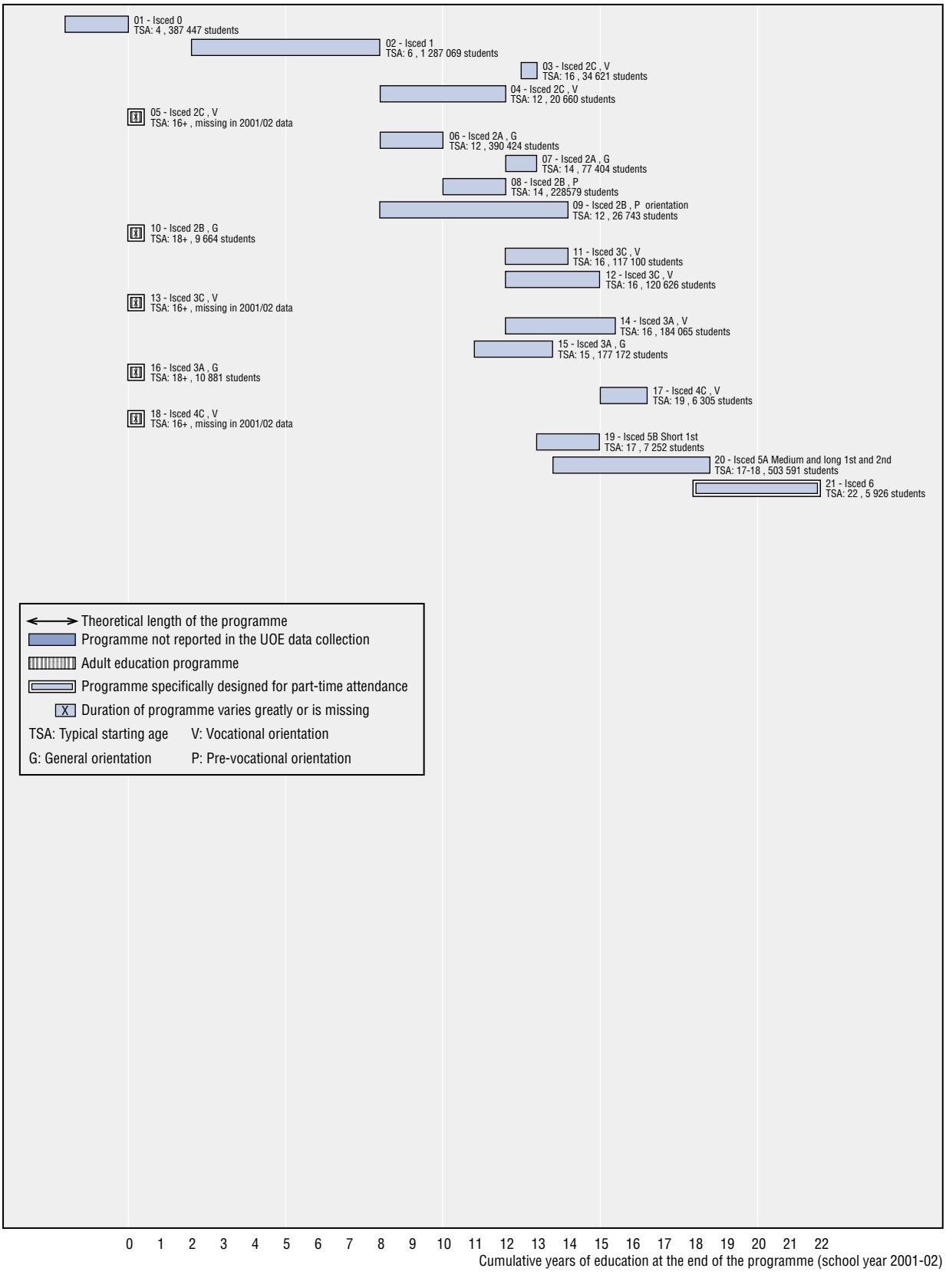
01 - Education précoce (early maturity education)
02 - Education préscolaire (pre-primary education)
03 - Enseignement primaire (primary education)
04 - Regime préparatoire de l'EST (preparatory regime of the technical secondary education)
05 - Cycle inférieur de l'EST (lower technical secondary education)
06 - Cycle inférieur de l'ES (lower general secondary education)
07 - Apprentissage à deux degrés CITP (apprenticeship at two degrees: CITP)
08 - Régime professionnel: CCM (professional regime CCM)
09 - Régime professionnel concomitant (professional regime school & work based)
10 - Régime professionnel filière mixte (professional mixed regime)
11 - Régime professionnel plein temps (professional regime with full-time school)
12 - Régime de la formation de technicien (technical training regime)
13 - Formation d'éducateurs (en cours d'emploi) (training of educators, while working)
14 - Régime technique (technical regime)
15 - Cycles moyen et supérieur de l'enseignement secondaire général (middle and upper general secondary education)
16 - Profession de santé: spécialisation
17 - Brevet de maîtrise (Master craftsman's diploma)
18 - Brevet de technicien supérieur (bts) (higher technician certificate)
19 - Cycle court d'études supérieures en gestion ou en informatique (short-term course in higher studies of administration or studies of informatics)
20 - Formation à l'ingénieur-industriel (training of industrial engineers)
21 - Formation des instituteurs (initial training of primary and pre-primary teachers)
22 - Formation d'éducateurs gradués (plein temps) (training of graduated educators, full-time)
23 - Formation d'éducateurs gradués (en cours d'emploi) (training of graduated educators, while working)
24 - Cours universitaires er cycle (university courses):DPCU
25 - Etudes supérieures spécialisées en contentieux communautaires
26 - Cycles moyen et supérieur de l'enseignement secondaire général pour adultes (middle and upper general secondary education for adults)
27 - Régime technique pour adultes (technical regime for adults)
28 - Cours de formation professionnelle préparant au CATP (professional courses to prepare the CATP)
29 - Cours pour Adultes (adult courses)
30 - Cours de langues pour Adultes (adult language courses)
31 - Cours d'informatique pour Adultes (IT courses for adults)
32 - Formation professionnelle continue (CVTS)

Mexico



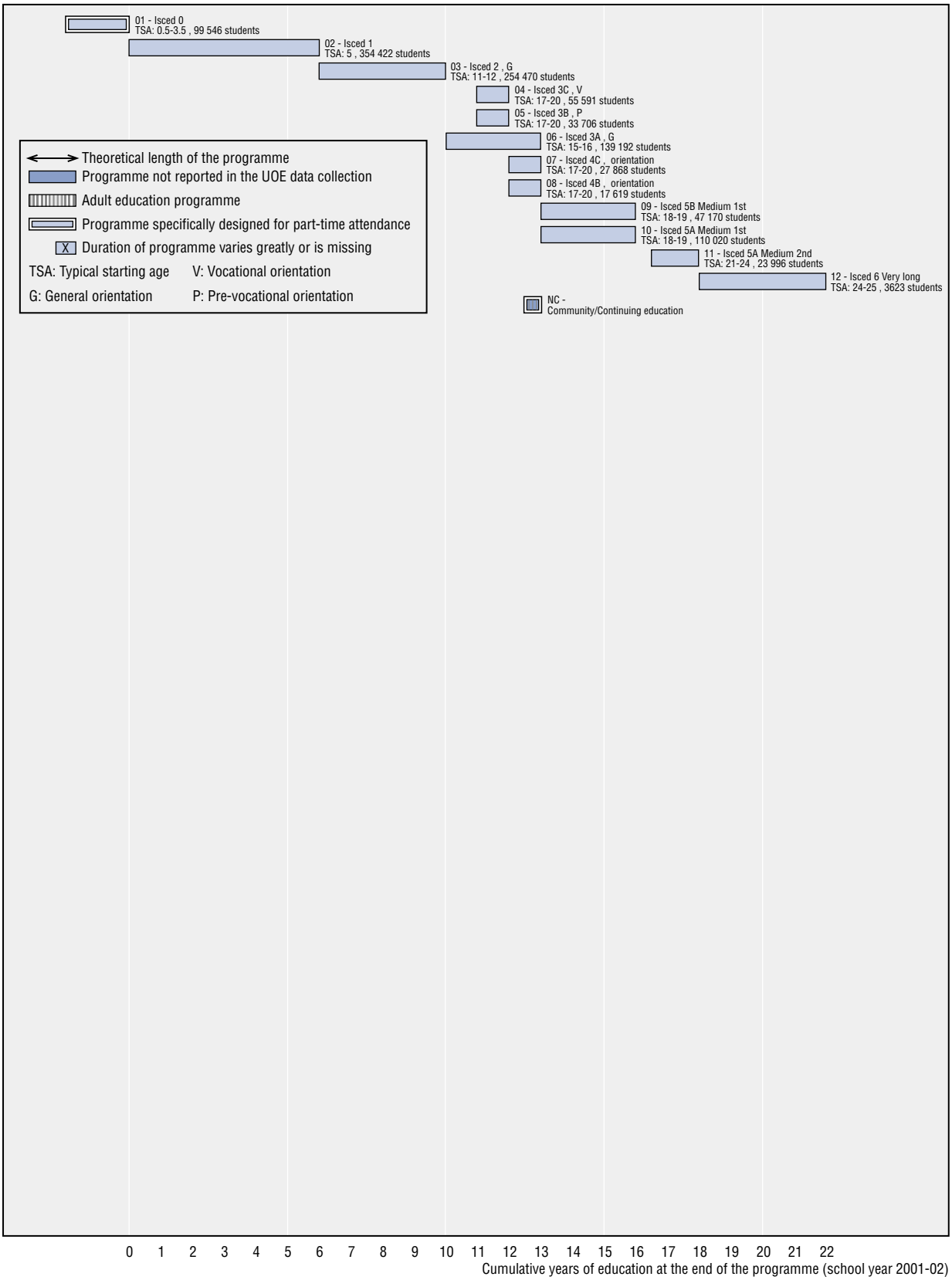
01 - Educación preescolar (pre-primary education)
02 - Educación primaria (primary education)
03 - Capacitación para el trabajo [lower secondary (job training)]
04 - Educación secundaria (lower secondary education)
05 - Profesional medio [upper secondary (vocational or technical programmes)]
06 - Bachillerato general, Bachillerato por cooperación, Bachillerato pedagógico, Bachillerato de arte [upper secondary (high school programme)]
07 - Bachillerato tecnológico [upper secondary (combined general and technical programmes)]
08 - Licenciatura tecnológica [technological universities programmes (vocational associate's degree programmes)]
09 - Educación normal licenciatura [teacher training school programmes (Bachelor's degree programme)]
10 - Licenciatura universitaria [university degree programmes (Bachelor's degree programme)]
11 - Programas de institutos tecnológicos [technological institutes programmes (Bachelor's degree programme)]
12 - Programa de especialización [specialisation degree programme (Master's degree programme(short)]
13 - Programa de maestría [Master's degree programme (long)]
14 - Programa de doctorado [Doctoral programme – Doctorate (Ph.D. Research)]
15 - Educación inicial (initial education programmes)
16 - Educación especial (special education programmes)
17 - Educación para adultos (adult education programmes)

Netherlands



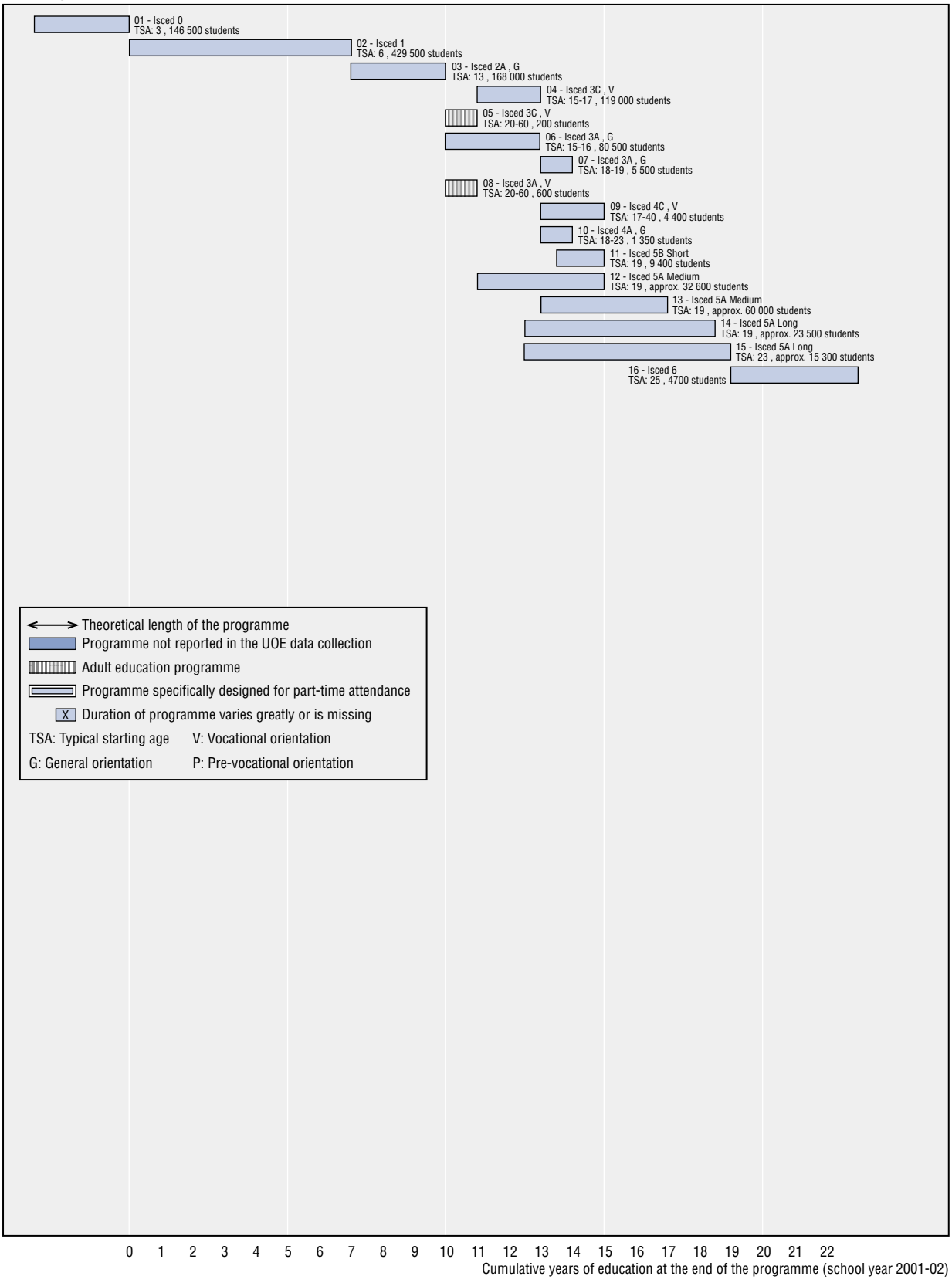
01 - Basisonderwijs en speciaal onderwijs ; leerlingen 3-5 jaar oud
(Primary education and primary special needs education; pupils 3-5 years of age)
02 - Basisonderwijs en speciaal onderwijs ; leerlingen van 6 jaar en ouder
(Primary education and primary special needs education; pupils 6 years of age and older)
03 - WEB-assistentenopleiding
(Vocational education: training to assistant level; (level 1))
04 - Praktijkonderwijs
(Practical training)
05 - Particulier onderwijs op vbo-niveau
(Non-regular vocational training courses in private institutions on lower secondary level)
06 - Klas 1-2 voorbereidend middelbaar beroepsonderwijs (VMBO) AND klas 1-2 algemeen voortgezet onderwijs (AVO)
(Class 1-2 pre-vocational secondary education (programmes with general content) AND class 1-2 general secondary education)
07 - Klas 3 algemeen voortgezet onderwijs (AVO)
(Class 3 general secondary education)
08 - Klas 3-4 voorbereidend middelbaar beroepsonderwijs (VMBO)
(Class 3-4 pre-vocational secondary education)
09 - Speciaal voortgezet onderwijs (SVO) en WEC-voortgezet
(Secondary special needs education)
10 - VAVO-MAVO-niveau
(General junior secondary education for adults)
11 - WEB-basisberoepsopleiding
(Vocational education, basic vocational training (level 2))
12 - WEB-vakopleiding
(Vocational education, professional training (level 3))
13 - Particulier onderwijs op mbo-niveau
(Non-regular vocational training courses in private institutions at upper secondary level)
14 - WEB-middenkaderopleiding
(Vocational education, middle-management training (level 4))
15 - Klas 4-5 HAVO en klas 4-6 VWO
(Class 4-6 senior general secondary education)
16 - VAVO-HAVO/VWO-niveau
(General senior secondary education for adults)
17 - WEB-specialistenopleiding
(Vocational education, specialist training (level 4))
18 - Particulier onderwijs op post-mbo-niveau
(Non-regular vocational training courses in private institutions at post- secondary non-tertiary level)
19 - Kort HBO
(higher professional education, short programmes)
20 - (Lang) HBO en WO, including Open University
(higher professional education (long programmes) and university education, including Open University qualification programmes)
21 - AIO's
(research assistants)

New Zealand



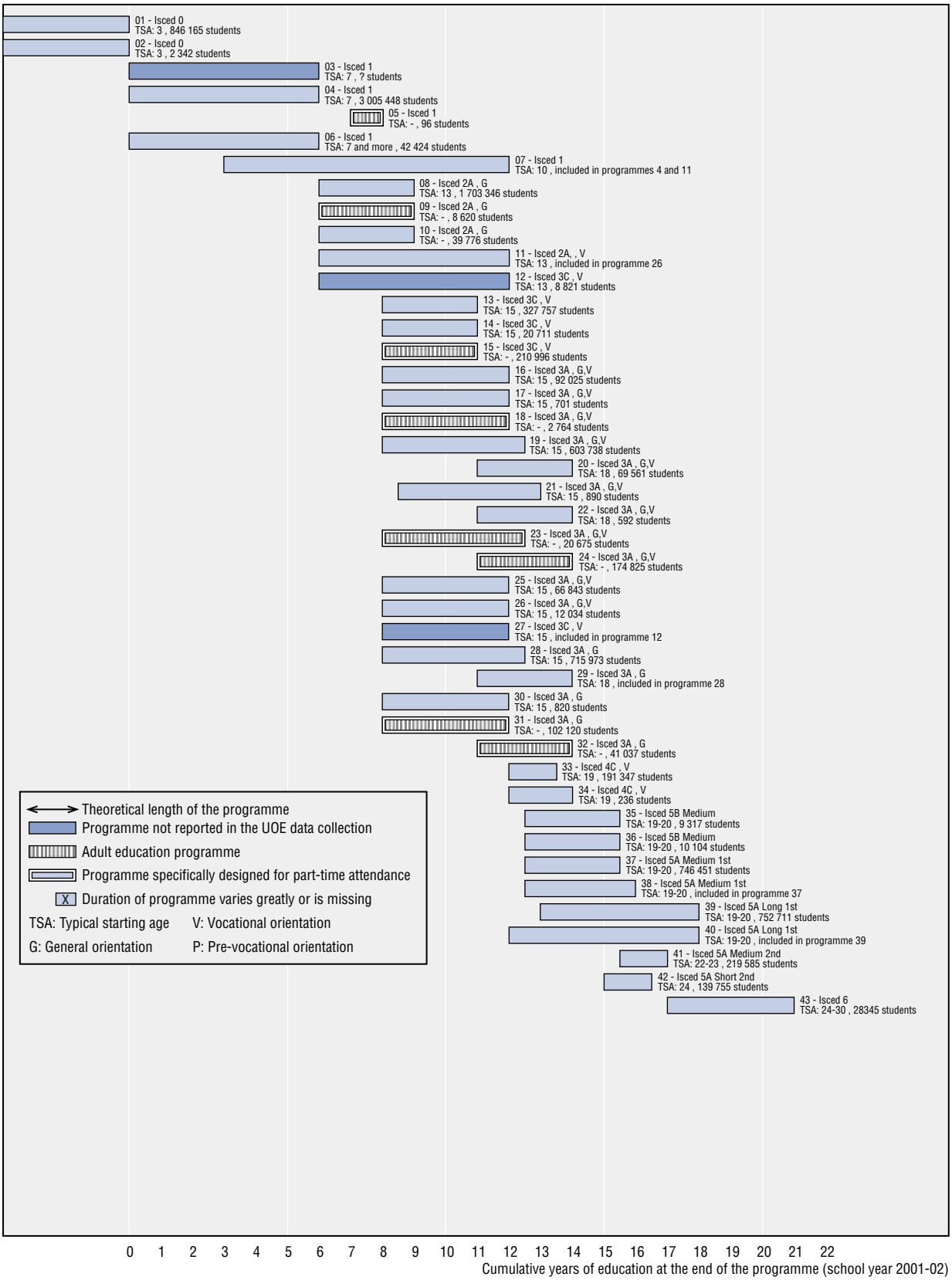
01 - Early childhood education
02 - Primary
03 - Secondary (Year 7 to Year 10)
04 - Certificate
05 - Certificate
06 - Upper Secondary (Year 11 to Year 13)
07 - Certificate
08 - Certificate
09 - Diploma
10 - Bachelor's degree
11 - Post-graduate
12 - Doctorate, Higher Doctorates
13 - Community/Continuing education

Norway



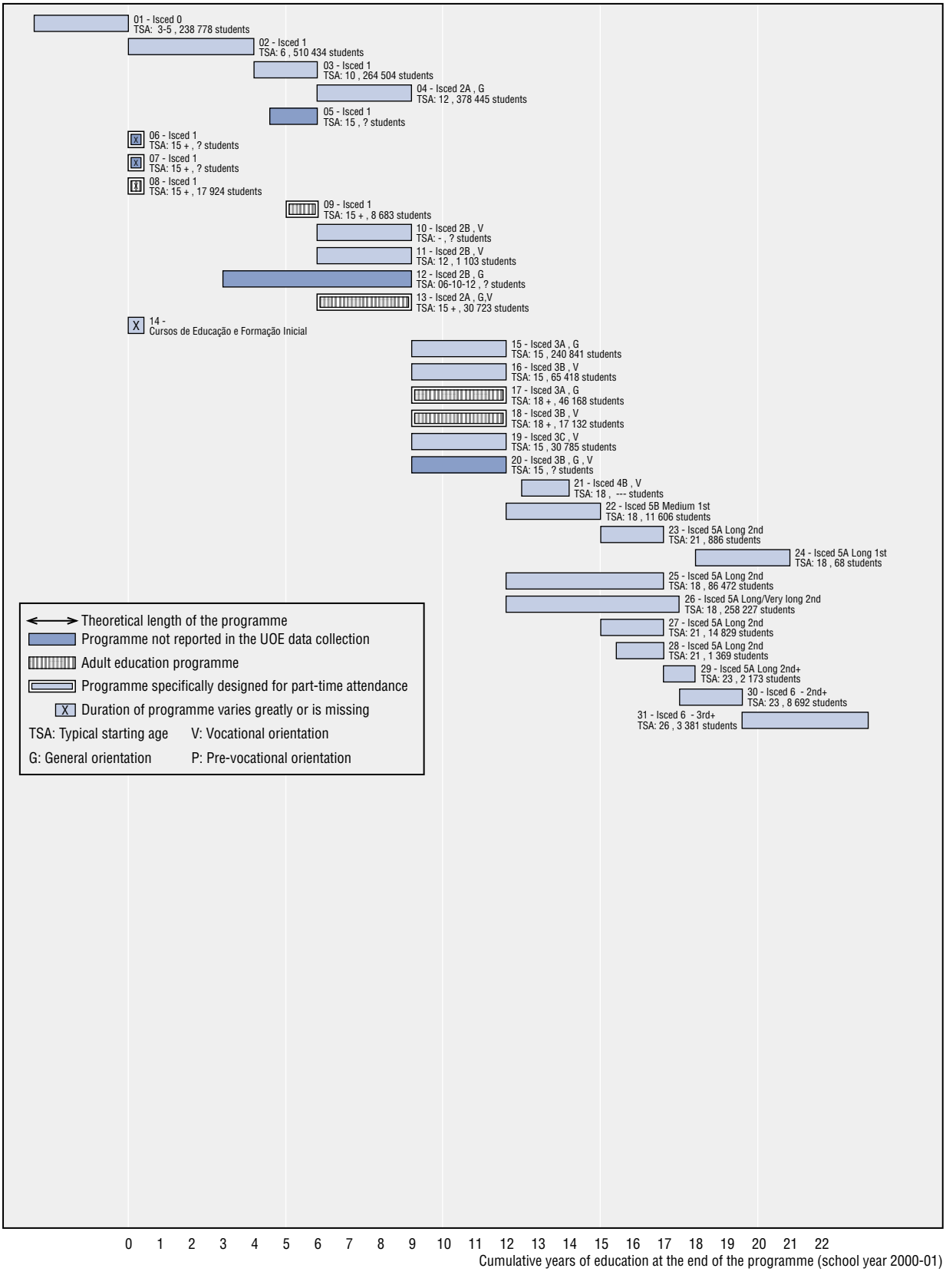
01 - Barnehage (kindergartenog Førskole (pre-school)
02 - Grunnskole 1.-7. klasse (primary school)
03 - Ungdomsskole 8.-10. klasse (lower secondary)
04 - Videregående opplæring, yrkesfag (upper secondary vocational)
05 - Arbeidsmarkedsopplæring (AMO(labour market courses))
06 - Videregående opplæring, Allmennfag (upper secondary, giving access to further education, general)
07 - Videregående opplæring, allmennfag (upper secondary, giving access to further education, general)
08 - Arbeidsmarkedsopplæring (AMO(labour market courses))
09 - Teknisk fagskole (specialist vocational education)
10 - Forberedende prøver (preparatory courses)
11 - Høgre utd., <3 år, lavere grad (tertiary education, <3 years, 1st degree)
12 - Høgre utd., lavere grad (tertiary education, 3 years)
13 - Høgre utd., 4 år, lavere grad (tertiary education, 4 years, 1st degree)
14 - Høgre utdanning, lang/profesjonsutdannninger (tertiary education long/professional education, 1st degree)
15 - Hovedfag/mag.art (tertiary education, second degree)
16 - Doktorgrad (Doctorate)

Poland



01 - Przedszkole
(pre-school education, (kindergarden))
02 - Przedszkole specjalne
(pre-school education, (special kindergarden))
03 - Szko a muzyczna I stopnia
(1st level music school)
04 - Szkola podstawowa dla dzieci i m odzie y
(primary school for children and youth)
05 - Szkola podstawowa dla doros ych
(primary school for adult)
06 - Szkola podstawowa specjalna dla dzieci i m odzie y
(primary special school for children and youth)
07 - Szko a baletowa
(Ballet school)
08 - Gimnazjum dla dzieci i m odzie y
(gymnasium for children and youth)
09 - Gimnazjum dla doros ych
(gymnasium for adults)
10 - Gimnazjum specjalne dla dzieci i m odzie y
(special gymnasium for children and youth)
11 - Szko a artystyczna II stopnia
(second level art school)
12 - Szko a artystyczna II stopnia
(second level art school)
13 - Szko a zasadnicza dla m odzie y
(basic vocational school)
14 - Szko a zasadnicza specjalna dla m odzie y
(special basic vocational school)
15 - Szko a zasadnicza dla doros ych
(basic vocational school for adults)
16 - Liceum zawodowe dla m odzie y
(secondary school of vocational education for youth)
17 - Liceum zawodowe specjalne dla m odzie y
(special secondary school of vocational education for youth)
18 - Liceum zawodowe dla doros ych
(secondary school of vocational education for adults)
19 - Technikum (liceum, szko a równorz dna) dla m odzie y
(secondary technical (or equivalent) school for youth)
20 - Technikum (liceum, szko a równorz dna) dla m odzie y na podbudowie szko y zasadniczej
(secondary technical (or equivalent) school for youth)
21 - Technikum specjalne (liceum, szko a równorz dna) dla m odzie y
(special secondary technical (or equivalent) school for youth)
22 - Technikum specjalne (liceum, szko a równorz dna) dla m odzie y na podbudowie szko y zasadniczej
(special secondary technical (or equivalent) school for youth)
23 - Technikum (liceum, szko a równorz dna) dla doros ych
(secondary technical (or equivalent) school for adults)
24 - Technikum (liceum, szko a równorz dna) dla doros ych na podbudowie szko y zasadniczej
(secondary technical (or equivalent) school for adults)
25 - Liceum techniczne dla m odzie y
(technical liceum for youth)
26 - Szko a artystyczna II stopnia
(second level art school)
27 - Szko a artystyczna II stopnia
(second level art school)
28 - Liceum ogólnokszta c ce dla m odzie y
(secondary school of general education for youth)
29 - Liceum ogólnokszta c ce dla m odzie y na podbudowie szko y zasadniczej
(secondary school of general education for youth)
30 - Specjalne liceum ogólnokszta c ce dla m odzie y
(special secondary school of general education for youth)
31 - Liceum ogólnokszta c ce dla doros ych
(secondary school of general education for adults)
32 - Liceum ogólnokszta c ce dla doros ych na podbudowie szko y zasadniczej
(secondary school of general education for adults)
33 - Szko a policealna
(post-secondary school)
34 - Szko a policealna specjalna
(special post-secondary school)
35 - Kolegium nauczycielskie
(teacher training college)
36 - Nauczycielskie kolegium j zyków obcych
(foreign language teacher training college)
37 - Wy sze studia zawodowe
(higher education professional studies)
38 - Wy sze studia zawodowe
(higher education professional studies)
39 - Studia magisterskie
(university studies)
40 - Studia medyczne, studia weterynaryjne
(university medical studies, veterinary studies)
41 - Studia uzupelniaj ce magisterskie
(post-licentiate master diploma studies)
42 - Studia podyplomowe
(post-graduate courses)
43 - Studia doktoranckie
(doctoral studies)

Portugal

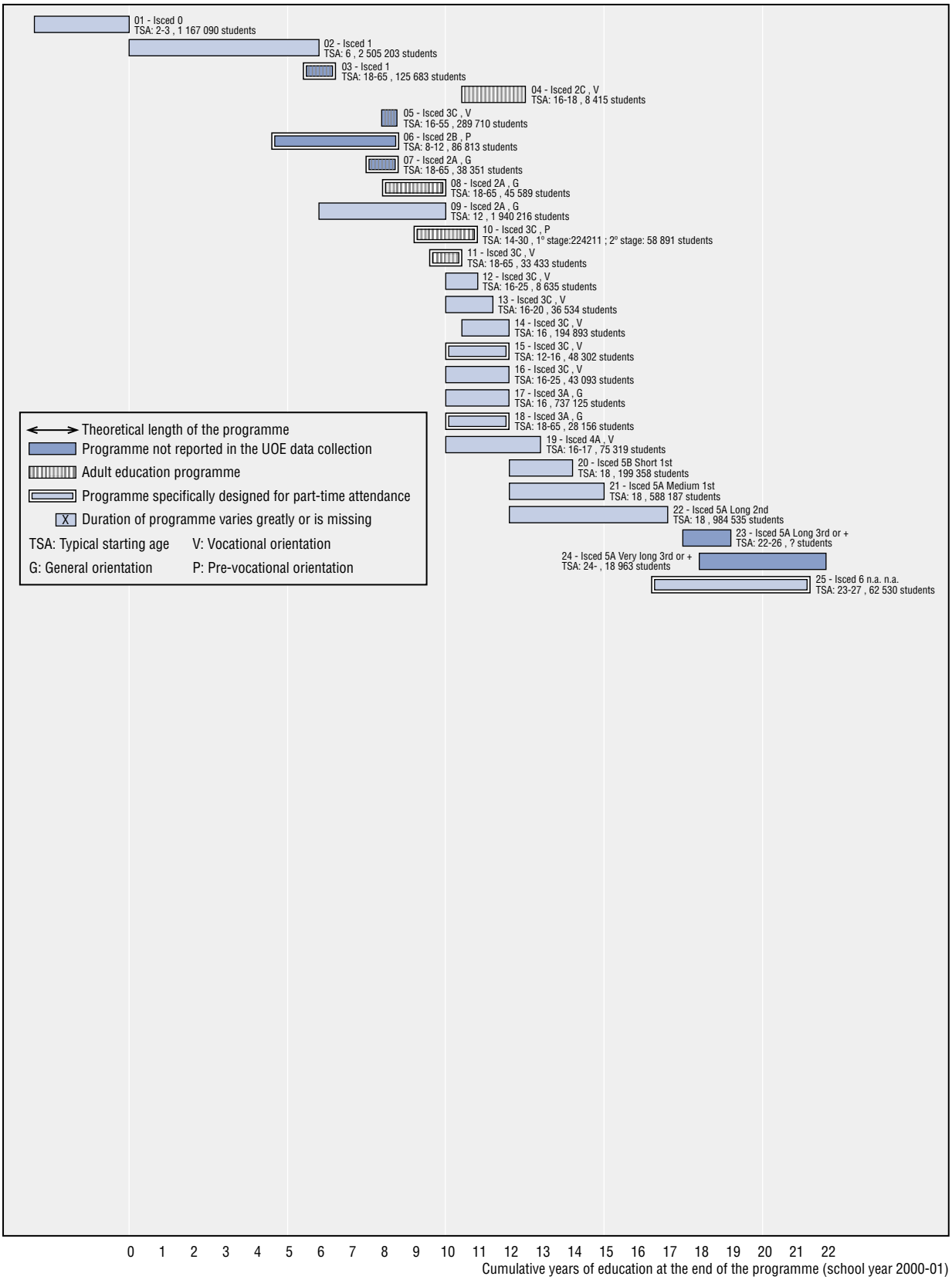


01 - Educação Pré-Escolar
(Pre-school education)
02 - Ensino Básico do 1º Ciclo
(Primary education 1st cycle)
03 - Ensino Básico do 2º Ciclo
(Primary education 2nd cycle)
04 - Ensino Básico do 3º Ciclo
(Lower secondary education)
05 - Formação Profisssional - Pré_aprendizagem
(Pre-vocational training)
06 - Educação Extra-Escolar Cursos de Actualização
(Adult education (second chance programme))
07 - Educação Extra-Escolar - Cursos de Alfabetização
(Adult education - Basic literacy programme)
08 - Ensino Recorrente (1º Ciclo)
(Basic adult education (1st cycle))
09 - Ensino Recorrente (2º Ciclo)
(Basic adult education (2nd cycle))
10 - Cursos Tecnico-Profissionais da Casa Pia -nivel I
("Casa Pia" vocational programme– level I)
11 - Escolas Profissionais Nível II
(Vocational training schools– level II)
12 - Curso Geral do Ensino Artistico
(Artistic lower secundary (Basic artistic studies (music, dance or visual arts)))
13 - Ensino Recorrente do 3º Ciclo
(Adult education – lower secondary education)
14 - Cursos de Educação e Formação Inicial
(Intial education and training)
15 - Cursos Gerais do Ensino Secundário
(Upper secondary general education)
16 - Cursos Tecnológicos do Ensino Secundário
(Upper secondary technological education)
17 - Curso Geral do Ensino Secundário Recorrente
(Adult education – upper secondary general education)
18 - Cursos Tecnológicos do Ensino Secundário Recorrente
(Adult education – upper secondary vocational education)
19 - Escolas Profissionais Nível III
(Vocational training schools– level III)
20 - Curso Complementar do Ensino Artístico (Música, Dança ou Artes Visuais)
(Upper secondary - Arts studies)
21 - Cursos de Especialização Tecnológica
(Post-secondary - Technological specialisation programme)
22 - Ensino Superior – Bacharelato
(Tertiary education – first degree)
23 - Curso de Estudos Superiores Especializados (CESE)
(Tertiary education – second degree university level by a 2 years higher education programme which is a specialization in the previous studies)
24 - Ensino Superior – Preparatórios de Licenciatura
(Tertiary education – Starting programmme to second degree university level)
25 - Licenciatura bi-etápica
(Tertiary education – second degree university level)
26 - Ensino Superior – Licenciatura
(Tertiary education – second degree university level)
27 - Ensino Superior – Licenciatura Complementos de formação
(Tertiary education – second degree university level advanced programme)
28 - Ensino Superior – Licenciatura - Parte terninal
(Tertiary education – Ending programme of second degree university level)
29 - Curso de Especialização Pós -licenciatura (Pós-graduação)
(Tertiary education –Specialized studies "pós-licenciatura")
30 - Mestrado
(Tertiary education –first advanced research qualification)
31 - Doutoramento
(Tertiary education – second advanced research qualification)

Slovak Republic

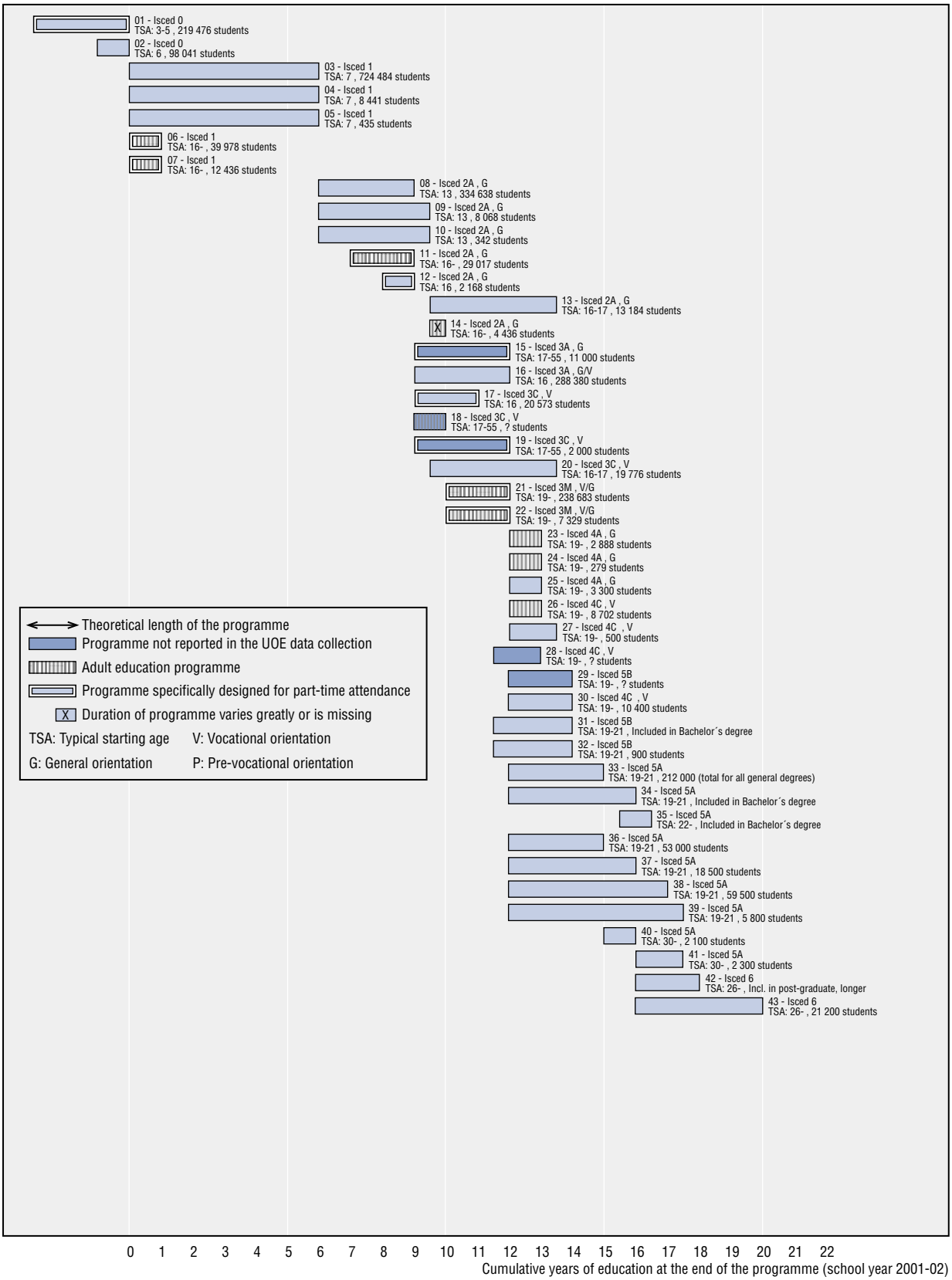
01 - Materská škola
(Kindergarten)
02 - Špeciálna materská škola
(Special kindergarten)
03 - Prípravne triedy na základnej škole
(Preparatory classes in basic school)
04 - Prípravne triedy v špeciálnych školách
(Preparatory classes in special school)
05 - Základna škola - 1.stupe
(Basic school - 1st stage)
06 - Špeciálna základná škola - 1.stupe
(Special basic school - 1st stage)
07 - Špeciálna škola typ A - 1.stupe
(Special school, Type A 1st stage)
08 - Špeciálna škola typ B - nizši a stredn stupe
(Special school,Type B - lower and middle stage)
09 - Špeciálna Škola typ B - vyšší a pracovn• stupe
(Special school, Type B - upper and working stage)
10 - U ilište
(Apprentice centre)
11 - Praktická škola
(Practical school)
12 - Špeciálna škola typ A - 2.stupe
(Special school, Type A 2nd stage)
13 - Základná škola - 2.stupe
(Basic school - 2nd stage)
14 - Špeciálna základná Škola - 2.stupe
(Special basic school - 2nd stage)
15 - Kurzy na doplnenie základného vzdelania
(Courses for complementing basic education)
16 - Štúdium jednotlivšch predmetov
(Study of selected subjects)
17 - Odborné u ilište
(Vocational school)
18 - Stredná odborná škola - štúdium bez maturity
(Specialized secondary school - programme without maturita)
19 - Stredné odborné u ilište - Štúdium bez maturity
(Vocational secondary school - programme without maturita)
20 - Rekvalifika né kurzy
(Retraining courses)
21 - Stredná odborná škola - štúdium s maturitou
(Specialized secondary school - programme with maturita)
22 - Stredné odborné u ilište - štúdium s maturitou
(Vocational secondary school - programme with maturita)
23 - 8 ro né gymnázium
(Gymnasium - 8 years)
24 - 6 ro né gymnázium
(Gymnasium - 6 years)
25 - 4 ro né gymnázium
(Gymnasium - 4 years)
26 - nadstavbové štúdium
(Follow-up courses)
27 - Pomaturitné kvalifika né štúdium
(Postsecondary qualification study)
28 - dopl ujúce pedagogické štúdium
(Supplementary pedagogical study)
29 - Pomaturitné špecializa né Štúdium
(Postsecondary specialized study)
30 - Tane né konzervatórium - 8 ro né štúdium
(Dance conservatoire - 8 years)
31 - Konzervatórium - 6 ro né
(Conservatoire - 6 years)
32 - Stredná odborná škola - 6 ro né štúdium
(Specialized secondary school - 6 years)
33 - Vyššie odborné štúdium
(Higher professional studies)
34 - dopl ujúce pedagogické Štúdium
(Supplementary pedagogical study)
35 - rozširujúce štúdium na vyu ovanie
(Extensive study for teaching)
36 - Bakalárske štúdium
(Bachelor university study)
37 - 4 ro né magisterské Štúdium
(Master university study - 4 years)
38 - Magisterské a in inierske Štúdium
(Master and Engineering study)
39 - Doktorské a in inierske štúdium
(Doctoral and Engineering study)
40 - Štátne rigorózne skúšky
(State examina rigorosa)
41 - Doktorandské štúdium
(PhD. study)
42 - alšie vzdelávanie organizované univerzitami
(further education organized by universities)
43 - štúdium cudzích jazykov na jazykovej •kole
(Foreign language study at a language school)

Spain



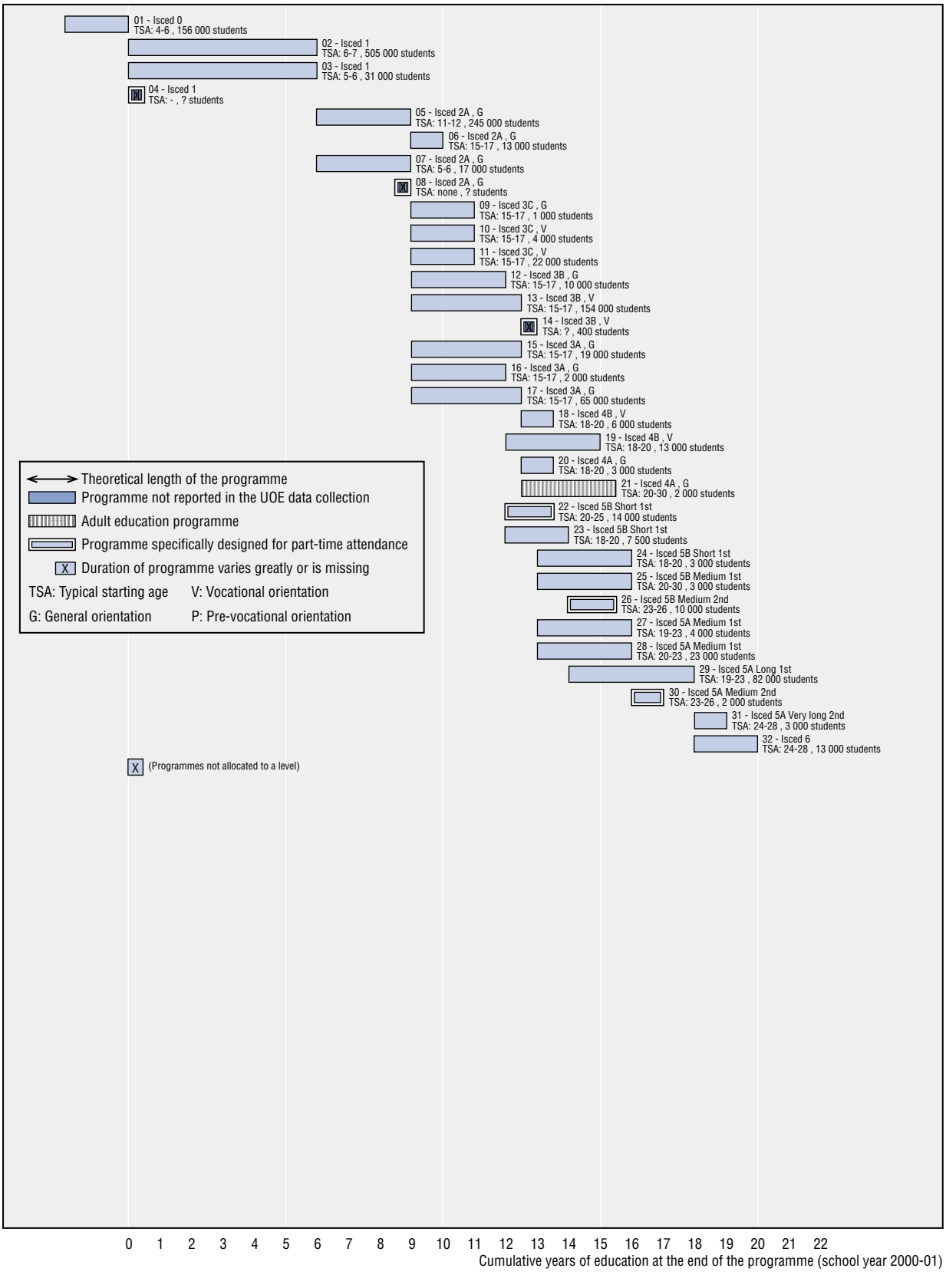
01 - Educación Infantil
(Pre-school education)
02 - Educación Primaria
(Primary education)
03 - Enseñanzas Iniciales de Educación Básica para personas en edad adulta
(Adult education – primary level)
04 - F.P. Aprendizaje de Tareas / Transición a la vida adulta
(Vocational training – special education)
05 - Formacion ocupacional
(Occupational training)
06 - E. de la Danza y la Música-Grado Elemental
(Dance and Music studies – elementary level)
07 - Enseñanzas de adultos conducentes al Certificado de Escolaridad y al Graduado Escolar
(Adult education-lower secondary level)
08 - Educación Secundaria para Adultos
(Adult lower secondary education)
09 - Educación Secundaria Obligatoria
(compulsory-lower secondary education)
10 - Escuelas Oficiales de Idiomas
(Language studies at the official school languages)
11 - F.P. I para Adultos
(Vocational training – first tier – adult education)
12 - Casas de oficio
(Craft trades)
13 - Programas de Garantía Social
(Vocational training for young people without qualifications)
14 - Ciclos Formativos de Grado Medio
(Vocational training – intermediate level)
15 - E. de la Danza y de la Música-Grado Medio
(Dance and Music studies – intermediate level)
16 - Escuelas taller
(Workshop training)
17 - Bachillerato
(General upper secondary education)
18 - Bachillerato (Distancia)
(General upper secondary education (distance learning))
19 - Formación Profesional II
(Vocational training – second tier)
20 - Ciclos Formativos de Grado Superior
(Specific vocational training – advanced level)
21 - Diplomatura Universitaria
(University education – first degree)
22 - Licenciatura universitaria
(University education – first and second cycle)
23 - Master y Estudios Postgrado de las Universidades
(Post-degree studies of universities)
24 - Especialidades Sanitarias
(Post-degree health studies (specialist))
25 - Doctorado
(University education – Doctorate)

Sweden



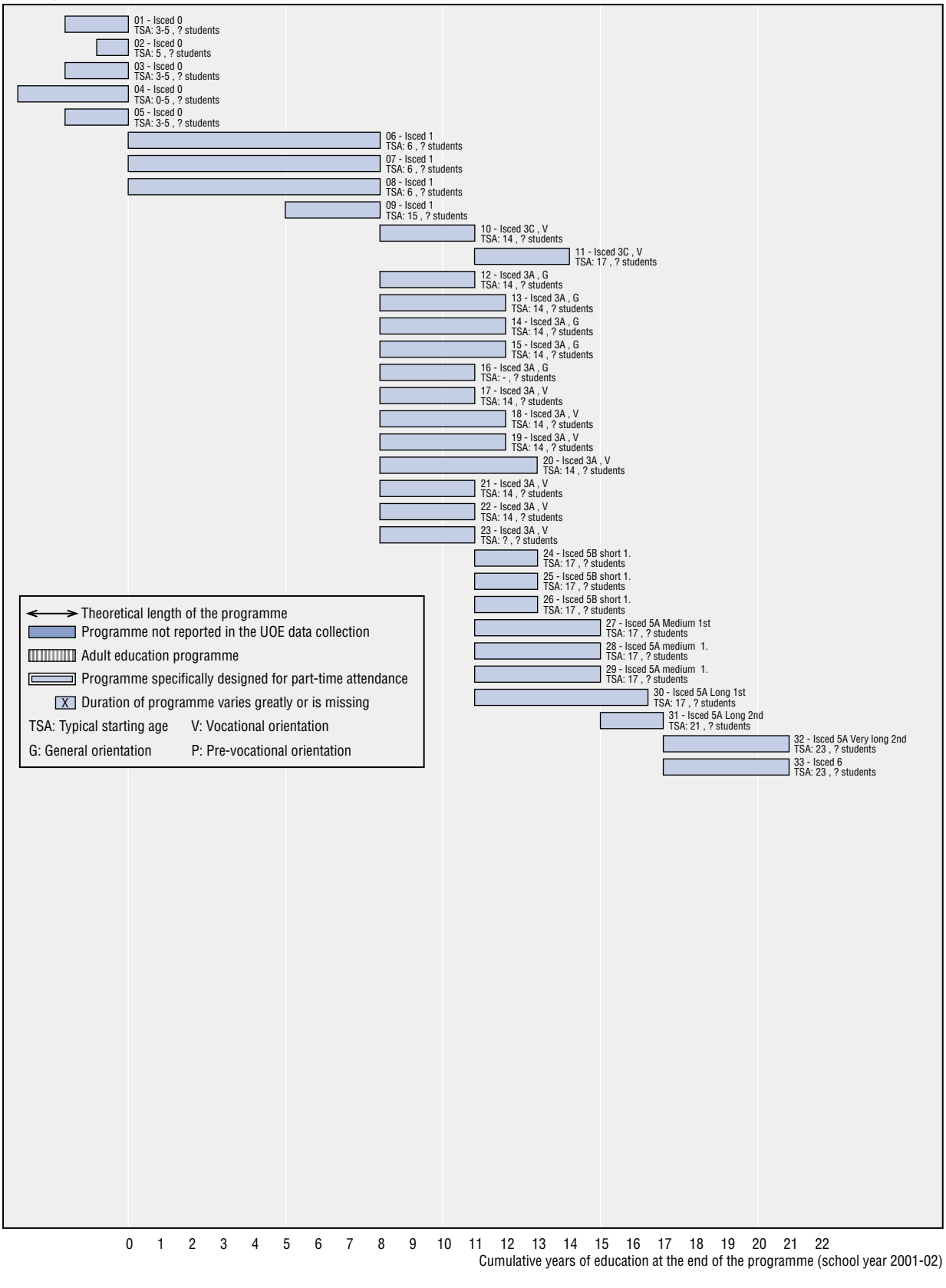
01 - Förskola för barn/elever 3 år eller äldre
(Pre-school, for children/pupils 3 years of age or older)
02 - Förskoleklass
(Pre-school classes)
03 - Grundskolan, skolår 1-6.
(Compulsory school, grades 1-6.)
04 - Obligatorisk särskola, skolår 1-6.
(Special school for the intellectually disabled, grades 1-6.)
05 - Specialskolan, skolår 1-6
(Special school for pupils with impaired vision, hearing or speech defects, grades 1-6.)
06 - Svenska för invandrare
(Swedish for immigrants)
07 - Grundläggande vuxenutbildning - läs- och skrivinlärning (Komvux)
(Adult education - basic adult education in reading and writing)
08 - Grundskolan, skolår 7-9.
(Compulsory school, grades 7-9.)
09 - Obligatorisk särskola, skolår 7-10.
(Special school for the intellectually disabled, grades 7-10.)
10 - Specialskolan, skolår 7-10
(Special school for pupils with impaired vision, hearing or speech defects, grades 7-10.)
11 - Grundläggande vuxenutbildning (Komvux)
(Adult education - basic adult education)
12 - Gymnasieskolan - individuella program bestående av grundskolekurser.
(Upper secondary school - individual programme at compulsory school level.)
13 - Gymnasiesärskolan - yrkes och verksamhetsträning
(Upper secondary education for pupils with learning disabilities - occupational training within the framework of upper secondary level)
14 - Särvux, grundsärskolenivå och träningsskolenivå.
(Adult education for people with learning disabilities, compulsory level schooling and training in sensory development, social and practical skills.)
15 - Folkhögskolan allmän inr
(Folk high school, general)
16 - Gymnasieskolan
(Upper secondary school)
17 - Gymnasieskolan - individuella program
(Upper secondary school - individual programme)
18 - Arbetsmarknadsutbildning
(Labour market training)
19 - Folkhögskolan yrkes
(Folk high school, vocational)
20 - Gymnasiesärskolan - nationella och specialutformade program
(Upper secondary education for pupils with learning disabilities - national and specially designed programmes)
21 - Gymnasial vuxenutbildning (Komvux)
(Adult education - upper secondary adult education)
22 - Statens skola för vuxna - Gymnasial vuxenutbildning
(National state school for adults - upper secondary adult education)
23 - Vuxenutbildning - Påbyggnadsutbildningar, tekniskt basår och andra studieförberedande utbildningar (Komvux)
(Adult education - post-secondary training programmes, preparatory for futher studies)
24 - Statens skola för vuxna - Påbyggnadsutbildningar, tekniskt basår och andra studieförberedande utbildningar
(National state school for adults - post-secondary training programmes, preparatory for futher studies)
25 - Tekniskt basår
(Technical Foundation Year)
26 - Vuxenutbildning - Påbyggnadsutbildningar, övriga (Komvux)
(Adult education - post-secondary training programmes, others)
27 - Yrkesteknisk högskoleutbildning, YTH
(Post-secondary vocational training)
28 - Kompletterande utbildningar, 1-1,5 år.
(Supplementary education programmes, 1-1.5 years.)
29 - Kompletterande utbildningar, 2 år eller längre.
(Supplementary education programmes, 2 years or longer.)
30 - Kvalificerad yrkesutbildning
(Advanced Vocational Education)
31 - Högskoleutbildning kortare än tre år
(Tertiary education < 3 years)
32 - Högskoleutbildning kortare än tre år
(Tertiary education < 3 years)
33 - Högskoleutbildning 3 år
(Tertiary education 3 yrs)
34 - Högskoleutbildning 3.5-4 år
(Tertiary education 3.5-4 yrs)
35 - Högskoleutbildning, magisterexamen med ämnesbredd
(Tertiary education, Master's degree, broad version)
36 - Högskoleutbildning 3 år
(Tertiary education 3 yrs)
37 - Högskoleutbildning 3.5-4 år
(Tertiary education 3.5-4 yrs)
38 - Högskoleutbildning 4.5-5 år
(Tertiary education 4.5-5 yrs)
39 - Högskoleutbildning > 5 år
(Tertiary education > 5 yrs)
40 - Högskoleutbildning, påbyggnad
(Tertiary education, second degree)
41 - Högskoleutbildning, påbyggnad
(Tertiary education, second degree)
42 - Forskarutbildning
(Post-graduate education, shorter)
43 - Forskarutbildning
(Post-graduate education, longer)

Switzerland



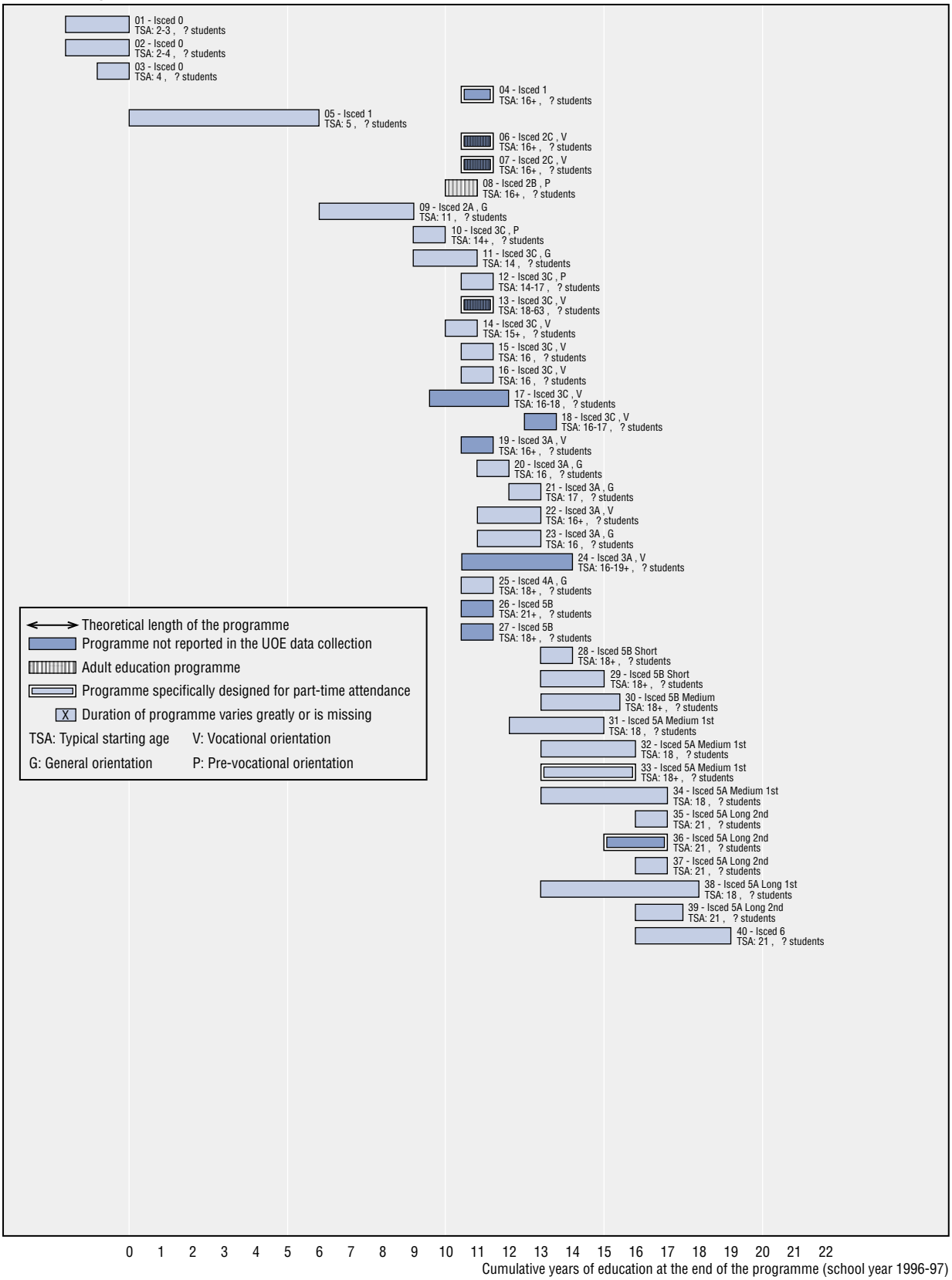
01 - Vorschule, préscolarité, prescolarità
(Kindergarten)
02 - Primarschule, école primaire, scuola elementare
(primary school)
03 - Besonderer Lehrplan, programme d'enseignement spécial, programma scolastico speciale
(special needs education programmes)
04 - Alphabetisierungsprogramm
(Programmes for adults in basic literacy skills)
05 - Sekundarschule, Realschule, Oberschule, (Pro-)Gymnasium, Cycle d'orientation, Scuola media
(secondary education, first stage)
06 - 10. Schuljahr, Vorkurs, préapprentissage, corsi preparatori
(preparatory course for vocational education, 1 year)
07 - Besonderer Lehrplan, programme d'enseignement spécial, programma scolastico speciale
(special needs education programmes)
08 - Vorbereitung auf Real- und Sekundarschulabschluss
(Programmes for adults to prepare for exams of secondary education, first stage)
09 - Allgemeinbildende Schule, école de culture générale, 2 Jahre/années
(general education programmes, short)
10 - Anlehre, formation professionnelle élémentaire, formazione empirica
(elementary vocational education, dual system)
11 - Berufslehre, Berufsbildung, apprentissage, formation professionnelle, 2 Jahre/années
(vocational education, in school or in the dual system, 2 years))
12 - Diplommittelschule, école de degré diplôme, scuola di formazione generale, 3 Jahre/années
(intermediate diploma school – 3 years)
13 - Berufslehre, Berufsbildung, apprentissage, formation professionnelle, formazione professionale, 3 und/et 4 Jahre/années
(vocational education, in school and in the dual system, 3 and 4 years)
14 - Vorbereitung auf Fähigkeitsprüfung nach Art. 41 BBG
(For adults: preparation for the vocational education exam (Art. 41))
15 - Berufsmaturität, maturité professionnelle, maturità professionale, 3 und/et 4 Jahre/années
(vocational baccalaureat, dual system, 3 and 4 years)
16 - Primarlehrerseminar I
(teacher training I)
17 - Gymnasiale Maturität, maturité gymnasiale, maturità
(school preparing for the university entrance certificate)
18 - Berufliche Zweitausbildung auf Sekundarstufe II
(second vocational programmes at upper secondary level (1 year))
19 - Ausbildung für Krankenpflege und medizinische Berufe, formation pour les professions de la santé, 3 Jahre/années
(vocational education for health professions, 3 years)
20 - Berufsmaturität nach der Lehre, maturité professionnelle après l'apprentissage, 1 Jahr/année
(vocational baccalaureate after obtaining the certificate of vocational education, 1 year)
21 - Gymnasiale Maturität für Erwachsene, maturité gymnasiale – programmes pour adultes
(school preparing for the university entrance certificate for adults)
22 - Berufsprüfung, examen professionnel
(higher vocational education, stage I)
23 - Höhere Fach- und Berufsschule, école technique
(technical school)
24 - Primarlehrerseminar II
(teacher training II)
25 - Höhere Fachschule, école professionnelle supérieure, scuola professionale superiore
(full-time higher vocational college)
26 - Höhere Fachprüfung, examen professionnel supérieur
(higher vocational education, stage II)
27 - Pädagogische Hochschule, haute école spécialisée pédagogique
(pedagogical university)
28 - Fachhochschule, haute école spécialisée, scuole universitarie professionali
(university of applied science)
29 - Hochschulen, hautes écoles; Lizentiat, licence, Diplom
(university diploma)
30 - Fachhochschule Nachdiplom, haute école spécialisée diplôme postgrade
(Fachhochschule, post-graduate)
31 - Universität Nachdiplom, troisième cycle, diplôme postgrade
(university post-graduate)
32 - Doktorat, doctorat
(university doctorate)
33 - (Programmes not allocated to a level)

Turkey



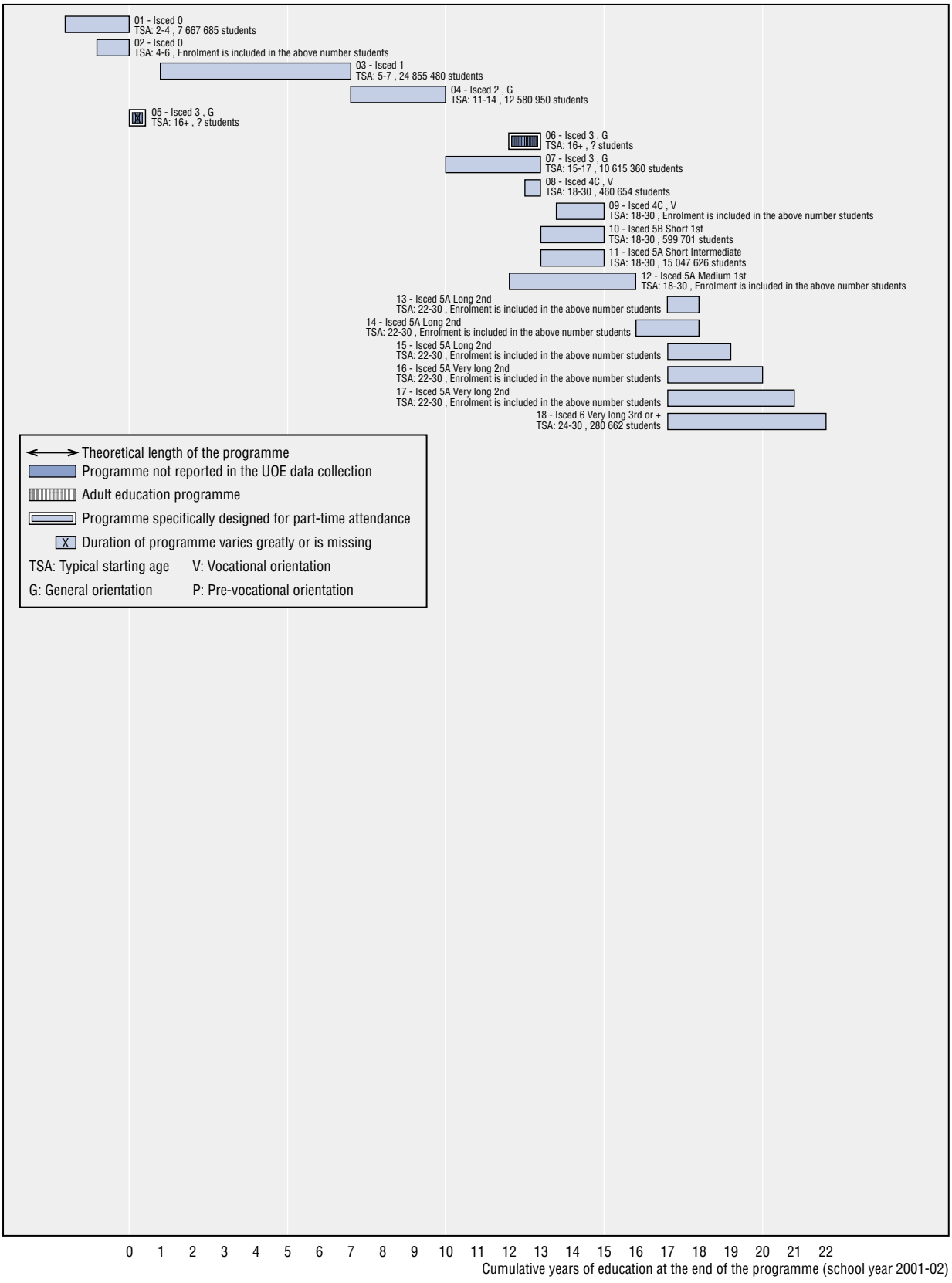
01 - Uygulamal ana okulu (practising nursery)
02 - Ana s n f (nursery class)
03 - Ana okulu (kindergarten)
04 - Kre (Early childhood care and education:day nursery)
05 - Özel e itim ana s n f ve ana okulu (special education nursery class and kindergarden)
06 - Ilkögretim (primary education)
07 - Özel e itim ilkö retim okullar (special education primary schools)
08 - Özel e itim ilkö retim okullar (special education primary schools)
09 - Aç k lkö retim (open primary school)
10 - Ciraklik Egitimi (apprenticeship training)
11 - Ciraklik Egitimi (apprenticeship training)
12 - Genel ortaö retim okullar (General high schools)
13 - Anadolu Liseleri (Anadolu high schools)
14 - High school with intensive foreign language teaching
15 - Fen liseleri (Science high schools)
16 - Aç k genel lise (open high school)
17 - Meslek liseleri (Vocational high schools)
18 - Anadolu meslek liseleri (Anadolu vocational high schools)
19 - Teknik Liseler (Technical high schools)
20 - Anadolu Teknik Liseleri (Anadolu technical high schools)
21 - itme engelliler için Çok programl liseler (multi-programmed h.s. For students with hearing disabilities)
22 - Ortopedik engelliler için meslek liseleri (Voc. h.s.for students with orthopaedic disabilities)
23 - Aç k meslek lisesi (Open vocational high school)
24 - Meslek Yüksek Okulla (vocational higher schools)
25 - Aç k ö retim fakültesi (open training faculties)
26 - itme engelliler entegre yüksek okulu (Integrated higher school for hearing impaired)
27 - Fakülteler (faculties)
28 - Aç k ö retim fakültesi (open training faculties)
29 - itme engelliler entegre yüksek okulu (Integrated higher school for hearing impaired)
30 - Faculties-Dentistry, Veterinary, Medicine
31 - Postgraduate
32 - Tipta Uzmanlik (specialization in medicine)
33 - Doktora (Ph.D.)

United Kingdom



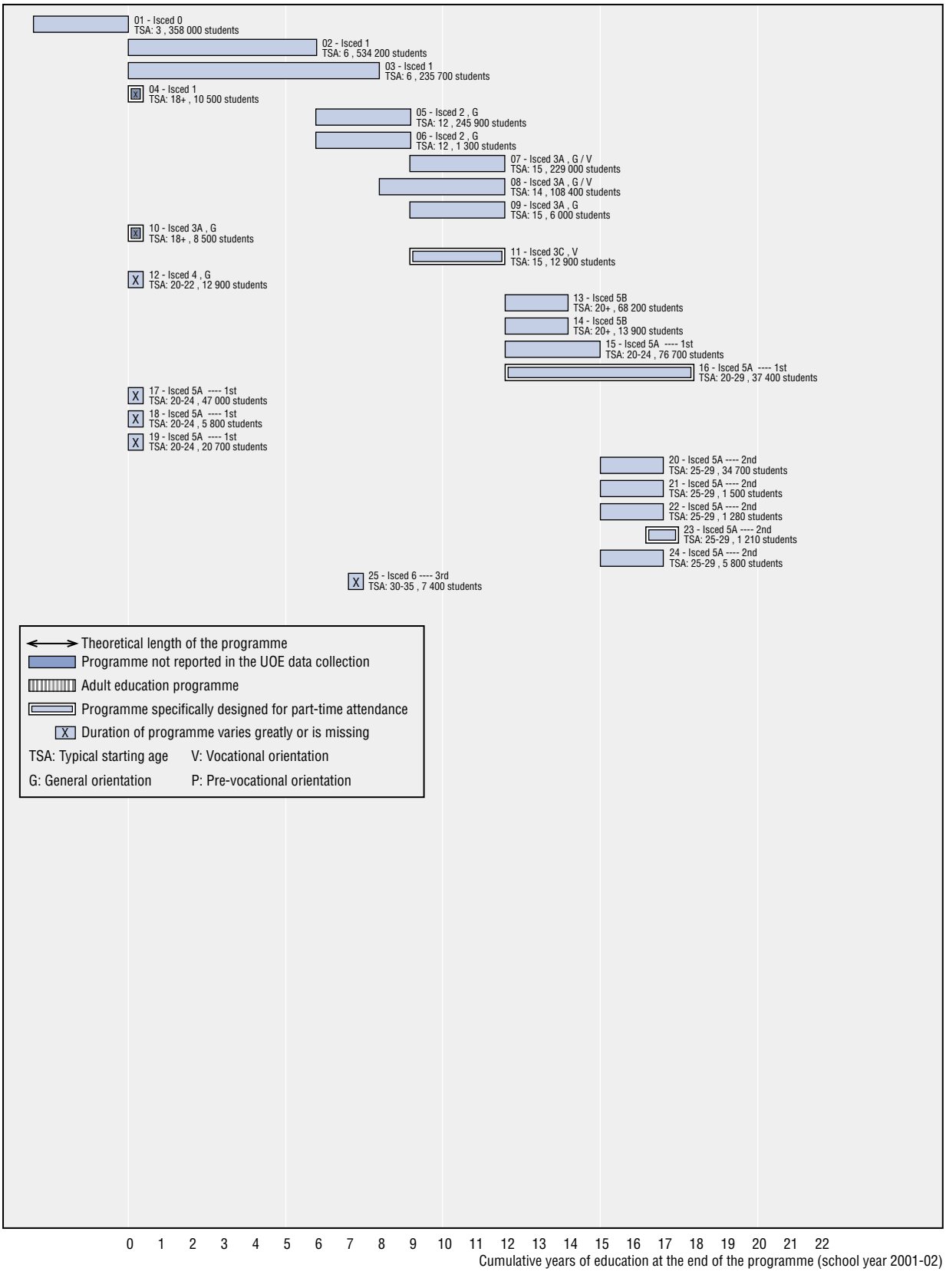
01 - Nursery schools and classes
02 - Playgroups and day nurseries
03 - Reception classes
04 - Adult literacy and numeracy
05 - Primary school
06 - Employer supported off-the-job
07 - Employer supported on-the-job trainin
08 - Skillstart (Scotland only)
09 - Secondary school (age <14)
10 - GNVQ [GSVQ] Foundation Level
11 - GCSE courses/SCE standard grades
12 - SCOTVEC National Certificate Modules
13 - Work-based training for adults
14 - GNVQ [GSVQ] Intermediate Level
15 - Activities leading to NVQ Level 2 and equivalent
16 - Activities leading to NVQ Level 1 and equivalent
17 - Traditional apprenticeships
18 - Work-based training for young people (including national traineeships)
19 - Activities leading to NVQ Level 3 and equivalent
20 - SCE Higher Grade
21 - Scottish Certificate of Sixth Year Studies
22 - GNVQ [GSVQ] Advanced Level
23 - GCE Advanced Level
24 - Modern Apprenticeships (MAs)
25 - HE Access Courses
26 - Activities leading to NVQ Level 5 and equivalent
27 - Activities leading to NVQ Level 4 and equivalent
28 - Higher National Certificate (HNC)
29 - Higher National Diploma (HND)
30 - Diploma in HE (including nurses training)
31 - Bachelor's degree, 2 years (accelerated)
32 - Bachelor's degree, 3 years
33 - Open University (Bachelor's degree)
34 - Bachelor's degree, 4 years
35 - Master's degree (taught)
36 - Professional post-graduate on-the-job training
37 - Post-graduate diplomas and certificates
38 - Bachelor's degree, 5+ years
39 - Master's degree (by research)
40 - Doctorate

United States



01 -
Preschool or pre-kindergarten
02 - Kindergarten
03 - Primary education
04 - Middle education (grades 7-9)
05 - English as a second language
06 - GED or H.S. Equivalency Programme
07 - Secondary education (grades 10-12)
08 - Vocational Certificate (< 1 year)
09 - Vocational Certificate (1-2 years)
10 - Vocational Associate's Degree Programme
11 - Academic Associate's Degree Programme
12 - Bachelor's Degree Programme
13 - Post-graduate certificate programme (e.g. teaching)
14 - Master's degree programme (short)
15 - Master's degree programme (long)
16 - First Professional Degree Programme
17 - 1st Professional Degree Programme – Medical
18 - Doctorate (Ph.D. – Research)

Israel



01 - Kindergarten
(Pre-primary)
02 - Six-year primary education
(Primary)
03 - Eight-year primary education
(Primary)
04 - Basic education for adults
(Basic education for adults)
05 - Lower Secondary Education
(Lower Secondary)
06 - Other Jewish religious lower secondary education
(Lower Secondary)
07 - Three-year upper secondary education
(Upper Secondary)
08 - Four-year upper secondary education
(Upper Secondary)
09 - Other Jewish religious upper secondary education
(Upper Secondary)
10 - Secondary Education for Adults
(Upper Secondary Education for adults)
11 - Apprenticeship & Industrial Schools
(Upper Secondary)
12 - Pre-academic preparatory programs
(Post-secondary non-tertiary)
13 - Post-Secondary Education
(Tertiary Non-University)
14 - Teacher training colleges - non-academic track
(Tertiary Non-University)
15 - Bachelor's Degree from universities
(Tertiary First Degree-University)
16 - Bachelor's Degree from the Open University
(Tertiary First Degree-University)
17 - Bachelor's Degree from Academic Colleges
(Tertiary First Degree-College)
18 - Bachelor's Degree from foreign affiliated universities
(Tertiary First Degree-Foreign universities)
19 - Teacher training colleges - Academic track
(Tertiary First Degree-Teacher training college)
20 - University's Second Degree
(Tertiary second academic degree)
21 - University's Post-Graduate Diploma
(Post-graduate programs)
22 - Second Degree from Academic Colleges
(Tertiary second academic degree)
23 - Second Degree from the Open University
(Tertiary second academic degree)
24 - Second Degree from foreign affiliated universities
(Tertiary second academic degree)
25 - Third Degree
(Doctorate programme)

INDEX

G

H

I

L

M

N

O

P

Q

R

S

T

U

V

W

REFERENCES

ETF (1999), *Education and indicators in the PHARE countries: 1996/97*, ETF, Torino

Eurostat (1999), *Fields of Education and Training – Manual*, EUROSTAT

Eurostat (2003), *Regions - Nomenclature of territorial units for statistics – NUTS 2003*, EUROSTAT

OECD (1989), *Frascati Manual 1980: The Measurement of Scientific and Technical Activities: Standard Practice for Surveys of Research and Experimental Development*, OECD, Paris

OECD (1992), *Education at a Glance: OECD Indicators*, OECD, Paris

OECD (1999), *Classifying educational programmes: Manual for the implementation of ISCED-97 in OECD countries*, OECD, Paris

OECD (2000a), *Special Needs Education: Statistics and Indicators*, OECD, Paris

OECD (2000b), *Investing in Education: Analysis of the 1999 World Education Indicators*, OECD, Paris

OECD (2003a) *Education at a Glance: OECD Indicators*, OECD, Paris

OECD (2003b), *Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development*, OECD, Paris

OECD (2004), *Completing the Foundation for Lifelong Learning: An OECD Survey of Upper Secondary Schools,* OECD, Paris

Rychen D.S. and Salganik L.H. (Eds.). (2003), *Key Competencies for a Successful Life and a Well-Functioning Society*, Hogrefe & Huber, Göttingen

SNA (1993), *The System of National Accounts 1993,* United Nations, New York

UNESCO (1997), *The International Standard Classification of Education: ISCED-97*, UNESCO, Paris

Questionnaire on the quality of OECD publications

We would like to ensure that our publications meet your requirements in terms of presentation and editorial content. We would welcome your feedback and any comments you may have for improvement. Please take a few minutes to complete the following questionnaire. Answers should be given on a scale of 1 to 5 (1 = poor, 5 = excellent).

Fax or post your answer before 31 December 2004, and you will automatically be entered into the prize draw to **win a year's subscription to *OECD's Observer magazine***.*

A. Presentation and layout

1. What do you think about the presentation and layout in terms of the following:

	Poor	Adequate			Excellent
Readability (font, typeface)	1	2	3	4	5
Organisation of the book	1	2	3	4	5
Statistical tables	1	2	3	4	5
Graphs	1	2	3	4	5

B. Printing and binding

2. What do you think about the quality of the printed edition in terms of the following:

Quality of the printing	1	2	3	4	5
Quality of the paper	1	2	3	4	5
Type of binding	1	2	3	4	5
Not relevant, I am using the e-book	❑				

3. Which delivery format do you prefer for publications in general?

Print ❑ CD ❑ E-book (PDF) via Internet ❑ Combination of formats ❑

C. Content

4. How accurate and up to date do you consider the content of this publication to be?

1 2 3 4 5

5. Are the chapter titles, headings and subheadings…

Clear Yes ❑ No ❑
Meaningful Yes ❑ No ❑

6. How do you rate the written style of the publication (*e.g.* language, syntax, grammar)?

1 2 3 4 5

D. General

7. Do you have any additional comments you would like to add about the publication?

.....

.....

.....

Tell us who you are:

Name: ..... **E-mail:** .....

Fax: .....

Which of the following describes you?

IGO ❑ NGO ❑ Self-employed ❑ Student ❑
Academic ❑ Government official ❑ Politician ❑ Private sector ❑

Thank you for completing the questionnaire. Please fax your answers to: (33-1) 49 10 42 81 or mail it to the following address:
Questionnaire qualité PAC/PROD, Division des publications de l'OCDE
23, rue du Dôme – 92100 Boulogne Billancourt – France.

Title: OECD Handbook for Internationally Comparative Education Statistics

ISBN: 92-64-10410-0 OECD Code (printed version): 962004031P1

* Please note: This offer is not open to OECD staff.

OECD PUBLICATIONS, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(96 2004 03 1P) – ISBN 92-64-10410-0 No. 53435 2004