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# Quality Assurance

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It is essential that users of the PISA data have confidence that the data collected through the PISA survey are fit for use for the intended purposes. To ensure this, the various data collection activities have been undertaken in accordance with strict quality assurance procedures. The quality assurance that provides this confidence in the fitness for use of the PISA 2006 data consists of two components. The first is to carefully develop and document procedures that result in data of the desired quality; the second is to monitor and record the implementation of the documented procedures. Should it happen that the documented procedures are not fully implemented, it is necessary to understand to what extent they were not and the likely implications for the data.

## PISA QUALITY CONTROL

PISA quality standards are established through comprehensive operational manuals and agreed national level implementation planning documents. These materials state the project goals, and how to achieve those goals according to clearly defined procedures on an agreed timeline. Each stage of the process is then monitored to ensure that implementation of the programme has proceeded as planned.

### Comprehensive operational manuals

PISA field operational manuals describe the project implementation procedures in great detail and clearly identify connections to the *PISA Technical Standards* at various stages.

For the PISA 2006 field trial and main study, the *PISA National Project Manager's Manual*, the *PISA Test Administrator's Manual*, the *PISA School Coordinator's Manual*, the *PISA School Sampling Preparation Manual*, and the *PISA Data Management Manual* were produced.

### National level implementation planning document

National level planning documents are developed from the operational manuals and allow participants to record their specific project information and any approved variations to standard procedures.

Through a negotiation process, the consortium and each NPM reach an agreement on all the planning documents submitted by the national centre. For PISA 2006 these documents included sampling forms, the translation plan, the preferred verification schedule, the print quality agreement, a form covering participation in international and national options, and adaptation forms related to each of the manuals, the questionnaires and the cognitive test instruments.

To increase the transparency of this negotiation process, all planning documents submitted by the national centre are posted on the PISA website, with file status showing as 'submitted', 'in progress' or 'agreed'. Each national centre's key project information is also displayed on the profile page of the PISA website.

## PISA QUALITY MONITORING

While the aim of quality control is to establish procedures and guide implementation, quality monitoring activities are set to observe and record any deviations from those agreed procedures during the implementation of the study.

### Field trial and main study review

After the implementation of the field trial and the main study, NPMs were given the opportunity to review and provide feedback to the consortium on all aspects of the field operations.



The field trial and main study reviews were organised around all aspects outlined in the NPM manual:

- Use of key documents and processes;
- Use a rating system to review NPMs' level of satisfaction with the clarity of key documents and manuals;
- Communication with the consortium;
- Review the usefulness of the two modes used to deliver materials to the national centre – email and the PISA website or and the newly developed web pages that show the national centre's profile and milestone documents;
- Implementation of national and international options;
- Confirm if national centre had executed any national and international options as agreed;
- Translation/adaptation/verification;
- Review the translation, adaptation and verification processes to see if they were implemented in accordance with PISA technical standards and to a satisfactory level;
- Sampling plan;
- Confirm if the PISA field trial test was implemented as agreed in the sampling plan;
- Printing;
- Review the print quality agreement process;
- Link item revision;
- Confirm if the revision of the link items proposed in the test adaptation spreadsheet (TAS) had been implemented as agreed;
- Security arrangements;
- Review security arrangements to confirm if they had been implemented;
- Archiving of materials;
- Confirm if the national centre had archived the test materials in accordance with the technical standards;
- Test administration;
- Review TA training processes and test administration procedures;
- Special education need (SEN) codes;
- Review the use of SEN codes;
- Coding;
- Review coder training procedures, coding procedures, coding designs and the time required for coding;
- Data management;
- Review the data management processes, including student sampling, database adaptation, data entry, coding of occupational categories, validity reports and data submission.



## Final optical check

Before printing assessment materials in each participating country, NPMs electronically submit their final version of the test booklets to the consortium for a final optical check (FOC). The FOC is undertaken by the consortium's verifiers and involves the page-by-page inspection of test booklets and questionnaire forms with regard to correct item allocation, layout, page numbering, item numbering, graphic elements, item codes, footers and so on (see Chapter 5).

Any errors found during the FOC are recorded and forwarded to National Centres for correction.

## National Centre Quality Monitor (NCQM) visits

Fifteen consortium representatives, national centre quality monitors (NCQMs), visited all 57 participating national centres in the month preceding the country's main study testing period. During the visit, the NCQM conducted a half-day training session for PISA quality monitors which included the selection of a list of schools to visit and a face-to-face interview with the NPM or a representative. Any potential problems identified by the NCQM were forwarded to the relevant consortium expert for appropriate action. In some cases the school list was not ready at the time of the visit, so the selection of schools to visit was carried out through e-mail and phone calls afterwards.

The NCQMs have comprehensive knowledge about and extensive experience with PISA operations. Each NCQM was trained and provided with the national centre's project implementation data in great detail. Prior to each visit, NCQMs studied the national materials in order to be suitably aware of country-specific information during the interview with NPMs.

The NCQM interview schedule is a list of questions that was prepared for the consortium representatives to lead the interview in a structured way, so that the outcomes of the NCQM site visit could be recorded systematically. This interview schedule covers the following areas:

- General organisation of PISA in each country;
- Test administration;
- Security and confidentiality;
- Selection of school sample for the main study;
- Selection of student sample for the main study;
- Student tracking form;
- Translation and verification;
- National and international options;
- Assembly of assessment booklets;
- Coding;
- Adequacy of the manuals;
- Data entry;
- PISA quality monitors.

## PISA quality monitor (PQM) visits

PQMs are individuals employed by the consortium and located in participating countries. They visit a sample of schools to record the implementation of the documented field operations in the main study. They typically visit 15 schools in each country.



All PQMs are nominated by the NPMs through a formal process of submission of nominations to the consortium. Based upon the NPM nominations, which are accompanied by resumes, the consortium selects PQMs who are totally independent from the national centre, knowledgeable in testing procedures or with a background in education and research, and able to speak English or French. Where the resume does not match the selection criteria, further information or an alternate nomination is sought.

Typically, two PQMs were engaged for each country. Each PQM visited seven or eight schools. The *PQM Manual*, other operational manuals and copies of data collection sheets were posted to all PQMs upon receipt of their signed confidentiality agreement. The PQMs were also given access to a designated PQM web page from which they could download materials and information. During the NCQM visit, all PQMs were trained in person. The NCQM and PQMs collaborated to develop a schedule of school visits to ensure that a range of schools was covered and that the schedule of visits was both economically and practically feasible. The consortium paid the expenses and fees of each PQM.

The majority of school visits were unannounced. However, in some countries it is not possible to gain access to a school without arrangement beforehand.

A PQM data collection sheet was developed for PQMs to record their observations systematically during each school visit. The data collection sheet covers the following areas:

- Preparation for the assessment;
- Test session activities;
- General questions concerning the assessment;
- Interview with the school co-ordinator.

A general observation sheet was also developed for PQMs to record general impressions of the implementation of PISA at the national level. The general observation sheet records information on:

- Security of materials;
- Contribution of test administrators;
- Contribution of school coordinators;
- Support from the national centre;
- Attitude and response of students to test sessions;
- Attitude and response of students to the questionnaire;
- Suggestions for improvement.

### **Test administration**

Test administrators record all key test session information using a test session report. This report provides detailed data on test administration, including:

- Session date and timing;
- The position of the test administrator;
- Conduct of the students;
- Testing environment.



## Delivery

All quality assurance data collected throughout the cycle are entered and collated in a central database. Comprehensive reports are then generated for the Technical Advisory Group (TAG) to consider during the data adjudication process (see Chapter 14).

The TAG experts use the consolidated quality-monitoring reports from the central database to make country-by-country evaluations on the quality of field operations, printing, translation, school and student sampling, and coding. The final reports by TAG experts are then used for the purpose of data adjudication.



# Reader's Guide

**Country codes** – the following country codes are used in this report:

**OECD countries**

AUS	Australia
AUT	Austria
BEL	Belgium
BEF	Belgium (French Community)
BEN	Belgium (Flemish Community)
CAN	Canada
CAE	Canada (English Community)
CAF	Canada (French Community)
CZE	Czech Republic
DNK	Denmark
FIN	Finland
FRA	France
DEU	Germany
GRC	Greece
HUN	Hungary
ISL	Iceland
IRL	Ireland
ITA	Italy
JPN	Japan
KOR	Korea
LUX	Luxembourg
LXF	Luxembourg (French Community)
LXG	Luxembourg (German Community)
MEX	Mexico
NLD	Netherlands
NZL	New Zealand
NOR	Norway
POL	Poland
PRT	Portugal
SVK	Slovak Republic
ESP	Spain
ESB	Spain (Basque Community)
ESC	Spain (Catalonian Community)
ESS	Spain (Castillian Community)
SWE	Sweden
CHE	Switzerland
CHF	Switzerland (French Community)
CHG	Switzerland (German Community)
CHI	Switzerland (Italian Community)

TUR	Turkey
GBR	United Kingdom
IRL	Ireland
SCO	Scotland
USA	United States

**Partner countries and economies**

ARG	Argentina
AZE	Azerbaijan
BGR	Bulgaria
BRA	Brazil
CHL	Chile
COL	Colombia
EST	Estonia
HKG	Hong Kong-China
HRV	Croatia
IDN	Indonesia
JOR	Jordan
KGZ	Kyrgyzstan
LIE	Liechtenstein
LTU	Lithuania
LVA	Latvia
LVL	Latvia (Latvian Community)
LVR	Latvia (Russian Community)
MAC	Macao-China
MNE	Montenegro
QAT	Qatar
ROU	Romania
RUS	Russian Federation
SRB	Serbia
SVN	Slovenia
TAP	Chinese Taipei
THA	Thailand
TUN	Tunisia
URY	Uruguay



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### List of abbreviations – the following abbreviations are used in this report:

ACER	Australian Council for Educational Research	NPM	National Project Manager
AGFI	Adjusted Goodness-of-Fit Index	OECD	Organisation for Economic Cooperation and Development
BRR	Balanced Repeated Replication	PISA	Programme for International Student Assessment
CBAS	Computer Based Assessment of Science	PPS	Probability Proportional to Size
CFA	Confirmatory Factor Analysis	PGB	PISA Governing Board
CFI	Comparative Fit Index	PQM	PISA Quality Monitor
CITO	National Institute for Educational Measurement, The Netherlands	PSU	Primary Sampling Units
CIVED	Civic Education Study	QAS	Questionnaire Adaptations Spreadsheet
DIF	Differential Item Functioning	RMSEA	Root Mean Square Error of Approximation
ENR	Enrolment of 15-year-olds	RN	Random Number
ESCS	PISA Index of Economic, Social and Cultural Status	SC	School Co-ordinator
ETS	Educational Testing Service	SE	Standard Error
IAEP	International Assessment of Educational Progress	SD	Standard Deviation
I	Sampling Interval	SEM	Structural Equation Modelling
ICR	Inter-Country Coder Reliability Study	SMEG	Subject Matter Expert Group
ICT	Information Communication Technology	SPT	Study Programme Table
IEA	International Association for the Evaluation of Educational Achievement	TA	Test Administrator
INES	OECD Indicators of Education Systems	TAG	Technical Advisory Group
IRT	Item Response Theory	TCS	Target Cluster Size
ISCED	International Standard Classification of Education	TIMSS	Third International Mathematics and Science Study
ISCO	International Standard Classification of Occupations	TIMSS-R	Third International Mathematics and Science Study – Repeat
ISEI	International Socio-Economic Index	VENR	Enrolment for very small schools
MENR	Enrolment for moderately small school	WLE	Weighted Likelihood Estimates
MOS	Measure of size		
NCQM	National Centre Quality Monitor		
NDP	National Desired Population		
NEP	National Enrolled Population		
NFI	Normed Fit Index		
NIER	National Institute for Educational Research, Japan		
NNFI	Non-Normed Fit Index		



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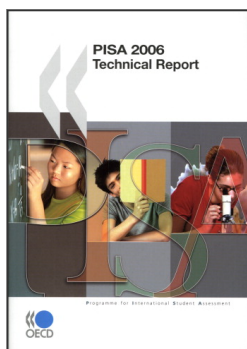
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