

GENERAL GUIDELINES FOR THE AVAILABILITY AND USE OF THE *PISA-BASED TEST FOR SCHOOLS*



VERSION 2.0 - MARCH 2018

Introduction

1. The PISA-based Test for Schools is an assessment that supports school improvement efforts and benchmarking, based on the OECD's Programme for International Student Assessment (PISA). Like PISA, it assesses the extent to which 15-year-old students near the end of compulsory education have acquired some of the knowledge and skills that are essential for full participation in modern societies.
2. PISA is an international study that was launched by the OECD in 1997 and first administered in 2000 and now covers 80 countries. Since then, every 3 years the PISA survey provides comparative data on 15-year-olds' performance in reading, mathematics and science. In addition, each cycle explores a distinct "innovative domain" such as collaborative problem solving (PISA 2015) and global competence (PISA 2018). The results have informed national and global policy discussions since its inception.
3. While PISA is intended to provide national level results, the PISA-based Test for Schools is designed to provide school-level results for school-improvement and benchmarking purposes. Because both assessments are based on the same frameworks, the results are comparable, meaning that individual schools benchmark their performance with that of national education systems from around the world.
4. Based on the contextual questionnaires that are an important part of the assessment, results also show how different factors within and outside the school are associated with student performance, including students' socio-economic background, their attitudes and interests towards reading, science and mathematics, and the learning environment at school.
5. The PISA-based Test for Schools is not intended as a high-stakes assessment or for accountability purposes. It is a voluntary assessment intended for schools that are interested in improving learning outcomes and international benchmarking. It is not to be used for mandated or accountability purposes. The assessment should be used as a learning experience for teachers and students that can

prompt discussions on the types of knowledge, skills and competencies that are relevant in a quickly changing world. It is not intended as a high-stakes assessment or for accountability purposes.

Governance

6. The PISA Governing Board (PGB) is composed of representatives of OECD members and PISA associates¹ and meets twice a year. Guided by the OECD's education objectives, the PGB is responsible for determining the policy priorities for PISA and ensures that these are respected during the implementation of each PISA survey.

7. The PGB is also responsible for ensuring the proper use of derivative PISA instruments such as the PISA-based Test for Schools and the PISA brand name. The OECD Secretariat will seek to approval of the relevant PISA Governing Board representative prior to offering the PISA-based Test for Schools in its country.

8. The PISA for Schools Technical Advisory Group (TAG) plays an important role in advising the OECD Secretariat on the technical parameters of the assessment tool. The TAG is regularly consulted to provide expert advice in matters relating both to the ongoing development of the instruments and to any adaptations needed in specific school or country contexts.

9. A National Service Provider who will deliver the PISA-Based Test for Schools is selected by a country and is subject to its accreditation by the OECD.

10. The OECD Secretariat is responsible for regularly reporting to the PISA Governing Board on the development and use of the PISA-based Test for Schools. It provides guidance on the appropriate use of the PISA-based Test for Schools to countries and National Service Providers through two key documents:

- the Technical Report;
- the General Guidelines for the Availability and Use of the PISA-based Test for Schools.

Availability

11. The sustainability and relevance of the PISA-based Test for Schools relies on a robust governance and operational model that is flexible enough to be responsive to the context and demands of specific countries while also ensuring that general quality standards and guidelines established by the OECD are met in all countries where the assessment is available.

12. These guidelines are intended to be general enough to allow for adoption in a wide-range of country-specific contexts. Additional country-specific parameters to reflect local conditions (e.g. in federal, devolved, and/or decentralised systems) may be established for the use of the PISA-based Test for Schools in consultation with national or local authorities, in those countries where the assessment is made available.

Participation costs

13. The development and maintenance of the PISA-based Test for Schools has been, and will continue to be, funded through Voluntary Contributions (VCs).

¹ Associates are economies that are not OECD members but that have membership rights and obligations in regard to specific OECD bodies and programmes.

14. The cost of participation for countries and school networks is determined as follows:
- Year 1: a fixed rate is set to ensure cost recovery for the staff time and expenditures incurred by the OECD Secretariat for the preparation and introduction of the PISA-Based Test for Schools.
 - Year 1+N: a reduced fixed rate for each successive year of testing to cover the staff time and expenditures incurred by the OECD Secretariat to ensure ongoing coordination, innovation and quality assurance plus an amount calculated on the basis of the number of schools tested. Countries and/or school networks will also need to budget for the costs related to the administration of the PBTS and production of the school reports by the accredited National Service Provider, which will vary.

Controlled and supervised administration of the assessment

15. The different aspects of the assessment process (test administration, coding, scoring, data management, scaling, analysis and reporting) carried out by accredited National Service Provider(s) must follow the quality standards and procedures established by the OECD through the PISA-based Test for Schools Technical Report and the present Guidelines.

16. To this end, in consultation with national authorities, an accreditation process will be conducted by the OECD for the National Service Provider(s) selected to deliver the PISA-based Test for Schools in countries or school networks that decide to take part in the assessment. This will ensure that relevant country-specific conditions and constraints are fully taken into account, particularly with regards to the implementation of the main PISA study in those countries.

17. The following paragraphs provide guidance regarding the availability and use of the assessment:

- A1. The PISA-based Test for Schools will not be used as an alternative to the main PISA study. In countries where sub-national jurisdictions participate in PISA (*e.g.* states in the United States) and receive jurisdiction-level results through extended oversampling, such sub-national jurisdictions may not use the school assessment *instead of* the main PISA study to obtain jurisdiction-level results.
- A2. In countries where the PISA-based Test for Schools is made available, the main PISA study takes primacy. The OECD will work with national authorities of those countries to monitor the availability of the PISA-based Test for Schools to ensure that confusion and interference with main PISA school recruitment, field trials, main data collection, and overall quality are avoided. The continued availability of the test in a country can be revisited by national authorities, the OECD, or the PISA Governing Board.
- A3. In order to avoid possible interference with school recruitment, field trial or main data collection of PISA (and/or other international or local assessments, as determined by national authorities), particular periods during which the PISA-based Test for Schools assessment should not be available to users in specific countries will be established based on consultations with national authorities of those countries.
- A4. Schools invited to participate in the main PISA study will not be eligible to participate in the PISA-based Test for Schools during that academic year. They will, however, be able to participate in the PISA-based Test for Schools the following year.

- A5. In countries where the availability of the assessment requires the translation and verification of the assessment instruments (cognitive items and questionnaires), this process will be agreed upon with the government or National Service Provider and will mirror the translation and adaptation process conducted for the PISA field trials. The availability of the assessment in other languages requires that the OECD work with local agencies to provide oversight with regards to the translation, validation, and the implementation of a field trial to validate the translated instruments.

Reporting and communicating of results

- A6. The assessment should not be used by schools and local jurisdictions for developing rankings or league tables.
- A7. The model school reports developed by the OECD for the assessment should serve as the reference for the reports provided to schools and entities with multiple schools that use the assessment, although these can be adapted and modified by countries in agreement with the OECD. Samples of the school reports are available on the OECD Website (www.oecd.org/pisa/pisa-basedtestforschools/). Changes and further innovations to the model school reports (design, content or visual identity) will be reviewed by the OECD (in consultation with the PISA-based Test for Schools Technical Advisory Group) in countries where the assessment is made available.
- A8. Results from PISA-based Test for Schools must be described as such and avoid any representation that could suggest that the school level assessment results are from the main PISA studies.
- A9. The PISA-based Test for Schools is a school-level assessment. Aggregate-level results for networks and other entities with multiple schools that decide to implement the assessment may only be reported *in addition* to individual school-level reporting. In other words, an entity with multiple schools would not be allowed to use the school assessment for aggregate results without having individual schools that participate also receive their school-level results as part of the process. This helps ensure that the assessment supports school-improvement discussions at the school level, with the school at the centre of the process. This also helps ensure that the assessment is perceived by schools to be relevant and useful to them, as opposed to something that is imposed by local or other authorities.
- A9. Multiple-school entities that request to use the assessment for aggregate-level results in addition to school-level results will follow sampling procedures established with the service provider in accordance with OECD guidelines. Multiple-school entities may request to have sampling designs include specific sub-populations or socio-economic groups about which the entities with multiple schools wish to collect information. This will be agreed upon on a case-by-case basis with the accredited National Service Provider(s) in each country, in consultation with the OECD Secretariat.
- A10. The results of the assessment, for individual schools or local multiple-school entities, should not be used for marketing or commercial purposes by the schools themselves, by third parties or by contractors.
- A11. Performance should also be considered in light of the information the assessment provides in terms of the teaching and learning environment at schools. The school-level estimates in reading, mathematics and science that the assessment provides on the PISA-comparable scales

should be considered only part of the performance picture. Through the materials describing the assessment, the school reports and in the agreements, users of the assessment will be invited to consider the information collected through the student questionnaires related to the learning environment (e.g. teacher-student relations, disciplinary climate, students' attitudes and engagement towards learning and meta-cognitive strategies).

- A12. Although schools and multi-school entities that opt to use the assessment are invited to openly share and discuss their results with the local education community of stakeholders (school staff as well as current and prospective students and parents), they will not be obligated to do so by choosing to use the assessment.
- A13. School results and reports will be made electronically available to the appropriate representative(s) of participating schools and appropriate administrative authorities (e.g. districts or local authorities) through a secure file-transfer-protocol by the accredited service providers. Subject to A16, the possible access to school results by other administrative levels (e.g. in countries with federal, devolved or decentralised school systems) will also be determined in consultation with national authorities.
- A14. School results and reports will not be released publicly or made available to third parties by the National Service Providers or the OECD without prior written permission from the appropriate school representatives.
- A15. The OECD Secretariat will provide local authorities, national authorities or relevant contractors with a template for reporting on progress in test delivery, the number of participating schools and expressions of interest from new schools or school networks. This report will be made available to the OECD Secretariat twice a year, in each year the test is made available.

Ownership and uses of school-level data

- A16. Individual schools that participate in the assessment own their school-level data. In cases where a network or multi-school entity is using the assessment, it will be the decision of the participating schools to grant access to their school-level data (and results) to the network or entity. The student-level de-identified data sets of the cognitive and contextual information obtained through the assessment for each school will be provided to the appropriate representatives of that particular school and to the representatives of the multiple-school entity, where agreed upon by the school. In cases where other educational authorities wish to have access to school results, this may form part of the implementation process as determined a specific country in consultation with national authorities.
- A-17 As part of the preparation conducted with schools that decide to administer the assessment the National Service Provider(s) will inform school leaders, teaching staff, students and parents about the information that is collected from students and how this information will be used in the reporting for the school.
- 18. A18. The de-identified datasets provided to participating schools must not be used to identify individual student responses or results. In cases where the percentages of students responding in a certain manner in the contextual questionnaires could be small enough to facilitate identification, measures to perturb those responses will be taken by the National Service Provider(s) prior to releasing the datasets to participating schools.

- A18 For quality control purposes, service providers are required to send four separate Excel databases to OECD. The first database contains the raw response at individual student level. The second database contains the raw score at individual student level. The third database includes the students' responses to the student questionnaire as well as all the derived variables. The last, fourth, database provides the final results at school level. All databases have to be coded according to the guidelines set in the Coding Manual and the Technical Report (OECD,2017) and use the same variable specifications (name, type, format) as described in the codebooks provided by the OECD. Service providers are also highly encouraged to provide the programming code used for creating the derivative Excel files (especially if a widely available software such as R, SAS, SPSS, STATA was used) to OECD for consistency check.
- A19. The datasets provided to each participating school should be used for further analysis to support school improvement and benchmarking practices and not for any type of accountability or marketing purposes.
- A20 Participating countries and school networks will ensure, together with the service provider, that an information security framework is put in place and that all of the processes for data collection and storage in relation to the PISA-based Test for Schools are compliant with all relevant national legislation and the European Union General Data Protection Regulation.
- A21. The OECD will maintain a database with the de-identified datasets from participating schools that will be used solely for research purposes of the OECD. Participating schools will be asked to provide their permission to the OECD to use their de-identified datasets for research purposes when they agree to the uses of the assessment with the service providers. In cases where the OECD may want to publicly report findings from the data sets, permissions will be obtained expressly for this purpose from national authorities of countries where the assessment is available.

Uses of the PISA name by schools and entities

- A22. Schools and entities with multiple schools that decide to use the assessment in countries where it is made available will be asked to sign a letter of agreement with the National Service Provider(s) in which they agree to abide by these general Guidelines with regards to uses of the assessment, reporting of results, and uses of the PISA name.
- A23. Through signed agreements, participating schools, local authorities, and third party agents involved in the implementation of the PISA-based Test for Schools, will be asked to use the international name of the assessment – the PISA-based Test for Schools – unless national authorities decide on a different name for the assessment in the country. They should not referring to their results as “PISA results” or use the results for rankings, league tables or commercial purposes.
- A24 Use of OECD logos, PISA logos and other intellectual property is subject to prior approval by the OECD.
- A25 The following main marketing content developed by participating schools, local authorities, third party agents or participating countries in relation to the PISA-based Test for Schools will be made available to the OECD and are subject to prior approval (on the timescales specified in the appropriate legal instrument between the OECD and the concerned party):

- Main messages for marketing, web and leaflet content
- Launch press release
- Any material that makes use of OECD logos

A26. The above materials will contain the main messages that will be used to market the Programme, from which other marketing materials will be derived. These additional iterations of the marketing materials will not be subject to individual approval from OECD. Where key messages change, these will be provided to OECD for approval before use in a range of material. Materials developed or used by these parties for promotional or dissemination purposes must clearly stipulate the concerned jurisdiction so as to avoid confusion.

Digital Solutions

19. An OECD-accredited Service Provider may decide to develop digital solutions for the delivery of the PISA-based Test for Schools as well as the analysis and reporting of its results. Digital solutions for student assessment and related services shall, to the extent possible, comply with good practice in UX/UI Guidelines, Accessibility, Application Design, Security and Privacy the extent possible:

DS1 UX/UI Guidelines.

20. In developing digital solutions for the delivery of the PISA-based Test for Schools, developers consider the following design principles:

- **Simplicity:** developers should favour a streamlined and simple design that does not interfere with the user's experience.
- **Accessibility:** Design elements should not impair the use of the digital solutions for any users.
- **Consistency:** The design of the digital solutions should be consistent throughout the user experience.
- **Human-centred design:** Wherever possible, the digital solutions should employ human-centred design principles.

DS2 Accessibility

The student assessment and related services shall to the extent possible comply with the most recent international Web Content Accessibility Guidelines (WCAG), the ISO standard for universal accessibility (PDF/ua) if PDF technology is used, and ISO accessibility norms at large for hardware, software and interoperability. Service providers must specify to the OECD Secretariat if their proposed services deviate from these standards.

DS3 Application Design

General Principles for a multi-tiered application:

- a. The application must be designed as a multi-tiered application with a clear separation of concerns² between the different layers.
- b. Each layer must be implemented in isolation of the others and thoroughly tested using automation.
- c. Each layer is responsible for validating its input (type, format, business) and to producing a valid output (validated through testing).
- d. A minimal level of test coverage should be agreed upon between the Service Provider and the OECD Secretariat.
- e. Authentication and authorisation must be enforced at all application layers.
- f. All layers must be subject to integrated testing, ideally using automation.
- g. The application must be built, versioned, released and deployed using automation.

Data Exchange Principles:

- a. The logical boundaries of the sub-systems (layers) where a data exchange is necessary must be clearly identified.
- b. For each of these boundaries, a protocol and a data format must be defined, ideally based on common text formats such as XML³ or JSON⁴.
- c. A tool for the verification of the compatibility and the consistency of the messages exchanged (with clear error messages) should be implemented.
Potentially an XML schema can be provided for these purposes even if the current XSD⁵ capabilities are not sufficiently expressive.
A software tool along with a document describing broad outlines of these standards would be recommended.
- d. It should be verified that that the implementation would respect the maximum logical software module sizes defined in (a) while being able to generate the messages defined in item (b). This can be done by requiring deliverable boundaries in accordance to the model set forth on item (a).

² https://en.wikipedia.org/wiki/Separation_of_concerns

³ <https://www.w3.org/TR/xml/>

⁴ <http://www.ecma-international.org/publications/files/ECMA-ST/ECMA-404.pdf>

⁵ <https://www.w3.org/XML/Schema>, the current version 1.1 is not widely (as of April 2018) supported therefore the recommendation has to be content with v1.0 of the standard

Towards Web Architecture:

- a. In order to maximize the interoperability and the reach to the end users, a web front-end should be implemented.
- b. In that context the UI should be based on a state-of-the-art framework supporting responsiveness and fluidity .
The use of state-of-art frameworks and libraries recognised by the industry also facilitates the future maintenance of the solution and is applicable to all application layers.
- c. The web communication layer between the UI and the backend servers should comply with the principles of REST⁶ .
- d. A multi-tiered application would typically contain the following layers:
 - A front-end layer responsible for the rendering of the UI and the user interactions
 - A REST-full web communication layer connecting the UI to the backend services
 - A Business Layer implementing all the complex application logic
 - A Data Access Layer implementing all interactions with the Data Layer
 - A Data Layer hosting the data model

DS4 Security and Privacy

- a. The defense in depth⁷ paradigm should be implemented globally on the solution, and a least privilege model⁸ always enforced.
- b. The solution should follow security recommendations as defined by ISO 27002⁹.
- c. If the solution includes a web application part, it should follow the OWASP¹⁰ recommendations.
- d. Secure Development Lifecycle¹¹ should be applied to any custom code written, to take into account security requirements by design.
- e. Privacy considerations should be applied to all components of the solution, by design and by default, following GDPR recommendations or national legislations.
- f. A proper maintenance plan for all components of the solution should be designed, to ensure the solution and its underlying components are maintained up to date.
- g. Editor recommendations and best practices regarding security should be enforced for each editor component of the solution.

⁶ https://en.wikipedia.org/wiki/Representational_state_transfer

⁷ <https://www.us-cert.gov/bsi/articles/knowledge/principles/defense-in-depth>

⁸ <https://www.us-cert.gov/bsi/articles/knowledge/principles/least-privilege>

⁹ <https://www.iso.org/standard/54533.html>

¹⁰ <https://www.owasp.org>

¹¹ https://www.owasp.org/index.php/OWASP_Secure_Software_Development_Lifecycle_Project