

Chapter 2

Making the PISA for Development system-level questionnaire easier to use

This chapter describes the contextual variables of a country's education system that PISA uses to analyse and interpret the results of the student assessment. These variables are collected through a system-level questionnaire, and the chapter explains how the questionnaire has been adapted for use by PISA for Development (PISA-D) countries. It goes on to describe the nine worksheets of the questionnaire and the variables collected, and it presents suggestions on methodological issues and improving the data collection in each worksheet. The chapter concludes with the finding that most of the variables included in the system-level questionnaire have partial or total concordance with data that are included in current UIS data collection. Hence, to avoid duplicating efforts by PISA-D countries, parts of the questionnaire could be modified to avoid burdening countries with soliciting data that are already available at the international level.

In order to analyse and interpret the results of the student assessment, the PISA team at the OECD uses contextual variables for each country's education system. These variables are collected through what is known as the "system-level questionnaire". The current system-level questionnaire, used in the most recent PISA assessment cycle, consists of ten worksheets referring to the structure of national programmes, national assessments and examinations, instruction time, teacher training and salaries, educational finance (including enrolment), national accounts and population data.

Not all countries participating in PISA complete this questionnaire; only those that are not already part of a joint data collection project led by UNESCO, the OECD and Eurostat, which collects the same information through annual surveys.

Data collection tool

The system-level questionnaire is available in Microsoft Excel format. To adapt it for this assessment, it was reviewed and modified as follows:

- references to ISCED 1997 updated to ISCED 2011;
- references to specific school years or calendar years removed, to focus on the most recent year available;
- drop-down lists function improved, minimising risks of involuntary modifications;
- flexibility improved by translating it into French; and
- made more relevant to MICs and LICs by removing certain references, for instance to the euro zone.

Variables examined in this study

This section describes the nine worksheets, or "tables", and variables collected by the system-level questionnaire, drawing on the OECD guidelines provided with the questionnaire. It also makes suggestions on methodological issues and improving the data collection in each category.

Questionnaire table 1: Education stratification or structure

This worksheet is concerned with the structure of the country's education system – including pre-primary, primary, secondary and tertiary levels – and the choices available to students at each crossroad of their educational pathways, such as between a general or a vocational/technical orientation. The worksheet asks the age of pupils at first selection in the education system, that is, the age at which the first crossroad in the educational system occurs. It then asks countries to list the "school types or distinct educational programmes available to 15-year-old students in the modal grade", the programme orientation of each of these tracks, and the theoretical starting age and average duration in years of each ISCED level.

Suggested improvements

In order to make this data collection sturdier, it could be helpful to emphasise that the reference ages that are used in the questionnaire are in fact theoretical entry ages in grades. Because 15-year-old students can be enrolled in grade X if they enrol on time, or grade X+1 if they are in advance, or X-1 if they entered late or repeated a year in school, a focus on age (rather than on grades) can be misinterpreted. One suggestion is to make sure that NCs have a clear mapping of the theoretical ages and grade equivalents in their country, or perhaps always refer to age as “theoretical age”.

The concept of “school types or distinct educational programmes available” could be better explained in the guidelines, as most struggled with the concept. For example, in a given country there could be general and vocational programmes for 15-year-old adolescents, and for any of these orientations it would be possible to find public and private institutions. It is not clear in the questionnaire how to report such a combination of programmes and type of institutions.

Moreover, the components A1 and D1 of the sheet ask for theoretical entry ages and duration for different ISCED levels, but uses the “all programmes” modality rather than collecting entry age and duration for two different orientations at secondary level. Yet entry ages and duration can be quite different between general and technical/vocational programmes.

Further, PISA makes a point of referring to assessing students “near the end of compulsory education”, but the system-level questionnaire does not ask what age range is covered by legislation on compulsory attendance. It seems this would be the appropriate sheet to collect this type of information, although it is already available at UIS.

Finally, since the information on national programmes and their structure is already collected by UIS and available at the international level (as well as being vetted to ensure its quality), the information could be readily shared between the UIS and the OECD in order to minimise the burden on countries’ respondents. In any case, the information collected in that section of the questionnaire should be verified in order to ensure it matches the UIS ISCED mapping.

Questionnaire table 2-1: Assessments and examinations at lower and upper secondary level

This sheet collects data on the existence and main purposes or uses of national examinations and other standardised examinations. The worksheet collects data on how exams are conceived and graded, as well as how results from these examinations are used and shared with other actors in the community.

Suggested improvements

A methodological issue with this worksheet is its assumption that there is only one type of examination per educational level (and orientation, if applicable), or, conversely, that all the examinations encompass the same characteristics throughout the questionnaire items.

In terms of layout, the worksheet lacks a “not applicable” option in the response for examinations, yet many countries have no examinations and rely instead on assessments.

Moreover, some rows are conceptually irrelevant – most of the questions in this sheet are conditional on previous responses. Another suggestion for making the questionnaire more flexible would be to add a comment section for lower secondary (and/or for orientation), as comments are often level-specific (and sometimes orientation-specific).

The information on lower secondary assessments and examinations are or will be available at the UIS, through its Assessment of Learning Outcomes catalogue and programme of activities; therefore this section could be modified in order to lighten the burden on responding countries.

Questionnaire table 2-2: Tertiary entrance examinations

This sheet, similar to the previous one, collects data on examinations (not administered by upper secondary schools) to gain access to tertiary education. The worksheet collects data on how the exams are conceived and graded, as well how their results are used and shared with other actors in the community. Additionally, it collects data on the influence of factors other than examinations used by tertiary institutions to determine access to the first stage of tertiary education. Lastly, it collects data on alternative routes to access tertiary education.

Suggested improvements

These examinations are usually programme-specific or specific to tertiary institutions, and therefore one shortcoming in this questionnaire sheet is that it works under the assumption that all entry exams evenly share the same characteristics, for similar programmes.

It is also not clear how to proceed when there is an entry exam for a specific institution or tertiary programme that does not apply to the rest of the system. Should it be included in the questionnaire? Does it depend on the coverage? How much coverage should be enough?

Similarly, it is not clear how to respond when there is one main entrance examination (for public universities, for example) alongside another entrance system for a specific group of institutions (such as private institutions, or particular programmes). Should both be included, or only the examination with the higher coverage?

Questionnaire table 3: Instruction time in public institutions by age of student

This questionnaire collects data on the amount of class sessions or teaching time dedicated to the intended curriculum (both compulsory and non-compulsory) in public institutions over a school year, for students aged 5 to 15. Respondents are asked to provide information on ISCED level by age, the duration of one class session in minutes by age, and the number of class sessions per year by age.

Suggested improvements

One issue with this sheet is that, like other references to age, its concept of “age” is vague. Making a reference to the “theoretical entry age to a grade” would be more appropriate, especially in this case, because the respondent will have to convert the age into grades.

Information on intended instruction time is already available through UIS instruction time activities (UIS questionnaire on intended instruction time in 2013 and 2014); therefore this section could be modified in order to lighten the burden on responding countries.

Questionnaire table 4: Annual statutory teacher salaries

This worksheet collects data on teacher compensation at the lower and upper secondary education levels: at the start of their teaching career, after 15 years, and at the top of the scale; the number of years needed to rise from minimum to maximum salary by level of education; and criteria for the base salary and additional payments in public institutions.

Data on annual statutory teachers' salaries are collected by the teacher's level of experience. The statutory gross salaries are full-time classroom teachers' scheduled gross annual salaries based on teaching qualifications and length of teaching experience for the school year for ISCED Levels 2 and 3 (lower and upper secondary) in public institutions.

Suggested improvements

One issue for this sheet is that it does not distinguish teachers' salaries by programme orientation, which can vary widely, especially at the ISCED 3 level.

Most of the information gathered by this worksheet is already collected by UIS – a global supplementary questionnaire for teachers has been included in the 2015 education survey – therefore this section could be modified in order to lighten the burden on responding countries.

Questionnaire table 5: Requirements for pre-service teacher training, entry into the teaching profession and professional development

This worksheet collects data on the duration of teacher training programmes, the ISCED classification of the final qualification, and the percentage of current teacher stock with this type of qualification. It also collects data on competitive examinations, teachers' credentials, teaching practice, teacher registration and continuing education requirements for teachers, for the reference school year.

Suggested improvements

Since the required data refers to ISCED levels and programmes, they should be mapped to the ISCED data that are already available at the UIS. Moreover, other items are included in UIS's regular data collection activities; this sheet could be reviewed in order to reduce the burden on participating countries.

Questionnaire table 6: National accounts and population data

This worksheet collects data on GDP in millions of local currency for the three most recent years, total population (in thousands), PPP for GDP (US Dollar=1)¹ in the most recent year available.

Suggested improvements

GDP values and population estimates are usually produced by national statistical offices. Most national statistical offices – in MICs and LICs at least – do not publish PPP values, so this item could be taken directly from the World Bank in order to lighten the burden on countries.

Questionnaire table 7-1: Education expenditure

This worksheet collects data on total current and capital expenditure by type of institution. It is a copy of parts of the UNESCO/OECD/Eurostat (UOE) finance questionnaire, which creates a number of issues, outlined below.

Suggested improvements

First, MICs and LICs are usually unable to provide the data in such a disaggregated fashion. Therefore at a minimum, this table could be based on UIS Questionnaire B on finance education rather than on the UOE finance questionnaire. Because countries already respond to the UIS questionnaire, this sheet could be modified in order to lighten the burden on respondents.

Second, and linked to the above, asking MICs and LICs to distinguish how expenditure is split between government-dependent and independent or private institutions is not realistic. It is generally challenging for MICs and LICs to supply information on financing institutions, including both public and private financing. It would be more realistic to ask about public spending only.

Regarding the breakdown between ISCED levels, sometimes countries are unable to disaggregate expenditure in lower and upper secondary education, but they can provide the data for the whole secondary education level. In order to facilitate the reporting and use of inclusion codes, it would be useful to have a column for secondary education (ISCED Levels 2 and 3).

Finally, as with the rest, these data are already collected by UIS (albeit slightly differently); therefore it would be more productive for PISA-D to use UIS data and encourage countries to continue to submit the UIS questionnaire rather than asking for the same data through a PISA-D questionnaire.

Questionnaire table 7-2: Number of students

This worksheet collects data on the number of full-time equivalent students at each ISCED level, by type of institution, with the specification that data should be aligned to the same 12-month period as the financial year, as reported in 7-1.

Suggested improvements

These items were part of the UIS questionnaire for many years, but were removed from the UIS questionnaire on education finance due to countries' lack of ability to provide enrolment data adjusted to finance data. Moreover, this adjustment is now simply done within the organisation, so the OECD could do the same: in order to make sure that enrolment data is mapped to the financial year (to calculate cost per pupil), the

questionnaire could simply collect enrolment data according to the school year, and the conversion could be made afterwards by the OECD.

In any case, this sheet should be considered a duplication of work, and can be removed in order to lighten the burden on country respondents.

Duplication between the system-level questionnaire and UIS surveys

Throughout this section it has been observed that most of the variables included in the system-level questionnaire have partial or total concordance with data that are included in current UIS data collection. In order to avoid duplicating efforts by participating countries, this report particularly emphasises the recommendation to modify parts of the system-level questionnaire in order to avoid burdening countries with soliciting data and metadata that are already available at the international level.

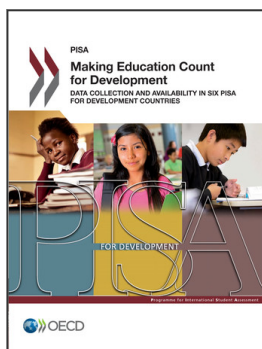
Table 2.1 summarises the UIS activities that include similar data to the system-level questionnaire.

Table 2.1 Duplication between the system-level questionnaire and UIS surveys

Number	Table on system-level questionnaire	Partially or fully comparable UIS sources	Periodicity
1	Education stratification	ISCED mappings	Globally implemented in 2014 and updated when needed
2-1	Assessments and examinations	Catalogue of Learning Outcomes	One round: 2014/15
2-2	Tertiary entrance examinations	-	-
3	Number of class sessions per year	UIS questionnaire on intended instruction time	One round: 2013/14
4	Annual teacher salaries	UIS supplementary questionnaire for teachers	One round: 2015
5	Requirements for pre-service teacher training	Survey of teachers in East, South and West Asia	One round: 2015
6	National accounts	Not in UIS but available at World Bank and UN Population Division	Annual
7-1	Education expenditure	UIS education survey	Annual
7-2	Number of students	UIS education survey	Annual

Notes

1. An economic theory that estimates the amount of adjustment needed on the exchange rate between countries in order for the exchange to be equivalent to each currency's purchasing power.



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