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PISA Strategic Development Group

IMPROVING ACCESS TO PISA FOR STUDENTS WITH DISABILITIES AND OTHER SPECIAL EDUCATION NEEDS

Meeting of the PISA Strategic Development Group

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Background

1. Since April 2009, the PISA Governing Board (PGB) has expressed interest in potentially expanding access to PISA for students with disabilities and other special education needs. The following populations were specifically targeted: (1) intellectually disabled; (2) functionally (physically) disabled; (3) students with insufficient assessment language experience. According to the PGB, most of the students in these groups have thus far either been excluded from PISA surveys, or assessed under less than optimal conditions.

2. At its meeting in June 2010, the Strategic Development Group (SDG) reviewed the current PISA policy and outlined three issues for discussion (doc. ref [EDU/PISA/GB/SDG\(2010\)5](#)), with a view to developing recommendations for the PGB regarding how best to proceed in this area.

- How should a change in PISA's accommodation policy be structured?
- What kind of accommodations should be allowed?
- What should be done with results for accommodated students?

3. The current document attempts to provide both insights and data for further deliberations regarding the implementation of test accommodations on PISA tests.

Definition of purpose

4. The provision of test accommodations for students with disabilities has become common practice in many (particularly western) countries. The incentive for this practice is twofold: to expand the participation of students with disabilities in various assessments and to ensure the validity (accuracy) of these assessments. While the first incentive is of a socio-educational nature and applies to all types of assessments, the second focuses on the psychometric (validity related) aspects of assessment, which is more crucial in high-stakes testing. While both incentives are desirable, they may call for different, and occasionally conflicting, strategies and solutions. Therefore, in order to select the optimal strategy for expanding access to PISA for students with disabilities, the SDG will need to prioritize the relevant concerns.

Classification of the target populations

5. In its June 2010 paper ([EDU/PISA/GB/SDG\(2010\)5](#)), the PISA Strategic Development Group acknowledged three populations of students with disabilities or special education needs who might need test accommodations. To facilitate the discussion regarding the expansion of accessibility to PISA, a more fine-grained classification of the target population is required. The following is a proposal for such classification:

- 1) Functional (physical) disabilities – this category includes a wide variety of conditions such as sensory (vision and hearing) impairments, motor disabilities, and health-related needs (chronic conditions/illnesses);
- 2) Cognitive disabilities – specific learning disabilities (e.g., dyslexia, dysgraphia, dyscalculia) and other cognitive disabilities (e.g., ADHD, deficiencies in visual perception, memory or executive functions) in otherwise “normal” students;
- 3) Insufficient language proficiency – limited proficiency in the assessment language, for example non-native speakers and students who have received only a few years of instruction in the assessment language;
- 4) Mental (emotional) disabilities;
- 5) Intellectual disabilities – significant cognitive delay;
- 6) Others – mixed disabilities (co-morbidity) or unique conditions.

6. In all six groups, the severity of the impairment or disability can range from mild to severe. In most countries, students in groups 1-3 with mild-to-moderate conditions are integrated in the regular system, while those with moderate-to-severe conditions are more likely to be assigned to special education frameworks. Students in groups 4-6, however, are almost always placed in special education frameworks.

7. The placement of students in special education often suggests that they are unable to cope with daily academic requirements, even with assistance. This in turn suggests that they might be unable to manage PISA tasks at all. Moreover, students in groups 4-6 who are not integrated in regular education often have multiple-conditions, making it practically impossible to identify the optimal accommodations required for each student. Therefore, it is recommended that special education students be excluded altogether from PISA. It should be noted that special education students typically comprise 2%-3% of the age/grade cohort.

Issues for consideration

8. National diversity – One of the main challenges in accommodating students with disabilities on PISA is that there is enormous diversity among the participating countries in the awareness and diagnosis of physical, health-related, intellectual, cognitive and emotional disabilities. Also, many countries are inexperienced in adapting tests to accommodate the various disabilities. This diversity is particularly notable with regard to cognitive/learning disabilities. A lack of sound diagnostic procedures for cognitive and learning disabilities may result in under- or misdiagnosis of students with learning disabilities and provision of inappropriate test accommodations and hence further bias the assessment against less-developed countries.

9. Prevalence of students with disabilities and special education needs – PISA mandates that overall exclusions not exceed 5% of the PISA school-age population and that exclusions based specifically on

disability or special education not exceed 2.5%. Special education students make up roughly of 2%-3% of the age/grade cohort. Physical, health-related and emotional disabilities as well as intellectual delay are fairly rare (about 2%-3%) and students with severe conditions are typically placed in special education frameworks. The percentage of students with cognitive and learning disabilities varies extensively among countries and comprises approximately 10% of the cohort (in the UK, USA and Israel). The percentage of students with insufficient language proficiency also varies extensively among countries and may reach 5%-10% of the cohort, particularly in western countries. Special education students excluded, as many as 10%-15% of 15-year-old students in developed countries may need test accommodations, while only a small percentage will be eligible for accommodations in under-developed countries. These estimates call for careful deliberation regarding the criteria for eligibility that should be employed and the type of accommodations that should be provided.

10. Assertion of eligibility for accommodations – Most testing/assessment agencies employ highly rigorous procedures to confirm the presence of a disability and eligibility for test accommodations. Also, much effort is invested in selecting the most appropriate accommodations for a given disability in a given assessment. This procedure, typically carried out by expert clinicians, is time-consuming and expensive. While physical, health-related and even mental disabilities are usually well documented and easy to verify, the confirmation of learning disabilities is often rendered laborious and problematic by the lack of standardization in diagnostic tools and procedures. Though a rigorous confirmation procedure is crucial in high-stake tests, it is used less frequently, if at all, in school-based assessments. Given the low-stakes nature of PISA for both individuals and schools, it is highly unlikely that schools would implement a rigorous method of determining eligibility for accommodations, and for matching these accommodations to the relevant disability. Hence, schools might well request unnecessary or inappropriate accommodations for students with disabilities. This limitation should be taken into consideration with respect to allowing accommodations on PISA and setting criteria for their provision.

11. Criteria for the selection of accommodations – The high ratio of students who may need accommodations and the difficulty in carefully monitoring their eligibility necessitate careful deliberation regarding the accommodations to be provided on PISA. To assist in the decision-making process, the most common accommodations have been classified according to seven criteria (1) accommodation category (type); (2) number of countries who use it (out of 31 countries who participated in an earlier survey conducted by PISA); (3) a rough estimate of its prevalence (frequency of use); (4) its practicability and cost; (5) the locus of its operation (central / local); (6) its potential threat to validity – the degree to which the accommodation affects the construct being measured or compromises validity; and (7) the disabilities to which it applies. The full classification is presented in Table 1.

12. Optimally, the accommodations provided in PISA should address as many disabilities as possible, have high prevalence, constitute little or no threat to validity, be practical, inexpensive and standardized (centrally developed).

Summary and recommendations

13. The recommendations listed below refer exclusively to the first stage of the implementation of a new inclusion policy.

14. Recommendations regarding the three key issues raised by the PGB

1. "How should a change in PISA's accommodation policy be structured?"

Three strategies were considered by the committee: (1) allowable but not mandatory implementation; (2) mandatory uniform implementation; and (3) mandatory yet flexible implementation.

Given the vast diversity in awareness and diagnosis of the various disabilities, it seems highly impractical to enforce mandatory uniform implementation of accommodations – at least in the initial phase of implementation. Therefore, the "allowable but not mandatory" option is recommended. Moreover, given the fact that most accommodations work in favour of the students, it can be assumed that most countries will choose to employ the proposed accommodations.

2. "What kind of accommodations should be allowed?"

The accommodations selected should maximize on the following criteria: address as many disabilities as possible, be highly prevalent, pose little or no threat to validity, be practical, inexpensive, and centrally developed.

An analysis of the common accommodations (presented in Table 1) suggests the use of 9 out of the 16 accommodations listed in the table -

- Graphic modification of test booklet;
- Audio presentation (human reader or audiocassette);
- Bilingual dictionary
- Dictation of answers to a writer/recorder
- Word processor
- Individual or small group setting
- Adaptive furniture or tools
- Extended time
- Rest periods

3. "What should be done with results for accommodated students?"

15. Two strategies were considered by the committee: (1) full inclusion of results for accommodated students in analyses; (2) separate analysis of results for accommodated students.

16. If the "allowable but not mandatory implementation" strategy is adopted, it might be impossible to ensure comparability unless the results for the accommodated students are analyzed separately. However, if the percentage of students eligible for accommodations is reasonably low (about 5%) and kept constant across countries, and use of accommodations with moderate-high threat to validity is kept minimal, it might be possible to adopt the first strategy – full inclusion of the results for accommodated

students. The alternative option is to analyze the PISA results in both ways and thereby study the implications of full inclusion.

17. Other recommendations

- 1) Special education students (about 2.5% of the cohort) should be excluded from PISA given their pronounced difficulties in coping with common academic tasks and the severity and complexity of their conditions. Students with special needs who are integrated in the regular education system should be accommodated when possible.
- 2) Given the high percentage of prospective students who may apply for accommodations and the varying rigor in the diagnosis of disabilities, it is essential that a quota for the percentage of students eligible for accommodations be established. Also, the implementation of the inclusion policy should be accompanied by highly detailed guidelines for determining student eligibility for each accommodation.
- 3) Implementation – The new inclusion policy should be implemented gradually in order to facilitate efficient monitoring of the implementation and to allow all countries to study and disseminate the policy. Gradual implementation may involve offering a limited number of accommodations in the forthcoming assessment.

Alternative suggestions

18. Adapted test-booklet – The use of adapted test-booklets (like the UH booklet) may offer a reasonable solution to the complex administrative burden of offering multiple accommodations. Such a booklet would consist of three sections, each containing fewer items than the sections in the standard booklet. The time allotted for its completion will be shortened accordingly. The booklet will include selected items from the assessment which require relatively less reading (short texts) and limited writing (mostly multiple-choice). The items will be printed in large font (14-16pt) and the page layout spacious. Mandatory breaks of 5-10 minutes will be taken between sections of the test. Students eligible for the adapted test-booklet will be tested in small groups.

19. Computer Based Test (CBT) – Another alternative is the use of a single CBT test version. A fairly large number of accommodations can be incorporated in computerized tests (e.g. graphic modifications, online bilingual dictionary, audio presentation and response recording, word processor, alternative timing and self-monitored rest periods). This suggestion conforms with PISA's intent to make the transition from paper and pencil administration to computer-based testing.

20. Both alternatives capitalize on the fact that PISA assessments are IRT scored, yet they require the alternative test mode to be administered to relatively similar numbers (or percentages) of students in each country.

Table 1: Classification of accommodations by relevant parameters

Accommodation ¹	No. of countries offering (of 31) ¹	Prevalence	Cost	Locus of operation	Threat to validity		Relevant disabilities
					Reading	Math/science	
Presentation							
1. Graphic modification of test booklet	~17	H	L	central	1	1	visual impair. / ADHD
2. Bilingual dictionary		H	L	local	2	1	LLP
3. Audio presentation (a reader or audiocassette)	~22	H	H	local/central	1	1	visual impair. / dyslexia
4. Braille	24	L	H	central	1	1	visual impair.
5. Use of sign language to deliver assessment	~16	L	H	local	2	1	hearing impair.
6. Paraphrasing test instructions		L	H	local	1	1	SLI / LLP
7. Paraphrasing test items		L	H	local	2	2	SLI
Response							
8. Dictation of answers to a writer/recorder	22	H	H	local	1	1	visual impair. / dysgraphia
9. Word processor	19	H	H	local	1	1	dysgraphia
10. Nonstandard page of standard formulas		L	L	central	1	2	dyscalculia
11. Use of sign language to respond to assessment	~16	L	H	local	2	1	hearing impair.
12. Transcription		L	H	local	1	1	dysgraphia
Setting							
13. Individual or small group setting	22	H	H	local	1	1	visual impair. / hearing impair. / physical disabilities / ADHD
14. Adaptive furniture or tools		L	H		1	1	physical disabilities
Timing							
15. Extended time	23	H	L	local	2	2	visually impaired / hearing impaired / physical disabilities / dyslexia / dysgraphia / dyscalculia / ADHD / SLI / LLP / emotional disabilities
16. Rest periods	19	H	L	local	1	1	physical disabilities / ADHD

¹ Accommodations marked in bold and number of countries offering them nationally are taken from EDU/PISA/GB/SDG(2010)5.

Legend to table 1:

Prevalence (rough estimate of frequency of usage)

L – Low prevalence

H - High prevalence

Cost

L - Relatively simple to apply and at a reasonable cost

H - Requires complicated application and is rather costly

Locus of operation

C – central

L – local (school level)

Threat to validity (1) Does not affect the construct being measured or compromise validity; (2) May alter the construct being measured in the test; (3) Alters the construct being measured in the test.

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