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PISA for Development

Abstract

This article provides a brief overview of progress in developing a new initiative called *PISA for Development*. It shows how the OECD and its partners are implementing this initiative in support of the Education 2030 agenda that is set within the framework of the *Sustainable Development Goals* (SDGs) and emphasizes the quality, equity, and measurement of learning outcomes for young children through to working adults. The world now faces a challenge to define global learning indicators that can be measured and tracked on a global scale over time. The paper argues that PISA is already helping to measure and improve learning outcomes in over 70 countries and, with the *PISA for Development* initiative, OECD and its partners are aiming to make it possible for a wider range of countries to participate in the assessment.

Keywords: *Education 2030 Agenda, Learning Outcomes, Programme for International Student Assessment (PISA), Sustainable Development Goals (SDG)*

Zusammenfassung

Dieser Artikel bietet einen kurzen Überblick zum Fortschritt in der Entwicklung der neuen sogenannten *PISA for Development*-Initiative. Es wird dargestellt, wie die OECD und ihre Partner diese Initiative als Unterstützung der Bildungsagenda 2030 implementieren, deren Kontext der Rahmenplan der Nachhaltigen Entwicklungsziele (*Sustainable Development Goals*, SDGs) ist und die Qualität, Gleichheit und das Messen der Lernergebnisse von jungen Menschen bis hin zum erwerbsfähigen Alter betont. Die Welt ist aktuell mit der Herausforderung konfrontiert, globale Lernindikatoren zu definieren, die in weltweitem Umfang gemessen und beobachtet werden können. Das Argument wird ausgeführt, dass PISA bereits dabei ist das Messen und die Verbesserung von Lernergebnissen in über 70 Ländern zu unterstützen und, mit der *PISA for Development*-Initiative, die OECD und ihre Partner darauf abzielen, einer weiteren Bandbreite an Ländern die Teilnahme an Leistungsstudien zu ermöglichen.

Schlüsselworte: *Bildungsagenda 2030, Lernergebnisse, PISA-Studien, Nachhaltige Entwicklungsziele (SDG)*

Preface

The Education 2030 agenda (UNESCO 2015) that is set within the framework of the *Sustainable Development Goals* (UN 2015) emphasizes the quality, equity, and measurement of learning outcomes for young children through to working adults. The challenge now is to define global learning indicators that can be measured and tracked on a global scale over time. This paper reports on an initiative that is designed to inform and support these Education 2030 discussions, through an enhancement of the OECD's Programme for International Student Assessment (PISA).

Since its launch in 1997, PISA has become a leading reference on the quality of education systems worldwide. "What is important for citizens to know and be able to do?" is the question that underlies the PISA metric for quality, equity and efficiency in school education. PISA assesses the extent to which 15-year-old students have acquired key knowledge and skills that are essential for full participation in modern societies. Every three years, PISA assesses the knowledge and competencies of 15-year-olds in three subjects: reading, mathematics and science. It doesn't just ascertain whether students can reproduce what they have learned in these domains; PISA also examines how well they can extrapolate from what they have learned and apply that knowledge in unfamiliar settings, both in and outside of school. This approach reflects the fact that modern societies reward individuals not for what they know, but for what they can do with what they know. To date, more than 70 countries have taken part, including 44 emerging and developing countries, among them Brazil, Indonesia, Vietnam and Tunisia. The latest round of results, PISA 2015, will be published in December 2016.

In 2014, the OECD and a number of partners launched the PISA for Development (PISA-D) initiative that aims to identify how PISA can best support evidence-based policy making in low income and middle income economies as well as contribute to the UN-led definition of Education 2030 Sustainable Development Goals (SDG), targets and indicators, particularly those related to learning outcomes.

What is PISA?

PISA is a triennial internationally-comparable assessment of 15-year-olds in school. It measures student performance in reading, mathematics and science, and collects contextual data

through school and student questionnaires. A random sample of at least 5000 students is tested in each country. Some important features of PISA are:

- The age of the students surveyed – 15 years – is an age at which an assessment of career- and college-readiness is particularly important.
- PISA assesses cumulative learning from early childhood through primary and secondary schooling.
- It addresses both cognitive and non-cognitive learning outcomes, including students' strategies for and attitudes towards learning.
- It examines not only how well students reproduce knowledge, but also whether they can apply knowledge in diverse practical settings within and outside of school.

PISA is a powerful tool for policy making. Participating countries receive a comprehensive assessment of the quality and equity of their education systems, which helps them to benchmark their progress over time, set national goals and measure progress towards those goals. In this way, they are able to chart paths to better and more equitable learning outcomes. The global, collaborative PISA network also helps countries see where they stand in comparison to their regional and global peers, and to learn from each other's experiences.

Brazil presents an excellent example of how a country has leveraged its participation in PISA to improve its learning outcomes. When Brazil first participated in the assessment in 2000, its performance ranked lower than any other country. Brazil used PISA results to benchmark progress, prioritise policies and inform its new national assessment framework. By 2009, Brazil's average PISA scores had improved across the board – and particularly in mathematics, where the improvement was equivalent to almost one year of schooling – making it one of the fastest improvers of all PISA-participating countries.

PISA for Development

The OECD is seeking to enhance PISA to make it more relevant to a wider range of countries. The PISA-D initiative has been designed by the OECD and its partners to enable greater PISA participation by low-income and middle-income countries. It will do this by:

- extending the PISA test instruments to a wider range of performance levels;
- developing contextual questionnaires and data-collection instruments to effectively capture the diverse situations in emerging and developing countries; and
- establishing methods and approaches to include out-of-school youth in the assessments.

The project will also build capacity for managing large-scale student learning assessment in the participating countries, which are: Cambodia, Ecuador, Guatemala, Honduras, Paraguay, Senegal and Zambia. The selection of countries for PISA-D was demand-led, based on the following basic criteria: a middle income or low income country that has already participated in a regional or international assessment. The scaling up of the project's achievements will be focused on countries meeting similar criteria, but, in addition, the OECD will also look for opportunities to generate potential spill-over effects

with countries already participating in OECD activities, for example, countries that are participating in OECD's Multi-Dimensional Reviews and engaging in OECD supported skills strategies. Peer-to-peer learning will be promoted by bringing together the 44 emerging and developing countries already participating in PISA with the seven PISA-D countries through mentoring arrangements, international meetings and workshops and the development of country case studies.

OECD and its partners expect that from 2018 onwards, the advances made through PISA-D will enable more countries to use PISA for setting national learning targets, monitoring progress, and analysing the factors that affect student outcomes. In particular, it will help them to zero in on poor and marginalised populations. Finally, it will build institutional capacity to track global Education 2030 targets focused on access to education, as well as on learning.

Preparing the project

The PISA-D project design has been informed by several expert papers that have been commissioned by the OECD and its partners over the past two years – most of these papers have already been published and the remainder will be published by early 2016. These papers have provided the technical analysis and evidence base for the choices that have been made in designing the project. The papers have also provided the means for the OECD and its partners to reach a common understanding of the technical issues that need to be addressed in each of the three main output areas of the project to ensure the initiative is a success. These technical issues may be summarised as follows:

- PISA test instruments: Using the existing PISA item pool, supplemented by existing items from other assessments that can be placed on the PISA scale, presents challenges regarding its suitability for countries which have students of average limited capacity. The fit of low income and middle income country data to the PISA model is not good and modifications can help address some of the deviations that can be expected in the case of these countries. The use of learning metrics to describe dimensions of educational progression is at the core of the PISA reporting methodology and requires a consistency across countries in item behaviour that is not apparent for some middle income and low income countries. The process of extending the cognitive assessment instruments must therefore be undertaken with extensive consultation with experts and with representatives from the countries involved while also ensuring that the results are comparable to the PISA scale (Adams/Cresswell 2015).
- Contextual questionnaires: The conceptual framework for the contextual questionnaires used in PISA addresses the policy questions relevant to the OECD member countries. The work of OECD commissioned experts, alongside discussions with key stakeholders, including those from participating countries, identified seven themes in which the PISA contextual questionnaires could be enhanced and made more relevant for low income and middle income countries: early learning opportunities; language at home and at school; family and community support; quality of instruction; learning time; socioeconomic status; and

school resources. The contextual questionnaires will need to be enhanced in consultation with key experts and the participating countries to better capture the factors that are relevant in developing countries while also ensuring that the results are comparable to the PISA scale (Willms/Tramonte 2015).

- Including out-of-school youth in the assessments: A unique feature of PISA-D is that it will also include 15-year-old youth in the participating countries who are not attending school – data indicates that on average one third of 15-year-olds are out-of-school in developing countries. The aim is to provide participating countries with a report on the capacity of all of the 15-year-olds in the population, including those that are in school and in the target grades for PISA (Grade 7 and above); those that are in school and below the target grades for PISA (i.e., those 15 year-olds in primary school); and those 15-year-olds that are out-of-school. The challenges in this case are to develop enhanced achievement tests, contextually relevant questionnaires and appropriate mechanisms and approaches for the collection of data from out-of-school youth. The framework for PISA-D thus emphasizes student learning over the life-course, access to schooling, and equality and equity (Carr-Hill 2015).

In addition to considering these technical issues, the OECD has also commissioned a systematic review and gathered empirical evidence related to the experiences of middle-income countries and economies participating in PISA over the last 15 years to inform the development of the project (Lockheed et al. 2015). This review has shown that there has been considerable growth in the last two decades in the extent of developing country participation in PISA and other international learning assessments. Middle-income countries, particularly lower-middle-income countries, encounter financial, technical and contextual challenges in participating in PISA. Financial challenges are the most pressing, with the main financial challenge being adequate and sustained financing for the units or agencies responsible for the assessment. Technical challenges involve some specific PISA tasks, particularly for translation, sampling, survey administration and coding of responses. Contextual challenges involve the political, regulatory and cultural environment of the countries, which can affect ease of assessment implementation and use. In connection with these issues, there is a recognition that some participating countries may not be making the most out of their participation in PISA and OECD needs to meet a different set of expectations and needs from these countries.

A further piece of work commissioned by the OECD as part of its preparation of the project was a review of the major international and regional large-scale educational assessments (Cresswell et al. 2015). For the purpose of the review the surveys were organised into three categories: large-scale international surveys, school-based surveys and household-based surveys. The large-scale international surveys that were part of this review include: PIRLS and prePIRLS, TIMSS and TIMSS Numeracy, SACMEQ, PASEC, LLECE and WEI-SPS.¹ Two school-based surveys, EGRA and EGMA,² were also reviewed. In addition, several household-based surveys were reviewed,

including: PIAAC, STEP, LAMP, ASER and Uwezo.³ The paper summarised the main characteristics of the reviewed international surveys and compared and contrasted their different experiences and approaches, drawing lessons for PISA-D. These lessons include the importance of developing an appropriately targeted test and the subsequent division of students into the various proficiency levels, thus providing extremely valuable information to the education ministries in the participating countries.

These expert papers, information and evidence have all been discussed in a series of technical workshops and international meetings involving the OECD, participating countries, development partners, institutional partners and relevant selected experts. Through the completion and agreement of the papers and the discussions with partners and visits to the participating countries the project design has been completed. This project design process has taken two years to complete (2013–2014) and has resulted in a technically robust and comprehensive approach that is informed by the experiences of PISA and other large-scale international assessments and owned by all the participating countries, technical partners and development partners.

Preparing the participating countries

It is a central requirement of PISA and PISA-D that the participating countries will establish a National Centre (NC), nominate a National Project Manager (NPM) and ensure that an appropriate infrastructure and appropriate resources are in place to implement the assessment in accordance with the PISA Technical Standards. All of the PISA-D countries have put these arrangements in place and technical capacity-building and knowledge-transfer opportunities have been clearly identified as a key part of the design of the PISA-D project. A three stage process has been developed and implemented in respect of preparing participating countries for project implementation and ensuring that the capacity building benefits of participation are fully realised. These stages are illustrated in the figure below:

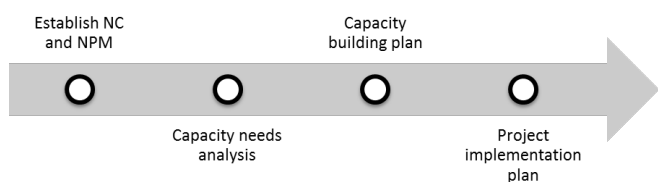


Fig. 1: Stages of participating country preparation; Source: authors' own graph

Progress in completing each of the latter three stages is briefly described below.

Capacity needs analysis

In collaboration with the World Bank, commissioned experts and participating countries, the OECD Secretariat has developed an analytical framework for assessing the capacity needs of countries related to the management of large scale assessments and PISA in particular. This analytical framework utilises benchmarks related to PISA standards as well as elements of the World Bank's SABER-Student Assessment questionnaires.⁴ The capacity needs analysis framework consists of 112 capacity ele-

ments that are required for successful implementation and stakeholder use of the PISA-D products. The organising structure of the framework is hierarchical, with each PISA-D capacity element nested within the following three main dimensions:

- the enabling environment, encompassing the legislative context and culture that facilitates the implementation, and the stakeholders who make use of the results;
- organisation, encompassing the National Centre and any sub-national institutions that are directly involved in the implementation of the project; and
- the individual, encompassing the staff of the National Centre and related organisations, in particular the National Project Manager(s) and his/her team.

The capacity needs analysis framework has been applied by the OECD Secretariat with the help of its consultants to each of the participating countries and the resulting reports have been produced. These assessments have involved country visits and extensive consultations with stakeholders including ministries of education, national centres, development partners, NGOs, universities and think tanks. The needs analysis reports reveal that there is a solid foundational capacity for implementing the project in each of the countries, particularly technical capacity and knowhow. There are, of course, some gaps that will need to be addressed in the project through capacity building inputs to ensure that the project is implemented in accordance with PISA standards, but most of the core capacities required for successful implementation are already in place.

As a complement to the capacity needs analysis, the OECD also commissioned a review of the system level data in each of the participating countries (Gagnon 2015). In addition to the PISA background data from students and schools, the collection of system-level data is an important part of the PISA programme that facilitates the analysis and interpretation of the assessment results. The objectives of the review of system level data were to complete analysis of and collect system-level data for all countries participating in PISA-D and identify related issues, as well as options for addressing these. The review showed that, with one or two exceptions, most of the variables included in the usual PISA analysis have partial or total concordance with data that is currently part of the routine data collection activities of the participating countries.

Capacity building plans

The OECD Secretariat with the help of its consultants facilitated with the participating countries the design of capacity building plans to ensure that each country has the necessary capacity to implement the project. This necessary capacity is defined as:

- the ability of the individuals and institutions responsible for the project in each country to perform the necessary functions (as set out in the roles and responsibilities for National Centre and national project manager), solve the likely problems that will arise during implementation and set and achieve project objectives in a sustainable manner.

The capacity building plans address the areas in need of strengthening identified in the capacity needs analysis and are designed to enhance the three dimensions identified above in each coun-

try: the enabling environments for PISA, particularly the users of the results of assessments; the organisational capacity of the National Centres; and the individual competencies of key actors responsible for the project and its results. The plans cover the four year period of PISA-D implementation and are synchronized with the integrated timeline that has been agreed for this international assessment. These plans include activities such as: learning-by-doing; training; workshops; seminars; meetings and peer-to-peer learning events.

Project Implementation Plans

The project implementation plans for each participating country succinctly describe the actions to be carried out by the specific entities and agents that are named and commissioned for implementation by the authorities of the participating country. The content of the project implementation plans for each participating country include the detailed country specific scheduling for each of the key phases of the project, which are:

- Technical development (including review of instruments, design and testing of enhancements, preparation of materials and planning for field trials)
- Field trials and main data collection in the countries
- Analysis and reporting, including tailored national reports for each country

The project implementation plans have been prepared by the participating countries with the facilitation of the OECD Secretariat and its consultants. These project implementation plans have all been synchronized with the integrated timeline for the international assessment. Along with a set of standards, a single timeline, agreed and respected by all participating countries, is a fundamental pre-requisite for an international study yielding data that is comparable across countries.

Starting the project

Following consultation with its partners regarding Terms of Reference, the OECD has completed an international, competitive, open and transparent tendering process to identify and hire the necessary international contractors to deliver support to the project. With the international contractors in place, work is now progressing on the technical development of the frameworks and instruments to be used in the PISA-D assessment, including review of frameworks and instruments, design and testing of enhancements, preparation of materials and planning for the field trials which will take place towards the end of 2016. The good news is that on the basis of the work completed thus far, the experts and participating countries consider that it will be technically possible to enhance the instruments to make these more relevant to developing countries while still producing results that are comparable to the PISA scale.

During the preparation process OECD has participated in project launches in five of the participating countries. These launches have been national high level events combined with OECD support for engagement and communication strategies that are aimed at engaging with a wide audience and building alliances with key stakeholders, such as teachers' unions, school principals, education authorities at the local level, key departments of the Ministry of Education, other ministries, civil so-

ciety, academia, employers, the media and the wider population. These communication strategies and alliances are aimed at informing the key stakeholders about PISA and the country's participation in the assessment well before the results are published and preparing the ground for the effective use of the PISA results once they become available.

Next steps

The OECD is working with contractors and consultants to support the participating countries with their implementation of the PISA-D cycle from 2015 to 2019. As part of this, the OECD and contractors will help to deliver the capacity building plans with the participating countries and support each phase of implementation. This capacity building effort will also utilise peer-to-peer learning with experienced countries from PISA supporting the seven PISA-D countries. In addition to the implementation of the assessment cycle, OECD support will be provided to the PISA-D countries to help them with the analysis of their PISA results, the preparation of a country report and the dissemination of results and policy dialogue. This support is summarized in the figure below:

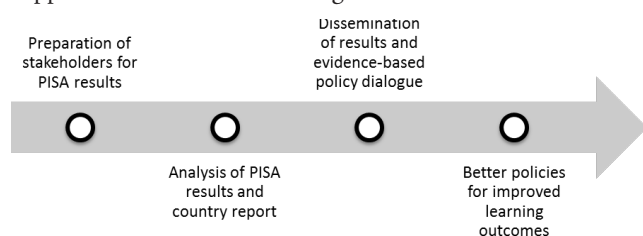


Fig. 2: Stages of support for analysis of results and dissemination;
Source: authors' own graph

The aim of PISA-D is not just to deliver a tailored and high standard international assessment but also to help the participating countries to analyse their results and use this as the evidence base for policy dialogue and the development of policies. The instruments and approaches developed through PISA-D will be used by OECD to enable a wider range of countries to participate in future PISA cycles.

Summary

This article has shown how the OECD and its partners are implementing the PISA-D initiative in support of the Education 2030 agenda that is set within the framework of the SDGs. These global frameworks emphasize the quality, equity, and measurement of learning outcomes for young children through to working adults. The OECD's initiative is helping the world to meet the challenge of defining and using global learning indicators that can be measured and tracked on a global scale over time.

For further information on PISA for Development, visit www.oecd.org/pisa/aboutpisa/pisaforddevelopment.htm.

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Notes

- PIRLS (Progress in International Reading Literacy Study) and TIMSS (Trends in International Mathematics and Science Study) are conducted by the IEA (International Study Center). More information on www.timssandpirls.bc.edu.
PASEC (Analyse Programme of the CONFEMEN Education Systems) is conducted by CONFEMEN (La Conférence des Ministres de l'Éducation des pays ayant le français en partage). More information on www.confemen.org/le-pasec.
SACMEQ (Southern and Eastern Africa Consortium for Monitoring Educational Quality). More information on www.sacmeq.org.
LLECE (a Latin American cross-national assessment) and WEI-SPS (World Education Indicators-Survey of primary schools) are coordinated by the UNESCO (United Nations Educational, Scientific and Cultural Organization). More information on www.llece.org and on www.uis.unesco.org/Education/Pages/world-education-indicators.aspx.
- EGRA (Early Grade Reading Assessment) and EGMA (Early Grade Math Assessment) are conducted by USAID (United States Agency of International Development). More information on www.eddataglobal.org.
- PIAAC (Programme for the International Assessment of Adult Competencies) is conducted by the OECD (Organisation for Economic Co-operation and Development). More information on www.oecd.org/site/piaac.
STEP (Skills Towards Employability and Productivity) is conducted by the World Bank. More information on microdata.worldbank.org/index.php/catalog/step/about.
LAMP (Literacy Assessment and Monitoring Programme) is conducted by UNESCO. More information on www.uis.unesco.org/literacy/Pages/lamp-literacy-assessment.aspx.
ASER (Annual Status of Education Report) is a household-study conducted in India. More information on www.asercentre.org.
Uwezo (meaning 'capability' in Kiswahili) are annual large scale, citizen-led, household-based assessments conducted in East Africa. More information on www.uwezo.net.
- SABER (Systems Approach for Better Education Results) is a programme to collect and analyse policy data conducted by the World Bank. More information on saber.worldbank.org.

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