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Quality Assurance

PISA data collection activities are undertaken in accordance with strict quality assurance procedures. The quality assurance that ensures the PISA 2009 data are fit for use consists of two components. The first is to develop and document procedures for data collection and the second is to monitor and record the implementation of those procedures.

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 2009 Technical Standards* (see Annex G) at various stages. They were first developed for the PISA 2000 survey in co-ordination with the participating countries and have been developed further for each implementation of the survey. The manuals ensure consistent application of the standards across the participants.

For the PISA 2009 field trial and main study, the *PISA National Project Manager's Manual*, the *PISA Test Administrator's Manual*, the *PISA School Co-ordinator's Manual*, the *PISA School Sampling Preparation Manual*, and the *PISA Data Management Manual* were produced. All the key operational manuals are available to the general public on the OECD PISA website *www.pisa.oecd.org* under the PISA 2009 manuals and guidelines section. In addition, similar manuals were produced for the Digital Reading Assessment (DRA).

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 2009 these documents included sampling forms, the translation plan, the preferred verification schedule, the print quality agreement, an online-form covering participation in international and national options, and adaptation forms related to each of the manuals, the questionnaires and the cognitive test instruments.

The whole negotiation process is designed to be as transparent and direct as possible. All planning documents are submitted on line by the national centre, and stored on the MyPISA website permanently for future references. Each planning document will associate with a file status, such as "submitted", "requires review" or "agreed". Each national centre's key project information is also displayed on the profile page of the MyPISA website.

PISA QUALITY MONITORING

While the aim of quality control is to establish effective and efficient procedures and guide implementation process, quality monitoring activities are set to observe and record any deviations from those agreed procedures during the implementation of the survey. They include:

- field trial and main survey review
- final optical check
- national centre quality monitor (NCQM) visits
- PISA quality monitor (PQM) visits
- delivery
- post final optical check

Field trial and main survey review

After the implementation of the field trial and the main survey, 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 survey 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 newly developed MyPISA website as well as using a rating system to review the communication by activity;

- implementation of national and international options: confirm if national centre had executed any national and international options as agreed;

- review the national feedback process;

- security arrangements: review security arrangements to confirm if they had been implemented;

- sampling plan: confirm if the PISA field trial test was implemented as agreed in the sampling plan;

- 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;

- archiving of materials: confirm if the national centre had archived the test materials in accordance with the technical standards;

- printing: review the print quality agreement process;

- test administration: review TA training processes and test administration procedures;

- quality assurance: review the field trial PISA quality monitoring activity at national level, as well as the PQM activity during main survey at international level;

- coding: review coder training procedures, coding procedures, coding designs and the time required for coding; and

- 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 a 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

A number of participating national centres were visited by PISA international consortium representatives – the National Centre Quality Monitors (NCQMs). Some of them were new national centres for PISA 2009, and some were reported to have experienced difficulties in various aspects of the project implementation. Most of the visits were carried out during the field trial period so that preventive and corrective action could be taken if any potential problems were detected.

During the visits, the NCQM conducts a face-to-face interview with the NPM or a representative from the national centre. Any potential problems identified by the NCQM were forwarded to the relevant consortium expert for appropriate action. A collated response to all problems identified was sent back to the visited national centre after the visit.

The NCQMs have comprehensive knowledge and extensive experience regarding 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 familiar with country-specific information during the interview with NPMs.

The purpose of this interview is twofold. Firstly, it allows members of the consortium to become familiar with the operations of PISA in national context, as well as any specific challenges 'new countries' may be facing in national contexts. Secondly, it provides National Centre staff with the opportunity to ask questions or receive clarification about any aspect of the survey.

The NCQM interview schedule is a list of areas 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 and consistently across countries. This interview schedule covers the following areas:

- general organisation of PISA in each country

- sampling

- adaptation, translation and printing of tests, questionnaires and operational materials

- despatch of materials and test administration

- security and checking back of materials

- cognitive item coding

- data management and submission

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 procedures in the main survey. Typically, one PQM were engaged for each country and they visit 7 or 8 schools in each country.

All PQMs are nominated by the NPMs through a formal process of submission of nominations to the Core A consortium. Based upon the NPM nominations, which are accompanied by candidate 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 communicate in English fluently. Where the resume does not match the selection criteria, further information or an alternate nomination is sought.

Each PQM visited seven or eight schools. The *PQM Manual*, PQM self-training package, other operational manuals and copies of data collection sheets were made available to all PQMs upon receipt of their signed confidentiality agreement via emails and post. The PQMs were also given access to a designated PQM web page on the MyPisa website (*https://mypisa.acer.edu.au*) from which they could download materials and information. All PQMs were self-trained using the PQM training PowerPoint, which has an embedded soundtrack. At the same time, the PQM co-ordinator provided support and addressed any issues or concerns via email. The PQMs and the PQM co-ordinator 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 Core A consortium paid the expenses and fees of each PQM.

The majority of school visits were unannounced to the test administrator. However, in some countries it is not possible to do so when the school associate model was used, where the test administrator and the school co-ordinator are the same person.

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

- preparation for the assessment
- conducting the assessment
- general questions concerning the assessment
- interview with the school co-ordinator

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
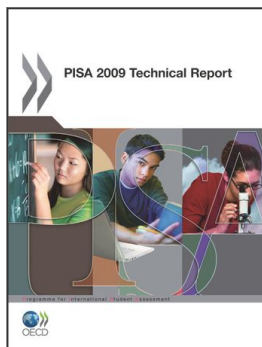- conduct of the students
- testing environment

Delivery

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

The TAG experts use the consolidated quality-monitoring reports from the central data adjudication 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.

Post final optical check

After both the field trial and main survey, Core A consortium staff carried out a thorough checking procedure on all the hard copies of the national centre test booklets that were submitted to the Core A consortium for archiving purpose. The checking was carried out by comparing the National centres' submitted booklets and the source version of the test booklets that were released by the Core A consortium, as well as checking issues that were identified during the FOC process to see how well the suggested changes were implemented and to what extent.

Findings were recorded and made available for countries on the MyPISA website.