# PISA for Development construct validity

- The OECD has enhanced its PISA instruments through the PISA-D initiative to provide a finer-grained view of low-performing students and to better measure factors more strongly related to student performance in low- to middle-income countries as described in the *PISA-D Assessment and Analytical Framework*.

- The evidence from the trial of the enhanced PISA-D instruments against the theory that underpins them as set out in the PISA-D Framework, and the PISA technical standards that govern the assessment (as documented in the *PISA-D Technical Report*) all confirm the construct validity of the PISA-D test scores for the proposed uses of the tests.

The modern approach to construct validity, defined here as the degree to which evidence and theory support the interpretation of test scores for the proposed uses of tests, is based on the Interpretive/Use Argument pioneered by Michael Kane. The PISA-D test of construct validity begins by defining the purpose of the project's data-collection instruments. PISA-D enhances PISA's cognitive instruments to better measure the lowest student performance in reading, mathematics and science; it enhances contextual data instruments to better capture the diverse contexts in middle- and low-income countries. In addition, PISA-D has established methods to include out-of-school-youth in the assessment. The countries participating in PISA-D expect the assessment to inform evidence-based discussions of the major policy issues that affect student performance and progress towards achieving the education Sustainable Development Goal (SDG) and its associated targets and indicators.

The educational prosperity approach

To make PISA more relevant for low- and middle-income countries, PISA-D has adopted an educational prosperity approach. This approach is the basis of the PISA-D Framework and considers the conditions for the success of education systems throughout a person's lifetime. It identifies a set of four key outcomes, called "Prosperity Outcomes", for each stage of schooling and child development: educational attainment; academic performance; health and well-being; and attitudes towards school and learning. The prosperity approach also identifies a set of family, institutional and community factors, called "Foundations for Success", that influence these outcomes: inclusive environments, learning time, quality instruction, family and community support, and resources (see figure opposite).
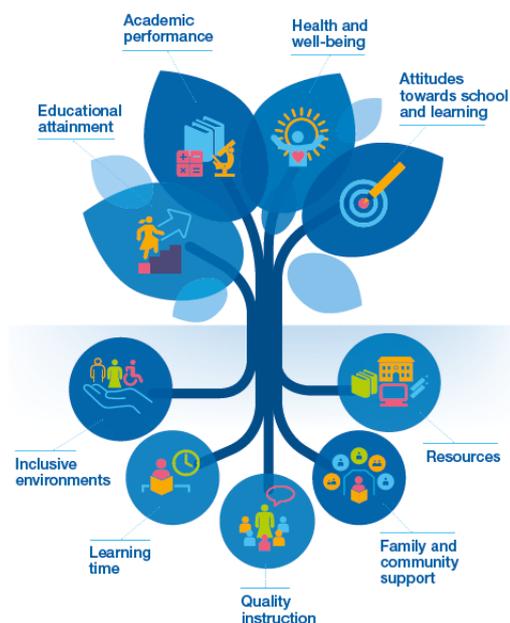
The approach has three explicit links to national and local policy and practice.

- First, it allows countries to set goals or targets for improvements in the Foundations for Success, based on PISA-D data, at all levels of the system, from the education minister and his or her staff to front-line educators, students and parents. The challenge for countries over time is to maintain a focus on these goals or targets and to track progress towards them by participating in future cycles of PISA and other relevant studies.

- Second, the data collected has immediate implications for education policies concerning the allocation of resources and its implications for equity. With reliable data on differences, between groups of young people, in outcomes and access to the Foundations for Success, countries will be able to determine whether poor and marginalised populations are given equal opportunities to succeed at school and beyond.

- Third, the data collected will enable countries to set goals and targets for improvements in their Foundations for Success that are consistent with the framework of the SDG for education and monitor progress towards them. PISA-D provides an infrastructure for analysing relationships between trends in outcomes and policy changes. The descriptive evidence from PISA complements policy evaluations and more qualitative assessments of the implementation of policy reforms.

Validating the assessment

The field trials of the PISA-D cognitive tests in 2016 provided information about the data collected and survey operations, assessed the quality of the test items, and helped determine the reliability and comparability of the PISA-D and PISA scales. Using the background questionnaires during the trials allowed for selecting items for the final instruments based on their psychometric properties. PISA's technical standards were applied at every stage of the project. The main survey data collection is subject to a strict adjudication process, particularly for the sampling and translation/adaptation parts of the implementation. The way the sample is selected and the instruments are localised in each country is an integral part of the evidence supporting the construct validity of the intended uses of the assessment. (Invalid uses of PISA data include ranking schools within a country and measuring the value-added of teachers.)

During the analysis phase of the project, analysts took an in-depth look at the results, including the functionality of all test items, and confirmed that the instruments measure what they purport to measure against the PISA-D Framework. Indeed, the analysis validated the assumptions that shaped the PISA-D Framework. As a result, participating countries can be confident that the assessment results will provide relevant data that can inform decisions concerning national policies.

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