



PISA FOR DEVELOPMENT

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Overview:

Lessons from international and regional educational assessments

This chapter provides the rationale for undertaking this study on the experiences of middle-income countries in relation to the Programme for International Student Assessment (PISA), and an overview of its analyses, conclusions and recommendations. It links PISA with the PISA for Development initiative and presents the questions the report seeks to answer. It also provides a summary of the findings from the review of evidence and the analyses conducted for the study. It draws conclusions and makes recommendations for the OECD, the World Bank and other development partners and for low- and middle-income countries.

RATIONALE FOR THIS REPORT

The Education 2030 agenda¹ that is set within the framework of the Sustainable Development Goals (SDGs) emphasises the quality, equity and measurement of learning outcomes for young children through to working adults. This report serves to inform Education 2030 discussions through an analysis of how the OECD's PISA has been experienced in middle-income countries.

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 5 000 students are tested in each country.

The OECD is seeking to enhance PISA to make it more relevant to a wider range of countries. The PISA for Development initiative (Box 1.1) has been designed to enable greater PISA participation by low- and middle-income countries.

Box 1.1 PISA for Development: Making PISA more relevant to low- and middle-income countries

In 2014, the OECD and a number of partners launched the PISA for Development initiative that aims to identify how PISA can best support evidence-based policy making in low- and middle-income economies and contribute to the UN-led definition of global learning goals for Education 2030. These objectives will be achieved in three main ways:

- Developing contextual questionnaires and data collection instruments that better capture diverse situations in emerging and developing countries.
- Adjusting the PISA test instruments so that they are sensitive to a wider range of performance levels.
- Establishing methods and approaches to include out-of-school students in the PISA assessment.

The project will also contribute to capacity building for managing large-scale student learning assessment in the participating countries: Cambodia, Ecuador, Guatemala, Honduras, Paraguay, Senegal and Zambia. A key feature of the project is peer-to-peer learning, which will be achieved through bringing together the middle-income countries already participating in PISA with the seven PISA for Development countries.

PISA for Development is guided by an International Advisory Group composed of representatives from development and technical partners supporting the project, and the participating countries outlined above. In addition, technical experts meet regularly to develop survey instruments and methodologies.

The OECD and its partners expect these efforts will enable more countries to use PISA to set national learning targets, monitor progress towards targets, and analyse the factors that affect student outcomes, particularly among poor and marginalised populations. Countries will also have greater institutional capacity to help track Education 2030 global targets and indicators that are focused on access plus learning.

Source: OECD PISA for Development web-site at: www.oecd.org/pisa/aboutpisa/pisaforddevelopment.htm.

This report complements and helps shape the PISA for Development project through presenting evidence derived from the experience of the 44 low-income and middle-income countries, including 3 OECD member countries (Chile, Mexico and Turkey) that have already participated in one or more cycles of PISA.²

This report also highlights the experience of a few carefully selected countries from the middle-income participants. It examines the experiences of these countries with respect to the challenges they have faced in participating in PISA, the use they have made of PISA results, the impact of their participation on their education policies and education systems, and their capacity to manage large-scale student assessments for system improvements and target-setting. The report also identifies areas where some countries may not have exploited their investment in PISA to its full potential and where participation in PISA may not have led to the outcomes or processes the country expected. It makes suggestions for how all countries, not only those in the developed world, can participate successfully in international large-scale assessments of learning outcomes. It is also intended to be a useful policy tool for facilitating discussions with countries about participating in international large-scale assessments.



OVERVIEW: THE QUESTIONS THE REPORT SEEKS TO ANSWER

This report addresses the following six questions:

1. Which countries/economies have participated in PISA and other international large-scale assessments?
2. Why do countries/economies participate in PISA?
3. What have been the challenges facing middle-income countries participating in PISA?
4. What have been the capacity building outcomes for middle-income countries participating in PISA?
5. How have PISA results informed education policy discussions and affected education policy in middle-income countries?
6. What do PISA data tell us about education in middle-income countries?

The report uses a variety of methodologies to address these questions, including: interviews, surveys, literature reviews, reviews of donor documents, analysis of online archives of major news media in selected middle-income countries, and secondary analysis of the PISA data sets. The empirical evidence gathered for this study suggests some answers to the six questions and are summarised below.

FINDINGS FROM THE REVIEW OF EVIDENCE AND ANALYSIS

More countries are participating in international large-scale assessments

Country-level participation in international large-scale assessments has grown steadily in recent decades and approximately two-thirds of all countries with populations greater than 30 000 have participated in one or more international or regional large-scale assessment. Some low- and middle-income countries began to participate in international assessments in the early 1970s and their participation has grown considerably since then, reaching a total of 65 low- and middle-income countries participating in various international or regional assessments in 2015. PISA has also grown significantly since its first cycle in 2000 and reached about 70 countries in the 2015 cycle, 26 of which were middle-income countries as of 2013. Countries in North America and Europe/Central Asia have the highest PISA participation rates, whereas countries in South Asia and sub-Saharan Africa have the lowest.

Countries participate in PISA for many reasons, but money is key

Countries decide to participate in PISA for a range of reasons. In general, wealthier countries have participated more often than less wealthy countries, and all OECD countries have participated. Most countries in Europe and North America have participated, while many countries in South Asia, Latin America, and Sub-Saharan Africa have not. Countries that have prior experience with national assessments and with other international large-scale assessments, in particular the International Association for the Evaluation of Educational Achievement's (IEA) Trends in International Mathematics and Science Study (TIMSS), have been much more likely to participate than countries lacking that experience. Experience with a regional assessment is unrelated to participation in PISA. Low-income countries³ generally have not participated. Lower-middle-income countries have generally participated when participation has been encouraged and financed by donors. Many upper-middle-income and high-income countries have participated following long and steady experience with related activities – such as national assessments and examinations – that have established a culture of assessment with the necessary technical and administrative capacity for conducting and learning from international large-scale assessments. The evidence shows mixed experiences across countries, which suggests that context matters and that the reasons for participation in one country may be very different from the reasons in another.

Middle-income countries encounter financial, technical and contextual challenges

This report identifies three types of challenges that confront lower-middle- and upper-middle-income countries participating in PISA and other international large-scale assessments: financial challenges, technical challenges, and contextual challenges.

Financial challenges are the most pressing. The main financial challenge is adequate and sustained financing for the units or agencies responsible for PISA. Many lower-middle-income countries that have participated in PISA have benefitted from donor support for their international participation fees and other direct costs of the assessment. A second financial challenge is the modest level of information available about the direct costs of participation, with some countries significantly underestimating the level of effort and associated costs required for the successful completion of PISA. A third financial challenge relates to the absence of financial resources and support for analysing data and preparing a national report. Support for estimating the actual costs of conducting the assessment, inclusion of these costs in an annual budget, and donor support to lower-income countries could help mitigate these challenges.

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The main technical challenges are largely operational: *i*) translation into multiple languages from source documents provided in English and French (also regional differences in some languages such as Spanish, French or Arabic); *ii*) sampling (particularly in large federal or decentralised systems); *iii*) survey administration; and *iv*) coding of open-ended questions. In some countries, regulations regarding contracting the part-time staff needed to implement a large-scale assessment have created challenges. Support for assessing the capacity of newly participating countries relative to the PISA standards could help mitigate this challenge.

The main contextual challenges are the political, regulatory and cultural environment of the countries. These challenges are often broad and difficult to address as they vary from country to country. Nevertheless, it may be necessary to analyse these challenges as they relate to specific countries and to make adjustments in certain PISA processes at the country level, while adhering to quality standards. In particular, additional effort may be needed for outreach to stakeholders so that the entire education system – including the central ministry, social partners, teachers, parents and students – has a better understanding of the assessment, what it shows, and how it can help guide quality and equity improvements.

PISA participation has built on prior assessment experience

To date, most countries that have participated in PISA have had significant prior experience with other international large-scale assessments or with national assessments, allowing PISA implementation to build on this experience. The capacity development activities of previous PISA cycles have been limited to specific technical quality aspects of the assessment and are closely embedded in the twice-yearly meetings of the National Project Managers. Training is designed to strengthen existing capacities with respect to operational tasks, such as sampling, data collection, data entry, professional scoring of constructed-response items and translation. In general, training has been effective. It was not designed to enhance the enabling environment for assessment, although in many cases this can be a side effect when PISA is carried out by national assessment agencies. Extending and deepening this training may be needed to enhance the assessment capacity in some low- and middle-income countries.

PISA results have informed some education policy in middle-income countries

Policy formulation begins with agenda setting, often through the public discussion of policy issues in the media. Specific policy reforms in low- and middle-income countries are also discussed in the context of private, country-level dialogue with donors. Evidence indicates that high-income OECD member countries have responded to the publication of PISA results by seeking to learn from the experience of other countries and by reflecting on education policy, often very publicly. Available evidence suggests that this is less the case in middle-income countries, where public dialogue about education policy, as observed in selected public media from eight middle-income countries, has little relationship with the publication of PISA results.

However, PISA and other international large-scale assessments have informed the policy dialogue between countries and donors, as indicated by a review of World Bank projects. International large-scale assessments have provided empirical evidence of the need for policy reforms to improve the quality and equity of education outcomes in numerous countries, and have occasionally been used as key results indicators for projects and programmes supported by donors. Most empirical evidence of PISA's direct impact on policy reforms focuses on high-income countries. Some evidence for middle-income countries suggests effects on curricula, performance standards and assessments.

PISA results underscore differences between high-income and middle-income countries in education quality and equity

Analyses of PISA 2012 for all participating low- and middle-income countries provide evidence regarding the overall quality of and equity within education systems, as well as evidence regarding systemic differences among the countries. These analyses also demonstrate differences between high- and middle-income countries and among countries and regions regarding the factors associated with higher performance. For example, the socio-economic background of students explains more between-school differences in middle-income countries than in OECD countries, on average. These analyses also indicate, however, that existing PISA student background and school questionnaires may be more relevant for high-income countries than for low-income or lower-middle-income countries, since – in particular – the school questionnaire provides little information regarding the types of resources that often explain between- or within-school differences in student performance in developing countries. Both of these questionnaires may need to be modified to better reflect the home environments and school contexts common in low-income and lower-middle-income countries.



CONCLUSIONS

The report reaches five conclusions:

1. **PISA will need substantial enhancements to achieve the OECD's aim of making it more relevant to a wider range of countries.** Virtually all high-income countries and many upper-middle-income countries already participate in PISA. Participation in PISA is associated with national wealth, geographical location in Europe/Central Asia and North America, and prior experience with national or international large-scale assessments. Non-participating low- and middle-income countries may lack some or all of these factors, and therefore they may find participation more challenging.
2. **PISA participation challenges are greater for lower-middle-income countries than for upper-middle-income countries and high-income countries.** These challenges include financial, technical and contextual challenges in conducting the assessment, which are typically not challenges to higher-income countries. The two main financial challenges are adequate and sustained financing for the units or agencies responsible for PISA, and insufficient information regarding the incremental costs associated with participation.
3. **Much remains to be learned about the impact of PISA participation on assessment capacity development in middle-income countries.** PISA implementation has benefitted from existing assessment capacity in most participating countries, developed through participation in other assessments. To date, there has been no rigorous evaluation of the impact of PISA participation on assessment capacity development, particularly for middle-income countries. Some middle-income countries, however, report that participation has built some operational capacity. To answer the question of capacity development, a sound evaluation is needed.
4. **Private dialogue between government officials and development partners regarding the results of PISA has been useful in helping shape investment priorities and policies in middle-income countries.** The role of PISA in affecting education policy may differ between middle-income countries and OECD countries, since public, published discussions about education policy are less prevalent in some middle-income countries.
5. **PISA provides valuable information about the level and distribution of quality and equity within a country's education system.** However, the existing PISA cognitive instruments and questionnaires need to be enhanced to better capture the range of performance in low- and middle-income countries, and to provide more information regarding context, institutions and inputs that could improve education quality and equity in middle-income countries.

RECOMMENDATIONS

On the basis of the above findings, this report makes recommendations directed to low-income and middle-income countries, the OECD, and to the World Bank and other development partners. These recommendations are intended to: *i*) enhance the future development of PISA in ways that could help low- and middle-income countries better participate in PISA and other international large-scale assessments; *ii*) encourage financial support for greater participation in PISA and other international assessments by low- and middle-income countries; and *iii*) improve the utility of PISA participation by low- and middle-income countries.

Recommendations for low- and middle-income countries

1. Continue to work towards the establishment of an assessment culture that seeks to learn from international large-scale assessments, such as PISA and others, by:
 - Fully funding the incremental implementation costs for participation in international large-scale assessments through sustained support to implementing units or agencies.
 - Increasing outreach to stakeholders through both conventional media, new media and seminars, so that the entire education system – from the central ministry to teachers to parents – has a better understanding of the assessment, what it shows, and how it can help guide quality and equity improvements.

Recommendations for the OECD⁴

2. Acknowledge the differences between countries currently participating in PISA and the low- and middle-income countries that are not currently participating by:
 - Expanding the cognitive instruments to reflect where the majority of students in developing countries are likely to be in terms of learning levels and, in particular, to better capture performance differences at the lower end of the performance scales.

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- Enhancing the questionnaires to better measure contexts, institutions and inputs that are relevant to these countries, through improving the quality of information collected on teachers and teaching, emphasising features of schools that are more important in low- and lower-middle-income countries (such as basic infrastructure and instructional materials), and enhancing the measure of students' socio-economic background.
 - Reviewing the implementation process to better understand constraints in low- and middle-income countries and propose new approaches that maintain current levels of rigour and quality while making participation more manageable and attractive.
 - Expanding some of the regular OECD analyses of PISA to focus on middle-income participating countries. This can be done by analysing results separately by income group and world region.
3. Help reduce the technical challenges to PISA participation by lower-middle-income countries by:
 - Providing source documents in additional languages, with verified translations.
 - Providing capacity assessment, capacity building and increased continuous remote assistance from international contractors hired by the OECD to support countries as they implement the tasks associated with the assessment.
 - Analysing the contextual challenges for each new participating country and adjusting PISA processes as needed, while maintaining standards for the reliability and validity of the assessment results.
 4. Evaluate the impact of PISA participation on assessment capacity development in middle-income countries by:
 - Implementing baseline assessments of country capacity and monitoring change in capacity over time for low- and middle-income countries joining PISA 2018.

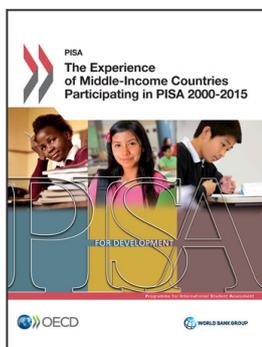
Recommendations for the World Bank and other development partners

5. Help reduce the financial challenges to PISA participation for lower-middle-income countries by:
 - Supporting the development of a document, aligned with the National Project Manager's manual, to help countries better estimate the direct costs associated with each task required for implementing the assessment.
 - Using country dialogue to encourage countries to fully fund the implementation costs of PISA and other large-scale assessments in the annual budgets of the units or agencies responsible for conducting the assessment.
 - Continuing to support the costs of participation in international large-scale assessments through the World Bank's lending operations and grants programmes and development co-operation more broadly.
6. Help support research and development that could lead to analyses of PISA data more attuned to the policy needs of the individual participating countries by:
 - Establishing fellowship and grants programmes for this purpose, building on the experience accumulated at the OECD with the Thomas J. Alexander Fellowship Programme,⁵ which focuses on emerging economies.
 - Financing or providing technical training for researchers in low- and lower-middle-income countries in the use of data sets from PISA and other large-scale international assessments.
 - Financing the preparation of country-level reports based on in-depth research using PISA data.



Notes

1. The Education 2030 agenda refers to the fourth Sustainable Development Goal (SDG) – ensure inclusive and equitable quality education and promote life-long learning opportunities for all – and the ten targets that have been put in place to support this. This goal and targets were adopted by the UN General Assembly, along with 16 other SDGs and 159 other targets, at the sustainable development summit in New York in September 2015.
2. 44 countries have participated in some PISA cycle at the time they were classified as low- or middle-income; not all these countries are currently low- or middle-income countries.
3. This report was originally designed to include issues of low-income countries participating in PISA, but since only four countries have ever participated at the time they were classified as low-income countries, the report instead focuses on lower-middle-income and upper-middle-income countries.
4. Several of these recommendations were anticipated by the ongoing PISA for Development initiative.
5. The Thomas J. Alexander Fellowship Programme of the OECD seeks to develop and support improvements in education quality and equity, particularly in emerging economies, in three ways by: supporting quantitative research to provide evidence-based analysis relating to education policy and practice; strengthening the use of such analysis in policy making; and helping education leaders modify their practices to maximise its impact on student learning.



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