

TIMSS and PIRLS 2011 Online School and Teacher Questionnaire Administration

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The 2011 administration of TIMSS and PIRLS marked the first time that countries could choose to administer the TIMSS and/or PIRLS school and teacher questionnaires online. With the increasing capabilities of online technologies, and the worldwide trend towards the online mode of questionnaire administration, it was decided that the TIMSS and PIRLS assessments would expand options for online survey administration, which were first offered in the PIRLS 2006 and TIMSS 2007 cycles with the Curriculum Questionnaire and Survey Activities Questionnaire administered online. Both of these questionnaires are administered in English. A major challenge in administering the school and teacher questionnaires online during the 2011 cycles was incorporating the translations and national adaptations into the online administration procedure.

For the online administration of the questionnaires, the IEA Data Processing and Research Center (IEA DPC) used its proprietary IEA Online SurveySystem, an innovative survey software that incorporates design, presentation and monitoring components. The design component, known as the Designer, supports the behind-the-scenes preparation of the online surveys, data management, and data output to the DPC. For the online presentation, the Web Component uses an ASP.NET (Active Server Pages) application to present HTML questionnaires to the respondents. Finally, the Web-based Monitor component allows for monitoring the survey responses in real time (see [TIMSS and PIRLS 2011 Survey Operations Procedures Software](#)).

All countries and benchmarking entities were invited to consider online administration of the school and teacher questionnaires. When making the decision to move to online administration, participants were asked to weigh their capacity and experience in this area. In particular, national centers were asked to look at the availability and capacity of computers and Internet within the country/benchmarking entity and specifically within schools. The participants were also asked to consider response rates locally on other online surveys. To maintain a high response rate, countries that opted for the online administration of the questionnaires were required to prepare a paper version (printer ready PDF) concurrently for individual respondents who might lack experience using online media or did not have access to the Internet.

Countries that opted for online school and teacher questionnaire administration were required to first administer the online questionnaires in the field test. For the TIMSS and PIRLS 2011 field test, fifteen

countries administered the school and/or teacher questionnaires online. Thirteen of these countries (Australia, Austria, Chile, Finland, Hungary, Israel, Korea, Lithuania, Singapore, the Slovak Republic, Slovenia, Sweden and the United States) used the online mode of administration for the main data collection.

The navigation capabilities of the Web Component were designed to allow respondents to pick and choose their order of response. Buttons marked “next” and “previous” facilitated navigation between adjacent pages, so users could browse through the questionnaire in the same way that they flip through the pages of the paper questionnaire. A hyperlinked interactive “table of contents” allowed the respondent to fluidly navigate to specific questions. Overall, these two functions permitted the respondents to answer questions in the order of their choosing, and skip questions just as they could do if they were answering the paper questionnaire. Also, the online questionnaires could be accessed through any standard Internet browser on all standard operating systems without the user needing any additional software.

The IEA Data Processing and Research Center followed a stringent set of procedures in order to safeguard the confidentiality of the respondents and maintain the integrity of the data. Each respondent received a statement of confidentiality, and information on how to access the online questionnaire. Each participating school principal and teacher received individualized login information consisting of a numeric ID and a corresponding password. No direct identifiers such as names were used or stored online. During the administration period, respondents could log in as many times as needed to complete the questionnaire prior to its submission. Their answers were automatically saved whenever they moved to another question. Nonetheless, respondents could change their answers at any time before submitting the questionnaire.

The Web-based Monitor component of the IEA Online SurveySystem software allowed the NRC to invigilate the completion status of the questionnaires in real-time so that reminders could be sent if questionnaires were not submitted within the expected timeframe. Many national centers made extensive use of the Web-based Monitor to follow-up with non-respondents.

For most countries, the online questionnaire administration was hosted on the IEA DPC’s customized high-performance server. The IEA DPC server allowed for the 24-hour availability of the questionnaires during the data-collection period, and it also ensured backup and recovery provisions for the data. For any technical issues, support was provided by the IEA DPC. For this initial assessment cycle, the process of data collection was smooth and no major technical or operational issues were reported.

Preparing the Online Questionnaires

The IEA Online SurveySystem was created to meet the operational and procedural challenges involved in preparing the online questionnaires for TIMSS and PIRLS 2011. This meant that the Designer component needed to be crafted to handle multiple languages and national adaptations, the layout verification process and the efficient production of the data files.

Accommodating the language diversity of the TIMSS and PIRLS assessments in preparing the online questionnaires was a major challenge. The online questionnaires were administered in 13 different languages. Translation, adaptation, and translation verification of the online questionnaires followed the standardized process outlined in the [Translation and Translation Verification](#) section. Through the IEA Online

SurveySystem Designer component, national centers could tailor the online questionnaires to their national language. The software suite was specially designed to handle complex scripts such as Arabic, Hebrew, and Korean.

To facilitate translation and adaptation, the Designer component concurrently stored the original English question text and the translations and/or national adaptations. It also stored the variable names and data validation rules. If a national center decided not to administer a particular international question or option, it could be disabled in the Designer and would not be administered during the online questionnaire administration. The Designer also included an integrated preview function to allow for a visual side-by-side comparison of the paper/PDF and online versions of the questionnaires, allowing for the layout verification process.

The back end of the Designer component stored the translations and national adaptations in resource system files. These files could be extracted and shared between international partners during the various phases of the project. The translated/adapted resource system files were sent to the TIMSS & PIRLS International Study Center for layout verification. Once approved by the TIMSS & PIRLS International Study Center, the national resource system files were submitted to the IEA Data processing and Research Center for additional structural quality control. When all remaining issues were resolved, the IEA DPC activated the approved questionnaires for online administration, and the online collection could begin at the national level.

Following the online administration of the questionnaires, for most countries the data were directly accessible by the IEA Data Processing and Research Center for the data cleaning process (see [Creating and Checking the TIMSS and PIRLS 2011 Databases](#)), as most countries hosted their online questionnaires on the IEA DPC server. At the local level, this was advantageous as it meant that the national centers did not have to process the data collected through the online questionnaires.