

Leonard Cheshire Disability and Inclusive Development Centre

Participation and Performance of Students with Special Educational Needs (SEN) in the OECD Programme for International Student Assessment (PISA)

Summary of descriptive studies: technical report

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FOREWORD

This report was prepared by Marcella Deluca, Senior Research Fellow, Leonard Cheshire Disability and Inclusive Development Centre, Department of Epidemiology and Public Health, University College London; and Dr Peter Evans, Independent International Consultant, Disability and Inclusive Education, former Head of Study, SENDDD, Education Directorate, OECD.

ABBREVIATIONS

DDD	Students with Disabilities, Difficulties and Disadvantages
EC	European Communities/Commission
ESCS	Economic, Social and Cultural Status
IEA	International Association for the Evaluation of Educational Achievement
ICT	Information and Communication Technology
IE	Inclusive Education
OECD	Organisation for Economic Co-operation and Development
PIAAC	Programme for the International Assessment of Adult Competencies
PIRL	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
SEN	Special Education Needs
SENDDD	Special Education Needs, Disabilities, Difficulties, Disadvantages
STF	Student Tracking Form
TIMMS	Trends in International Mathematics and Science Study
UH	<i>Une Heure</i> booklet
UN	United Nations
UNCRPD	UN Convention on the Rights of Persons with Disabilities
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund

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BACKGROUND

International and national legislation, policies, and advocacy initiatives demand equity and social inclusion for students with disabilities in all aspects of school reforms, programmes, and services (UN, 2006; UNESCO, 2013/4; OECD, 2013). Standards-based reform demands that education systems set high academic content standards for *all* children, and that they develop assessment and accountability systems to ensure that all children learn to very high levels. The assumption is that education systems will implement inclusive instruction and assessment programmes, assuring that all students, including students with special educational needs, have the opportunity to participate in high quality instruction and learning activities that will lead to valued social and vocational outcomes.

While the physical and academic inclusion of students with special education needs in general education schools and classrooms has steadily increased globally over the past three decades, their corresponding inclusion in standardised assessment and accountability systems has not proceeded at the same pace (OECD, 2005, Zenisky & Sireci, 2007; Schuelka, 2013). Numerous issues have contributed to the slow integration of these students into assessment systems, including concerns about participation options, testing accommodations, alternate assessments, reporting results, teacher evaluations and funding concerns (National Center for Educational Outcomes, October 2003, Lang, et al, 2008). At the international level, the Organisation for Economic Co-operation and Development (OECD) has similarly been concerned with public accountability of education, and the comparative functioning of education systems across the world, for all students.

The potential intersection of the parallel missions of the OECD SENDDD Education Programme (which examined education systems and outcomes for students with special education needs) and OECD Programme for International Student Assessment (PISA), which examines education systems and outcomes for secondary school students, has been evolving over the past several years.

The systemic concerns about assessment at national level are equally valid at the international level and focus on questions:

- on the inclusion of students who are educated in segregated schools and buildings, and students who have more severe disabilities;
- as to whether students not educated in the general education curriculum are exposed to the same concepts;
- around policies on accommodations, standardisation of accommodations, and types of accommodations for specific tests and items (OECD, 2012).
- around the inclusion of test results for students with special educational needs in national and international data.

In 2005 LeRoy, Kulik, Tamassia, Evans, Deluca, and Robson conducted the first study related to students with special educational needs in PISA 2003 (OECD 2007). Findings focused on descriptions of participation by country and student demography, and performance by academic areas, learner behaviours, and social background. In 2008 LeRoy, Samuel, Bahr, Evans, and Deluca replicated the study focusing on students with SEN from the Baltic States and South-East European countries using PISA 2006 data (OECD/European Communities 2009). Specifically, SEN student performance was examined related to typical students, learner behaviours, and social background. Implications for broad-based participation, test development, accommodation, and reporting were discussed.

This report comprises two sections:

1. Part One summarises findings and issues from the above mentioned studies which used PISA 2003 and PISA 2006 data; furthermore it describes a research study which was undertaken in early 2015. This study replicated the two previous studies and extends these previous studies by systematically addressing the issues of participation, accommodations, and performance of students with special educational needs by using PISA 2012 data. Findings will be available towards the end of 2015.

2. Part Two identifies and discusses outstanding questions and issues to be addressed moving forward. It concludes with hypotheses of areas of research in this arena.

OVERVIEW OF THE PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT (PISA)

PISA is a large-scale, multinational OECD programme which is designed to develop internationally comparable indicators that inform the process of education policy, reinforce the public accountability of education, and provide insight into the comparative functioning of education systems. PISA provides outcomes on basic, contextual, and trend indicators.

PISA is different from most educational assessments in that it examines young people's capacity to use their knowledge and skills in order to meet real-life challenges, rather than merely assessing the mastery of school curricula.

The assessment uses multiple-choice and open-ended questions to assess academic knowledge and skills in the areas of reading, mathematics, science, problem-solving, and optional areas such as Information and Communication Technology (ICT). In addition, information is gathered on the students' attitudes and approaches to learning, and student and school demographic backgrounds.

New to PISA 2003 was a distinct variable on the Student Tracking Form (STF) which among other variables identifies the student's special educational needs status.

The assessment is implemented every three years, with a representative sample of 15 year-old students from each participating country.

The inaugural 2000 PISA focused on reading literacy, and gathered data from 265,000 students from 32 countries. In 2003, PISA began to collect data on students with special educational needs within their test sample. Since 2003 approximately 2% of the PISA international samples have included students with special educational needs. Overall, the 2006 assessment included students from 57

countries and nearly 400,000 students. The 2009 and 2012 assessments included students from 65 countries (representing more than 80% of the world's countries) with a focus on reading and mathematics, respectively, with a sample of 470,000 students in PISA 2009 and 510,000 students in PISA 2012. In addition, the 2012 assessment included a computer-based testing method for a smaller sample of the students. Starting with 2015, the administration of the entire PISA assessment will be computer-based.

The sampling strategy for identifying eligible schools and students has strict guidelines regarding exclusions. At the school level, 0.5% of the population may be excluded due to geographic inaccessibility, and another 2.0% may be excluded due to the segregated nature of their population, e.g., schools that only serve students who meet the student exclusion criteria as stated below. Within schools, another 2.5% of the population may be excluded if the students are identified as either having a functional disability, a cognitive, behavioural or emotional disability, or limited experience of the language of the PISA assessment. Exclusion guidelines state that overall estimated student exclusions should be under 5%. The Student Tracking Form records information on each student's inclusion/exclusion status. A student identified with SEN is not automatically excluded from the assessment. An exclusion code is applied only if the SEN existed to the degree that a school official or the test administrator deemed the student unable to perform in the PISA testing situation. The implications of these exclusions are discussed in this report.

PISA provides an optional test instrument for students with special educational needs: the Une Heure (UH) Booklet. This instrument was originally designed for use only in schools where all students have special education needs or are all functioning academically at a level such that the regular booklets would be considered inappropriate. The UH booklet is composed of the PISA items deemed most suitable for students with special needs, and the test is designed to be only one hour in length, instead of the standard two hour assessment. The regular PISA booklet and the UH booklet cannot be mixed within the same school. Countries wishing to use the UH booklet must obtain prior approval and a separate test administration manual (PISA, 2003).

PART ONE – SUMMARY OF THE PISA 2003 & 2006 STUDIES AND DESCRIPTION OF THE FORTHCOMING PISA 2012 STUDY

THE PISA 2003 STUDY

The aim of the PISA 2003 study was to examine the participation and performance of students with Disabilities, learning Difficulties and Disadvantages (DDD) in PISA 2003. The study was reported in OECD (2007), *Students with Disabilities, Learning Difficulties and Disadvantages - Policies, Statistics and Indicators*, Chapter 7, pages 177-200, here referenced to as OECD 2007.

The study described the participation rates by countries, including OECD member countries and partner countries. Furthermore, it described the demographic characteristics of the students categorised in PISA as having special educational needs. Four such categories were recognised: functional disability; intellectual disability; limited test language proficiency; and other. Functional disability was defined as having a moderate to severe permanent physical disability. Intellectual disability was defined as having a mental or emotional disability and having been either tested as cognitively delayed or considered in the professional opinion of qualified staff to be cognitively delayed (OECD, 2004b). Limited test language proficiency was defined as not being a native speaker of the language of the test instrument in the country of test administration. The last category “other” was uniquely defined by each country PISA manager and approved by the international PISA centre. The majority of the students in this category were diagnosed with dyslexia.

Students’ educational experiences and perceptions were presented as well as their perceptions of their learning behaviours. A major intent of the study was to examine the performance of these students on mathematics, reading, and problem solving. This performance was compared to typical PISA participants for the three skill areas. The strength of the relationships between learner behaviours and mathematics performance, and the economic, social, and cultural status (ESCS) of students and mathematics performance for students with special educational needs was also

explored. Furthermore, mathematics performance was examined in terms of the test format and type of disability.

Study questions

Specifically, this study addressed the following questions (OECD, 2007):

1. What is the PISA 2003 participation rate by country of students with disabilities, difficulties and disadvantages?
2. What are the demographic characteristics of the students with Disabilities, Difficulties and Disadvantages (DDD) who participated in PISA 2003?
3. What were the educational experiences and perceptions of school of the students with DDD who participated in PISA 2003?
4. How do students with DDD perform on PISA 2003 (mathematics, reading, problem solving)?
5. Are there differences in PISA 2003 performance by test booklet format?
6. How do students with DDD compare to typical PISA students on effective learner behaviours?
7. What is the relationship between effective learner behaviours and PISA mathematics performance for students with DDD?
8. What is the economic, social, and cultural status of students with DDD who participated in PISA 2003?
9. How do students with DDD compare to typical PISA students on economic, social and cultural status?
10. What is the relationship between the economic, social, and cultural status backgrounds of students with DDD and their PISA performance?

Methodology

Participants

The participants for this study were students with disabilities, difficulties and disadvantages who participated in PISA 2003. These students were identified through the Student Tracking Form under the code of SEN (special education needs). Within that code, students could be classified as one of five types, as described in the table below (total sample of SEN students: n=3717, 1.37%):

Table 1 Students identified through the Student Tracking Form in the PISA 2003 assessment

No special education needs	Functional disability	Intellectual disability	Limited language proficiency	test	Other
272,398	311	1,815	900		741

In order to be included in the PISA database, students had to be classified in the above five categories, as well as participate in the assessment, and have the following data available: demographic; background information; performance in mathematics, reading and science; all student questionnaire variables, including motivation, interest in mathematics and approaches to learning; and all school questionnaire variables.

Variables

Three sources of data were used to complete this study: the student tracking form; the student questionnaire; and the student performance outcomes. The datasets were merged using a distinct linking variable across the sets. A description of these specific variables is presented with the findings to those study questions in OECD 2007.

Limitations

The authors identified the following limitations:

- The definitions of categories of special educational needs cannot be directly related to the OECD tri-partite cross-national model (DDD) as described in Chapter 1 OECD 2007, or in previous OECD publications of the series (OECD 2000, OECD 2004, OECD 2005, and subsequently OECD/EC 2009).

- Nor could they relate easily to the category system used in participating countries.
- For some specific analyses, the sample sizes were very small and any inferential findings should be viewed with extreme caution.
- No attempt was made to link school questionnaire data with the student data during this study.
- No attempt was made to examine student performance on mathematics scales or individual items; only overall performance was reported.
- No attempt was made to examine student performance by country, given the small overall size of the sample and the extremely small size of the sub-samples within each country.

Results summary

A full account of findings is reported in chapter 7 in OECD 2007. PISA 2003 represented the first year that the Student Tracking Form allowed countries to describe the test participants by special educational needs, enabling this descriptive study examining the participation and performance of students with special educational needs to be completed. The study described the demographic characteristics of the students, their educational experiences and perceptions, their learning behaviours, and their PISA performance. While PISA 2003 focused on mathematics performance, reading and problem solving abilities were also examined. The performance of students with special educational needs was examined in all three assessment areas, as well as in relation to typical students, test format, and socio-economic status.

Overall, the percentage of students identified as having some type of special educational need was extremely low, representing less than 2% of the total PISA population sample. However, the trends that are present within and between these students and the typical PISA participants highlighted concerns that merit further exploration and discussion. These can be summarised as follows:

- ***Sampling level exclusion of students with special educational needs:***

While this study did not address the sampling strategy and issues of the exclusion of students with special educational needs at the country level, the study did indicate that a significantly smaller percentage of students with special educational needs are participating in PISA than exist in the countries. As all OECD/CERI reports referred to above – including OECD 2007 – consistently indicate, the percentage of students with disabilities, difficulties and disadvantages in member countries ranges from 5-15%. The 2003 administration of PISA reported less than 2%. Further study of the exclusion mechanisms at the sampling level is warranted to understand this low participation rate of students with special educational needs.

It is worth pointing out at this stage however, that countries vary considerably in terms of the proportions of students they excluded within schools. Spain and the United States, for example, exclude around 7% as opposed to Japan which excludes no children, 0%. A follow-up questionnaire on students with special educational needs who are excluded at the country or school level would further our understanding of who is excluded from the sample and based on which criterion.

- ***Student Tracking Form SEN code:*** PISA includes the SEN code on the Student Tracking Form and this represents a step forward in acknowledging the existence of students with special educational needs and their right to be included in the test. However, allowing the countries to define how they will use the four broad categories of special educational needs (functional disability, intellectual disability, limited test language proficiency, and other) results in wide discrepancies in student ability under the seemingly same educational label.

In addition, the use of national definitions makes generalisation of the categories across countries problematic. To facilitate more precision in testing and the interpretation of the test results, it was recommended in OECD 2007 that PISA adopt the standardised definitions for disabilities, difficulties and

disadvantages that have been developed by OECD/CERI, as described in Chapter 1 of OECD 2007. Coordination between the PISA national managers and the CERI national advisers may well facilitate this process.

- ***PISA test format and item review:*** Independent of which test format (regular or UH booklet) was administered to students with special educational needs, they performed lower on test scores than typical students across all measures.

It was recommended in OECD 2007 that a more in-depth study be completed which would examine the nature of the test items, student educational needs, and student performance in both test booklet formats. In particular, it would be important to understand if consistent patterns exist related to specific items, students' special education needs, and student performance. Paralleling this analysis should be a study of the effect of standardised accommodations on student performance.

- ***ESCS index and student performance:*** The examination of ESCS and student performance in this study provided good support for the view that special educational needs extend beyond just those students who have disabilities, to include students with difficulties and disadvantages. Across the entire population, those students who had lower ESCS scores consistently and significantly scored lower in all PISA assessment areas. Further study is warranted to examine the impact of additional resources in modifying these outcomes.

- ***School questionnaire and SEN:*** The analysis of the school questionnaire suggests that important variables related to special needs are absent. In particular, the questionnaire does not capture data relative to the number of students with special educational needs in a building; the number or qualifications of special education teachers and support staff; or information about the instructional strategies used at the classroom level to facilitate the learning of students with special educational needs. The inclusion of these variables on the school questionnaire would increase our understanding of the

learning situation of the students who have educational labels and who participate in the PISA assessment.

THE PISA 2006 STUDY

This descriptive study examined the PISA 2006 participation and performance of students with special educational needs who reside in the Baltic States and in South-eastern European countries¹. The study described the participation rates by country and the demographic characteristics of the students with special educational needs as a group, as well as by their disability status. Students' educational experiences and perceptions were presented as well as their perceptions of their learning behaviours. The study was reported in OECD/European Communities (2009), *Students with Disabilities, Learning Difficulties and Disadvantages in the Baltic States, South Eastern Europe and Malta: Educational Policies and Indicators*, Chapter 7, pages 127-158 on PISA 2006 and the Participation of Students with Special Educational Needs, here referenced as OECD/EC 2009.

A major aim of this study was to examine the performance of students with special educational needs on PISA science, mathematics, and reading. This performance was compared to typical PISA participants for the three skill areas. The strength of the relationships between learner behaviours and science performance, and student ESCS and science performance for students with special educational needs was explored. Furthermore, performance was examined by type of disability.

Finally, student perceptions of their ICT access and competence, as well as selected school characteristics for students with special needs were described.

For comparative purposes, the results for the Baltic and South-eastern European SEN students were compared to SEN student samples from PISA, OECD, and the European Union on selected variables.

¹ Countries that were included in the study were: Bulgaria, Croatia, Estonia, Latvia, Lithuania, Montenegro, Romania, Serbia and Slovenia

Study questions

Specifically, this study addressed the following primary questions (OECD/EC 2009), which differ from the previous study because they focus on the Baltic States and South Eastern Europe:

1. What is the PISA 2006 participation rate of Baltic and South-eastern European students with special educational needs by country?
2. What are the demographic characteristics of the Baltic and South-eastern European students with special educational needs who participated in PISA 2006?
3. What were the educational experiences and perceptions of school of the Baltic and South-eastern European students with special educational needs who participated in PISA 2006?
4. How do Baltic and South-eastern European students with special educational needs perform on PISA 2006 (mathematics, reading, science competencies)?
5. How do Baltic and South-eastern European students with special educational needs compare to typical Baltic and South-eastern European PISA students in effective learner behaviours (attitudes toward science)?
6. What is the relationship between effective learner behaviours and PISA performance for Baltic and South-eastern European students with special educational needs?
7. How do Baltic and South-eastern European students with special educational needs compare to typical Baltic and South-eastern European PISA students on economic, social and cultural status (ESCS)?
8. What is the relationship between the ESCS backgrounds of Baltic and South-eastern European students with special educational needs and their PISA performance?

9. What were the perceptions of Baltic and South-eastern European students with special educational needs with regard to information and communication technology (ICT) access and competence?

Related to questions 1-4, 6 and 9 above the following secondary question was addressed:

How does the Baltic and South-eastern European countries' SEN sample compare to the other SEN samples (e.g. PISA, OECD and EU)?

Methodology

Subjects

The subjects for this study were students with special educational needs from Baltic and South-eastern European countries who participated in PISA 2006. The specific Baltic States and South-Eastern European countries that were included in the study were Estonia, Latvia, Lithuania, Bulgaria, Croatia, Montenegro, Romania, Serbia, and Slovenia. As for the previous PISA study using 2003 data, students with special educational needs were identified through the Student Tracking Form under the code of SEN (special education needs), as described in the table below (however, total sample of SEN students: n=4089, 1.03%).

Table 2 Students identified through the Student Tracking Form in the PISA 2006 assessment

	No special education needs	Functional disability	Intellectual disability	Limited test language proficiency	Other
Total sample	394290	421	1906	877	426
Study sample ²	44713	52	219	21	0

² Sample composed by Baltic and South-Eastern European countries

For selected questions, the students with no special education needs (code 0) were used for comparative analyses. In addition, for comparative analyses among students with special educational needs, SEN samples from PISA, OECD, and the EU were used. The students who were included in the PISA database were identified as above; participated in the assessment; and the following data exist: demographics; background information; performance in mathematics, reading and science; all student questionnaire variables, and all school questionnaire variables.

Variables

Five sources of data were used to complete this study: the student tracking form; the student questionnaire; the student performance outcomes; the school questionnaire; and the ICT familiarity component of the student questionnaire. The datasets were merged using a distinct linking variable across the sets.

Limitations

As for the study on PISA 2003 data, this study included the following major limitations that rotate around the definitions of type of disability being broad and not matching any specific national or international definitions or criteria such as the resource model of defining special education needs as presented by OECD (e.g. OECD, 2007). Therefore, generalisation of the findings to the special educational needs population are not recommended or achievable.

- The sample sizes are very small and any inferential findings should be viewed with extreme caution.
- The small sample sizes also make international comparisons difficult.
- The SEN sample is unevenly distributed across the countries.
- No attempt was made to examine student performance by country, given the small overall size of the sample and the extremely small size of the subsamples within each country.

Results Summary

A full account of findings is reported in chapter 7 in OECD/EC 2009. The study design and methodology replicated previous studies that have been implemented using PISA 2003 and PISA 2006 samples for various country clusters of SEN students (e.g. OECD countries, EU countries, all PISA participant countries) (OECD 2007; LeRoy et al, 2008). This study described the demographic characteristics of the Baltic and South-Eastern European SEN students, their beliefs and behaviours toward learning, their access and competence in ICT, and their PISA performance. While the primary focus of PISA 2006 was on science competencies, mathematics and reading abilities were also examined. The performance of students with special educational needs was examined in all three academic areas, as well as in relation to typical students, socioeconomic status, and SEN samples from PISA, the OECD, and the European Union.

Overall, the percentage of PISA students within this sample who were identified as having some type of special educational need was extremely low, representing 0.65% of the PISA population in the targeted countries. Three of the nine countries (Bulgaria, Montenegro, and Romania) did not include SEN students in their samples. Only Lithuania's participation rate was on a par with the higher rates from other PISA countries.

While SEN student rates range from 3-14% across the various participating countries (OECD, 2005), test taking accommodations and the fact that many disabilities do not impair intellectual functioning would suggest that many more SEN students can be fully included in PISA assessments. However, examination of the results from the 2000, 2003, and the 2006 sampling and assessment programmes raises a series of questions about the access, participation, and performance of students with SEN in the PISA programme.

An interesting finding in the PISA study on 2006 data was that, as compared to their peers in other parts of the world, the SEN students from the Baltic region and the South-eastern European region all attended public schools and had larger class

sizes. While vocational training opportunities were limited across the world, students in these regions had practically no such opportunities.

In terms of academic performance, students in these regions performed lower than their peers, with the exception of students with limited test language proficiency, who scored higher than their peers across the world. They also reported the highest use of computers and information technology. Students in the two regions also believed that academic performance was less important than their peers in other parts of the world. Finally, with regard to information technology and computers, students in the Baltic region and in the South-eastern

European region have not been using computers as long as in other regions. They use them less in school. However, they use them in the same way as other students across the world and they express more confidence in their ability to use them for high level skills.

In 2003 only two countries from the Baltic and South-eastern European regions participated in PISA (Latvia and Serbia-Montenegro). In 2006 nine countries from the two regions participated in PISA, with six of those nine countries including students with special educational needs in their samples. An additional two countries joined PISA 2009 (Albania and Moldova). Findings from the Baltic and South-eastern European countries continue to strengthen the PISA programme.

In particular, the inclusion of students with special educational needs from these regions positively contributes to this international knowledge. Data related to their demographic characteristics, school experiences, attitudes, and performance independently and within the context of other PISA regions and country reports provide an important context for other studies on special education issues.

Overall, these two exploratory studies provided a model upon which future research can build, as well as a baseline for comparative purposes. While the sample size for students with special educational needs was small, there were several areas in which these students' experiences differed positively from their international counterparts, such as in instructional formats and use of ICT. Future studies should

build on these initial findings to explore further the impact of these contextual differences on performance and school outcomes.

THE PISA 2012 STUDY

The main goal of the analysis of the PISA 2012 data which is currently being undertaken is to improve the capacity of PISA to include, assess, and report accurately the performance of 15-year-old students with special educational needs worldwide.

In order to achieve this goal the following two objectives and related questions are being addressed.

Objective 1: To describe the participation of students with special education needs in the OECD PISA 2012 programme, addressing participation by country and student demography, performance, and the impact of test formats and student perceptions on that performance.

Study questions

1. What is the PISA 2012 participation rate by country of students with special education needs?
2. What are the demographic characteristics of the students with special education needs who participated in PISA 2012?
3. What were the educational experiences and perceptions of the schools of the students with special educational needs who participated in PISA 2012?
4. How do students with special educational needs perform on PISA 2012 (mathematics, reading, science competencies)?
5. ***Are there differences in PISA 2012 performance by test booklet format?***
6. ***Does type of assessment (paper/pencil versus computer-based) impact the performance of students with special educational needs?***

7. What is the relationship between student learning beliefs and performance for students with special educational needs?
8. How do students with special educational needs compare to typical PISA students on sense of belonging?
- 9. *What is the relationship between opportunity to learn mathematics and PISA performance for students with special educational needs?***
10. How do students with special educational needs compare to typical PISA students on economic, social and cultural status (ESCS)?
11. What is the relationship between ESRC backgrounds of students with special educational needs and their PISA mathematics performance?
12. What were the perceptions of students with special educational needs with regard to information and communication technology (ICT) access and competence?

Importantly, questions 5, 6, 8 and 9 (in Italics) are new in the analysis of PISA 2012 data and will add significantly to the findings.

Objective 2: To examine the policy issues related to the implementation of PISA for students with special educational needs.

Policy questions

1. Why does PISA not include SEN students in proportion to their prevalence in member country populations?
2. What policies and procedures need to be in place to meaningfully and intentionally include SEN students in international assessment strategies in order to be able to compare physical access, curricular access, learning, and matriculation outcomes for students with special educational needs across the globe?

3. Could a methodology such as PISA for Development 2015 be created to address the inclusion of SEN students in a standardised international assessment?
4. Would standardized accommodations facilitate the equity for SEN students?
5. What is the potential for computer-based assessment methods to facilitate equity for SEN students?

Methodology

Participants

The participants for this study are students with SEN who participated in PISA 2012. These students were identified through the Student Tracking Form under the code of SEN. Within that code, students could be classified as one of four types: functional disability (FD); cognitive, behavioural or emotional disability (CBED); limited assessment language experience (LALE); and optional additional category agreed upon with Westat³. Only the first three codes were used for this study.

Data Source and Limitations

Six sources of data were used to complete this study: the student tracking form; the student questionnaire; the student performance outcomes (paper-based and computer-based), the school questionnaire and the ICT questionnaire. The datasets were merged using a unique linking variable across the sets. The same list of known limitations to the previous descriptive studies applied to this research study.

For the policy questions, comprehensive international literature reviews (including middle and low income countries, English only) will be conducted in late 2015 with regard to SEN students on standardised agreed academic testing and accommodations in order to inform the policy study.

³ Westat is the company which is under contract with OECD/PISA to conduct the international sampling.

Outcome

There will be three outcome documents from this study: (1) A technical report of the findings related to objective one (study research, currently under review); (2) a scoping paper related to objective two (policy, in progress); and (3) an academic paper which combines the technical and policy reports.

Summary of preliminary findings

A full account of findings will be available towards the end of 2015.

PART TWO – DISCUSSION ON ISSUES TO BE ADDRESSED

MOVING FORWARD

As stated earlier in this report, the ultimate goal of the SEN PISA studies is to improve the capacity of PISA to include, assess, and report accurately the performance of 15-year-old students with special educational needs worldwide. An encouraging trend has been the slight increase in participation of SEN students, which may reflect the increased movement toward inclusive education globally. In order to achieve this objective fully, it has become apparent that the following issues need to be addressed:

The definitions of type of disability are very broad and do not easily match the category system used in participating countries. We could make progress if there was a question in the student tracking form that identified the national category that the particular student was in.

The sample sizes are very small and unevenly distributed across the countries. This makes international comparisons difficult, and limits the generalizability of the findings.

It should be noted that in these studies no attempt was made to examine student performance by country, given the small overall size of the sample and the extremely small size of the subsamples within each country. Future research might use the Development Co-operation Directorate (DCD-DAC) classifications to stratify countries (high, middle, low income), in order to increase sample sizes to facilitate trend analyses.

Within the current PISA framework, data is currently collected at school level. Data collected at the classroom level might elicit more detailed information about the performance of students.

It would also be beneficial to understand the experiences of SEN students who were included in the trial computer based assessments, and whether this format was appropriate for students with SEN. Utilising a solely computer-based assessment

format has both assets and risks for students with special educational needs, particularly related to country economies and family income status. The most recent PISA study provided encouraging results related to performance on computer-based assessment items, however the potential risk of excluding SEN students who live in lower income countries or families demands further policy attention and research.

With regard to SEN and accommodations, the PISA 2018 Call for Tender sought to identify feasible ways to widen access for students with disabilities and other special education needs. Such accommodations might include graphic modifications, audio presentation, bilingual dictionary, dictation of answers, word processor, individual or small group settings, adaptive furniture or tools, extended time and rest periods. In addition to the use of large print, the use of special fonts or magnification, and assistance inputting responses (e.g., allow students to orally deliver their responses into a microphone) should also be considered. Without these types of accommodations students who could otherwise participate in a meaningful way must be excluded from the PISA assessment. PISA may benefit from exploring how inclusiveness can be increased through accommodations while ensuring that test administrations remain sufficiently standardised to enable comparisons across students and countries.

With regard to piloting PISA for Development⁴ - there are challenges to including developing countries coverage within the PISA framework even though they are

⁴ PISA for Development aims to increase developing countries' use of PISA assessments for monitoring progress towards nationally-set targets for improvement. It also aims to analyse factors associated with student learning outcomes, particularly for poor and marginalised populations, and promotes institutional capacity-building and for tracking international educational targets in the post-2015 framework. PISA for Development will use enhanced survey instruments that are relevant for the contexts found in developing countries, but which produce scores that are on the same scales as the main PISA assessment. This is not a small ask.

The pilot project will develop an approach and methodology for including out of school children in the surveys. The pilot project will be undertaken over three years through a three-way partnership involving five to seven developing countries, development partners (DAC members plus the World Bank, UNESCO, UNICEF and other UN bodies and regional organisations) and the OECD. The results from the PISA for Development pilot project will contribute to the OECD's support of education-

helping to set the baseline for global education goals. For example, some countries may need to build up the institutional capacity to implement large-scale international assessments first and set aside the necessary funding. Another barrier may be in using computer-administered assessments in countries where widespread electronic devices are still limited. Widening the administration of PISA may also highlight the fact that in developing countries few 15-year-olds SEN students are enrolled in secondary education programmes. This also should link to the wider issue of exclusion from education being not recommended under the CRPD.

Another avenue for international comparisons would be to expand the research programme into new directions by correlating PISA results of SEN students with other standardised assessments, such as:

- The International Association for the Evaluation of Educational Achievement (IEA) TIMMS (Mathematics and Science) (8th grade students) or PIRLS (reading);
- IEA ICCS (8th grade students) Knowledge and understanding of civics and citizenship (students, teachers, school principals) (first round 2009, second in 2016);
- PIAAC (Programme for the International Assessment of Adult Competencies);
- TALIS (teachers of lower secondary education) and teaching SEN students (focuses on learning environments and working conditions of teachers).

Finally, the knowledge gained from the previous studies of PISA and students with special educational needs can be used to address broader educational issues that ultimately impact their academic performance. Hypotheses of promising areas of research in this arena include:

focused post-2015 goals, which will retain a focus on access and equity at primary and secondary education levels, and will also incorporate a focus on learning.

1. How access to the general education curriculum relates to performance on standardised tests.
2. How teacher preparation can improve the performance of students with special educational needs in standardised tests.
3. How strategies intended to level the educational playing field for students with special educational needs from low income families can impact academic performance.
4. How strategies to improve students' sense of school belonging can impact academic performance for students with special educational needs.

The way forward includes addressing PISA technical issues, as well as addressing equity issues, in order to create a more cohesive framework for global monitoring work. This should be in the light of the requirements under the CRPD (article 24) to facilitate the full and equal participation in education of students with SEN (thus including assessments) and to collect appropriate information, including statistical and research data (article 31) and the dissemination of these statistics and to ensure their accessibility to persons with disabilities and others.

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