

Session Number : 6
Session Title : Education - international databases and comparisons
Session Chair : Joe GRICE

Paper prepared for the joint OECD/ONS/Government of Norway workshop
"Measurement of non-market output in education and health"

London, Brunei Gallery, October 3 – 5, 2006

**Project of updating the UOE collection
(education accounts)**

Lene MEJER, Eurostat
unit F4 'Education, science and culture statistics'

For additional information, please contact :

Author name(s) : Lene MEJER
Author address(es) : Eurostat, L-2920 Luxembourg, Luxembourg
Author E-mail(s) : Lene.MEJER@ec.europa.eu
Author fax(es) :
Author telephone(s) : (00 352) 4301 35423

This paper is posted on the following website :
http://www.oecd.org/document/34/0,2340,en_2649_33715_36450978_1_1_1_1,00.html

Abstract

The UOE (UNESCO-UIS/OECD and Eurostat) collection of education data covers a large number of countries. Annual data are collected on enrolments, entrants, graduates, personnel, finance of education etc. Data come from a number of mainly administrative sources. The present framework for collecting data on education finance is described in the UOE manual and is to a large extent based on the Government Finance Statistics' manual from 1986. Hence there is a need for updating the UOE framework including looking at the coherence and comparability of data with other statistical sources such as NA and government finance statistics.

This document shortly introduces some basic concepts of accounting frameworks used in the Government Finance Statistics (GFS) manual of International Monetary Fund (IMF) and in the national accounts. It then lists some of the elements that are presently missing in the actual UOE data collection framework, but which are necessary for developing an accounting framework which follows national account standards. It also shows some first comparisons of data coming from the UOE data collection and those based on the COFOG classification. Finally, it outlines possible short-, medium- and long-term objectives with the aim to develop accounts on education in the context of the UOE data collection. This document has been discussed in a Task Force, spring 2006, on a multi-annual approach for assessment and improvement of the quality of the UOE data collection and by the Education and Training Statistics Working Group in September 2006.

1.0 Introduction

This document is a slightly updated version of a document which was first discussed in a Eurostat Task Force on the UOE (UIS/UNESCO, OECD and Eurostat) data collection during spring 2006 and then by the Education and Training Statistics Working Group meeting in September. In this context, the subject for the UOE collection is to develop what is broadly understood as 'education accounts'. The education finance figures collected through the UOE is shortly described below.

The vision to develop a framework for accounts in education statistics is not new. Eurostat has been envisaging such a development since the late 1990's. In 2001, Eurostat produced a discussion paper on education and national accounts. It provides an overview of the education domain in the European System of National Accounts (ESA 1995), describing both the concepts and the data availability. It examined concepts on education expenditure in the national accounts and compared them to those employed in the UOE data collection framework.

At national level, activities have also been carried out during many years by some Member States (France, the Netherlands¹ and the United Kingdom²) and Norway³. The French satellite education accounts which date back to the 1980's were a source of inspiration for designing the initial UOE data collection framework in the early 1990's.

This document contains a number of proposals for developing the methodology and data on education finance. In this connection, it is understood that the development of a System of Education Accounts is a long-term and demanding project implying resources at international and national level. This asks for an interest from Member States for this type of project and also an agreement on how the more organisational aspects of such a project should be defined and carried out. Regarding organisational aspects then the use of available UOE/NA expertise should be explored so that the work burden of carrying out the project should not fall solely on the shoulders of the UOE data requesters and national UOE data providers.

In this connection it would also be important that the UOE data requesters would work together on this; - that national methodologies/sources used for the UOE finance data are well understood and, - that quality requirements as comparability, coherence, timelines and reliability are assessed. The Survey on Country Profiles (see published report) do already contain some information as does the documents which over the years have been presented at INES Technical Group (OECD) and Eurostat meetings.

¹ In 1999, the CSB of the Netherlands drafted a document called "proposals for the development of a System of Education and Training Accounts" which proposed an integration of various data sources of the European Statistical System in order to arrive at the most comprehensive picture on the participation in education and training in the European Union.

² Atkinson review

³ OECD project led by Norway on assessing the value added at school

2.0 The UOE data collection

The joint UIS-UNESCO/OECD/Eurostat (UOE) data collection on education statistics and the attached Eurostat data collection on regional enrolments and foreign language learning are carried out under a gentlemen's agreement (a legislative act is foreseen for 2007-2008). The methodological requirements are set up in cooperation with the participating countries, OECD, UNESCO and Eurostat. The manual (concepts, definitions and methodological requirements plus three questionnaires) are available on the site address:

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

Data are in general available from 1998; a few series from before then. The data collection has been developing on an ad-hoc basis responding to policy needs at international level, - it has been enlarged significantly during the last years.

The following are examples of data published with the UOE as source: distribution of pupils/students by level, participation/enrolment in education (ISCED 0-4), tertiary education participation, participation/enrolment in education by sex, tertiary education graduates, teaching staff (ISCED 1-3), pupil/students-teacher ratio and average class size (ISCED 1-3), language learning (ISCED 1-3), regional enrolments, expenditure on education in current/constant prices and as % of GDP, total public expenditure on education, expenditure on public educational institutions, expenditure on public and private educational institutions, financial aid to students, funding of education.

The UOE data collection on education statistics covers the 25 EU Member States (Belgium, Czech Republic, Denmark, Germany, Estonia, Greece, Spain, France, Ireland, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Hungary, Netherlands, Austria, Poland, Portugal, Slovenia, Slovak Republic, Finland, Sweden and United Kingdom), the EFTA/EEA countries (Iceland, Liechtenstein, Norway and Switzerland), the candidate countries (Bulgaria, Croatia, Romania and Turkey), South-East European countries (Albania and FYR of Macedonia) as well as OECD Member States situated outside Europe (Australia, Canada, Japan, Korea, Mexico, New Zealand, United States) and other countries (e.g. Israel).

The statistics refer to education in the ordinary school and university system, as defined in the International Standard Classification of Education (ISCED). The basic unit of classification in ISCED-97 is the educational programme.

The UOE data collection covers 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. They cover school-based general education and vocational education/training (including combined school- and work-based programmes such as dual system apprenticeship). Exclusively (initial and continuing) work-based training is not included in the statistics. Programmes or studies designated as 'adult education' or 'continuing education' are included only if the content is similar to regular educational programmes or lead to

similar potential qualifications. The data collection covers all of a country's domestic educational activity (i.e. within its own territory).

Data on educational expenditure are compiled on a cash accounting rather than an accrual accounting basis as many countries use/used this system to record government expenditure and revenues. Expenditure 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.

At the Education and Training Statistics Working Group meeting in September 2006 the delegates agreed the following regarding the proposals set out in this paper:

' The need for updating the accounting framework used in the UOE was underlined as was the emphasis on identifying educational functions compared to the institutional breakdown which is now used in the UOE. Both Eurostat and delegates underlined the need for co-operation with OECD and UNESCO in this field. Eurostat underlined that the strategy would be, on the one hand, to identify and propose ameliorations to the methodological framework (also through analysis of data) and, on the other hand, to identify and describe what is measured at national level. The plan would be to do this via consultants in order to prevent that delegates should be burdened with additional work. Resources have been set aside at Eurostat to deal with this project and ideally the work would already start towards the end of the year.

.....

Eurostat concluded the point by stating that the ETS WG was of the same opinion as the UOE Task Force that the first phase of the project could be launched, - and given resources, this could be planned to be a rather in-depth study. The ETS WG would be informed about international activities in this area and the involvement of countries would depend on their concrete experience regarding establishing education accounts. However, at some stage there would probably be a review of all countries,' (see draft minutes of ETS Working Group).

3.0 Accounting frameworks:

Starting a discussion about accounts on education in relation to the UOE data collection necessarily implies beginning with an overview of some basic concepts of the main existing accounting frameworks:

- government finance statistics manual of IMF,
- system of national accounts in general (SNA93 and ESA95) and
- more specifically satellite accounts.

The educational finance framework of the UOE data collection was largely designed on the basis of the French Satellite Accounts on Education and on the concepts defined in the 1986 GFS manual of IMF.

There is already experience in a number of statistical areas in implementing accounting frameworks as the European System of integrated Social Protection Statistics (ESPROSS, which has existed for many years at EU level), the System of Health Accounts, agricultural accounts, tourism accounts as well as labour accounts. These efforts at EU level reflect developments in national statistical offices where accounting frameworks are well-developed in some countries (the UOE data collection is often shared responsibility between NSIs and education ministries).

Finally, it should be recalled that even though the UOE methodology and data collection covers the main parts of what can be grouped as education then some parts are not covered also in comparison with national accounting standards. Most importantly, informal/non-formal learning is not covered. It is therefore important to define the coverage of the UOE data collection explicitly as a matter of looking at coherence between data sources.

4.0 Main elements which the actual UOE data collection framework is lacking to comply with national accounts standards.

The UOE collection contains two specific tables related to education finance; 'finance1' which collects information on education expenditure by level of education and source and type of transaction. 'Finance 2' collects information on education expenditures by level of education, nature plus resource category. In addition to these two tables, a further table aligns information on education finance with pupil/student enrolment figures, - also by level of education. Hence, the UOE data collection framework is limited to some elements of current accounts. Even though no revenues are collected, it illustrates the 'de facto' distribution of revenue to educational institutions by collecting the expenditure of the sources of funds

Some elements, where the current UOE data collection framework is not explicit or/and lacking for complying with national accounts standards are tentatively listed below:

- Shift from concept of expenditure to expense,
- Record also revenues of sectors,
- Modify time of recording (shift from cash accounting to an accrual basis),
- Record not only transactions but all flows (hence including any kind of non-monetary transactions),
- Introduce balance sheets, all elements of current accounts and accumulation accounts,
- Collect data on stocks and integrate flows and stocks to an integrated system,
- Measure not only financial transactions, but also production, generation, income (to the extent possible), consumption.

The point of this tentative list is to have a first identification of issues which should be treated in regard to assessing the UOE compliance with accounting standards. It does not presume any changes towards these standards.

5.0 Short-term: identify and list common points and differences

Identifying and listing the common points and differences in the accounting frameworks of the UOE data collection and of National Accounts could be a task for the shorter term. It means that in the short-term no fundamental changes in the UOE data collection framework is foreseen. The UOE data collection framework on education finance is actually still relying to a large extent on the framework that was derived from the 1986 GFS manual from IMF.

However, as the Government Finance Statistics manual has been updated and some basic concepts have been considerably modified it seems logical also to make a 'service overhaul' of the UOE standards as compared to accounting rules. For example, the concept of time of recording shifted from cash accounting to an accrual basis, when the IMF updated its recommendations on how to compile Government Finance Statistics in 2001.

Little is known about which data sources national data providers use to report public finance data in the UOE data collection. The UOE data collection manual itself is not very explicit on what kind of expenditure to report. It simply mentions the time of recording (cash accounting), but it is not known what kind of budget data countries report (outlays or appropriations), nor what kind of accounting standard countries use (expenditure, expense, costs, payments or a combination of all four categories). Furthermore, little is known about the data source of public finance data, but there are some hints that some countries might use national accounts whilst most rely on government finance statistics or government final outlays related to expenditure on education.

The framework of the UOE data collection combines on the one hand sources of funds, types of transaction and levels of education and on the other hand expenditure categories, service providers and levels of education.

The actual concepts can best be summarised by the matrix which is illustrated in the UOE Data Collection manual and as shown below:

Figure 1. Framework for educational expenditure

Type of goods and services		Location	
		Inside educational institutions	Outside educational institutions
Educational core goods and services		Public funds	Subsidised (books, materials, extra tuition)
		Subsidised private Private funds (tuition fees, other private entities)	Private funds
Educational peripheral goods and services	R&D	Public funds Private funds (other private entities)	
	Non-instruction	Public funds Ancillary services: (meals, transport to schools, housing on the campus) Subsidised private Private funds (fees for services)	Subsidised private (living costs, transport, ...) Private funds

Legend:

Public funds		Private funds (net of subsidies)		Public subsidies to private entities	
--------------	--	----------------------------------	--	--------------------------------------	--

Expenditure not within the scope of this data collection

The dimension location within or outside an educational institution has shown to create incomparability into the current framework because it varies significantly across countries how educational institutions function (i.e. which types of goods and services they offer). What is usually provided by an educational institution to most of its participants in a country may not be provided in others (i.e. dormitories on campus universities versus renting a room or flat in the city). Hence, renting a room in a dormitory may be recorded as education expenditure in a country with campus universities, but will not be recorded in case student rent flats in town. Other examples are transportation, provision of books free of charge to participants, R&D etc.

The discussions at international level have focussed on this incomparability during the last years (including the bad quality of data on education expenditures outside

educational institutions, see also document EDU/INES/TG(2006)2 where the annex illustrates this). Therefore, the emphasis has been shifted towards a focus on educational functions e.g. educational core activities, R&D and ancillary services. However, this change in emphasis does not yet seem to have been really focussed and has not yet resulted in changes of the UOE methodology beyond the identification of R&D (which has helped significantly in establishing the coherence with R&D statistics).

Therefore, the re-design of the UOE data collection framework is a way out of this. The new framework should respond to the following three questions (which are only partly addressed by the current framework):

- Where does the money come from? (source of funding),
- Where does the money go to? (provider of educational goods and services),
- What kinds of (functionally-defined) services are performed and what types of goods are purchased?

6.0 Short- to medium term: re-create coherence between the accounting framework in the UOE data collection and accounting standards.

There is an emerging and increasing demand for potential data sources of high quality to feed Government Finance Accounts which is classified by function according to COFOG⁴. For the function education, the UOE data collection has been identified by national accountants in Eurostat as a potential and promising data source on the conditions of coherence with the accounting framework of National Accounts and of a better timeliness. Therefore, it seems unavoidable in the medium term to modernise the accounting framework of the UOE data collection.

The national accounts units within Eurostat are currently running a number of activities including a Task Force whose objective is to ensure reliable, timely, uniform and comprehensive government data, comparable across countries. This Task Force is investigating details of the current COFOG compilation practices at the second digit level of the COFOG classification. One of the tasks of this Task Force is to investigate the consistency of the COFOG data with other data sets as the UOE data collection. For this reason the National Accounts division and the unit on education, sciences and research in Eurostat are actively co-operating in this field.

Moreover, the statistic on Government Finance Accounts demonstrates that a better timeliness – at least as regards public expenditure on education – is possible as this statistics is published more timely than public finance data on education from the UOE data collection, though both statistics rely in principle on the same source.

It is presumed that countries provide final outlays when they provide UOE finance data. Hence the immediate scope regarding timeliness would be to adhere to the timeliness as proposed in the UOE quality report.

⁴ COFOG is an abbreviation of Classification Of Functions Of Government, please see annex 1 for details.

The comparison here will be limited to a short analysis of the main concepts of both statistics.

Figure 2:

		Government Finance Accounts based on COFOG	UOE Data Collection
DIFFERENCES	Time of recording:	Accrual	Cash accounting
	Scope of education:	Formal and non-formal education (i.e. adult education)	Formal education
	Type of transactions	Expense (i.e. including non-financial transactions); no loans	Expenditure; no depreciation or interest rates
COMMON POINTS	Classification of educational programmes	Based on ISCED 97	Based on ISCED 97
	Sectoral breakdown	Central, regional, local, social security fund	Central, regional, local
	Budget data	at the end of the budgetary procedure (actual outlays)	at the end of the budgetary procedure (actual outlays)

TRANSACTIONS	Government Finance Accounts based on COFOG	UOE Data Collection
	Compensation of employees + Intermediate consumption; other taxes on production; current taxes on income, wealth, etc.; adjustment for the change in net equity of households in pension funds reserves + Subsidies + Property income, consolidated + Other current transfers, consolidated + Capital transfers consolidated + Social benefits other than social transfers in kind and social transfers in kind + Gross capital formation and acquisitions less disposals of non-financial non-produced assets = Total general government expenditure	Total personnel compensation + Other current expenditure + Public transfers to the private sector (e.g. scholarships, loans etc.), consolidated + Intergovernmental transfers + Capital expenditure = Total public expenditure on education

Differences between total general government expenditure data in national accounts and in the UOE data collection are caused, among other things, by the fact that depreciations and interest payments are excluded from the scope of the UOE data collection. Moreover, the national accounts environment typically relies on flows, stocks and balance sheets and thus records changes in inventories or benefits from sales whilst the UOE data collection records acquisitions. Government accounts in COFOG are limited to non-financial transactions whilst the UOE data collection comprises student loans, which in national accounts are recorded as financial transactions.

In any case, a more detailed analysis of transactions employed in the National Accounts and in the UOE data collection is required. One important aspect of this analysis is to thoroughly compare the concepts of both statistics in order to identify which transactions are common to both statistics and which are not. A relationship table linking the data from the UOE data collection to those of the National Accounts would be an output of this work.

Public expenditure on education is available through the UOE Data Collection and the National Accounts. Both statistics should rely basically on the same data sources (i.e. government finance statistics). Indicators based on National Accounts and UOE financial data are illustrated in the table below.

Despite some differences in scope and in accounting rules indicators on public expenditure on education as % of GDP based on COFOG data on the one hand and on UOE data on the other hand are of the same order of magnitude (less than 0.5 percentage points difference) in a number of countries (BE, DK, DE, ES, IE, IT, HU, NL, AT, SI, SK, SE, UK) as well as for EU25.

Figures of the indicator based on UOE data are generally lower than those of the indicator based on COFOG data (BE, CZ, EE, FR, IT, LV, LT, LU, HU, MT, NL, AT, PL, PT, UK, RO) and EU25. However, surprisingly, a number of countries actually have higher 'UOE' expenditures than NA expenditures, including the Nordic countries, Germany, Greece, Ireland, Cyprus and Slovenia. This is surprising because the UOE collection would only cover sustained, regular (formal) education activities whereas COFOG would include all education activities also those which are not definable by level.

A more detailed analysis of the differences in figures at national level is therefore envisaged taking into account information by level of education, by level of government or by type of transaction. This activity could be performed once National Accounts of Member States will have provided COFOG data at the second digit level, which is foreseen by the first half of 2007.

Table 1:

	Total general government expenditure on education as % of GDP		Total public expenditure on education as % of GDP, for all levels of education combined		Difference	
	Source: COFOG (NA)		Source: UOE			
	2002	2003	2002	2003	2002	2003
EU 25	:	5.4	5.1	5.2	:	0.2
Belgium	6.1	6.2	6.1	6.1	0.0	0.1
Czech Republic	5.3	5	4.4	4.6	0.9	0.5
Denmark	8.2	8.2	8.4	8.3	-0.2	-0.1
Germany	4.3	4.2	4.7	4.7	-0.4	-0.5
Estonia	:	7.2	5.7	5.7	:	1.5
Greece	3.2	3.5	3.9	3.9	-0.7	-0.4
Spain	4.3	4.4	4.3	4.3	0.0	0.1
France	6.4	6.4	5.8	5.9	0.6	0.5
Ireland	4.2	4.3	4.3	4.4	-0.1	-0.1
Italy	4.9	5.1	4.6	4.7	0.3	0.4
Cyprus	5.2	5.6	6.6	7.4	-1.4	-1.8
Latvia	6.3	6.1	5.7	5.3	0.6	0.8
Lithuania	:	6.2	5.9	5.2	:	1.0
Luxembourg	4.8	4.9	4.0	4.1	0.8	0.8
Hungary	:	6	5.5	5.9	:	0.1
Malta	6.1	6.4	4.5	4.8	1.6	1.6
Netherlands	5	5.2	4.9	5.1	0.1	0.1
Austria	5.8	5.8	5.7	5.5	0.1	0.3
Poland	:	6.1	5.4	5.6	:	0.5
Portugal	7.3	7.2	5.5	5.6	1.8	1.6
Slovenia	5.8	5.8	6.0	6.0	-0.2	-0.2
<i>- continued -</i>	Total general government expenditure on education as % of GDP		Total public expenditure on education as % of GDP, for all levels of education combined		Difference	
Slovakia	:	4.4	4.4	4.4	:	0.0
Finland	5.9	5.9	6.3	6.5	-0.4	-0.6
Sweden	7.4	7.3	7.6	7.5	-0.2	-0.2
United Kingdom	5.5	5.7	5.2	5.4	0.3	0.3
Romania	4.3	3.9	3.5	3.4	0.8	0.5
Iceland	:	:	7.1	8.0	:	:
Norway	6.2	6.7	7.6	7.6	-1.4	-0.9

Source: Eurostat

7.0 Long term: explore and design a framework for "full accounts" **=> move gradually towards satellite accounts on education**

In the long term, satellite accounts on education could be established. The scope of the satellite accounts needs to be further defined. Different approaches could be envisaged:

- limit the scope to a system of education accounts on a similar pattern as in health statistics or in ESPROSS (European System of integrated Social Protection Statistics);
- satellite accounts on education which are a comprehensive system including as well non-monetary education data from several data sources of the European Statistical System (UOE, LFS, CVTS, AES etc.) to describe the inputs, process, outputs and outcomes of the education system;
- or even satellite accounts measuring the stock, accumulation and depreciation of knowledge and human capital.

In reflecting over the long-term objectives and outcomes of a system of education accounts, it should be underlined that other statistical areas already provide much material for such reflections and this material could be used in many constructive ways, including trying to avoid doing mistakes which are commonly known to happen.