Summary and points for discussion

Global Alliance to Monitor Learning (GAML5): Key items for endorsement

TCG Fifth Meeting
15-16 November 2018
Mexico City, Mexico
TCG5/4/1

Introduction

The document presents the key points regarding four indicators proposed by the Global Alliance to Monitor Learning (GAML) for the TCG endorsement.

Please provide your feedback via a paper questionnaire on p.9-12 (please complete and return to the Secretariat) on through an on-line survey at: (link to be provided)

Indicator 4.1.1

Minimum Proficiency Levels

Minimum Proficiency Levels for Reading

Educational Level	Descriptor	Assessment PLDs that align with the descriptor	MPL in the assessment, if available
Grade 2	They read and comprehend most of written words, particularly familiar ones, and extract explicit information from sentences.	• PASEC (Gr. 2) – Level 3	• Level 3
Grade 3	Students read aloud written words accurately and fluently. They understand the overall meaning of sentences and short texts. Students identify the texts' topic.	• PISA-D – Level 1c	• Level 2
		• Uwezo – Std. 2 (Story with meaning)	• Std. 2 (Story with meaning
		• PASEC 2014 (Gr. 2) – Level 4	• Level 3
		• TERCE (Gr. 3) – Level 1	• Level 2
		• UNICEF MICS 6 – Foundational Reading Skills	• Foundational Reading Skills
		• EGRA – Level 9	• Not specified
		• ASER – Std. 2 (story)	• Std. 2 (story)
Grades 4 & 6	Students interpret and give some explanations about the main and secondary ideas in different types of texts. They establish connections between main ideas on a text and their personal experiences as well as general knowledge.	• SACMEQ 2007 – Level 3	• Level 3
		• PASEC 2014 (Gr. 6) – Level 2	• Level 2
		• PIRLS 2011 – Low	• Low
		• SERCE 2006 (Gr. 6) – Level 2	• Level 1 (appears that way from Technical reports)
Grades 8 & 9	Students establish connections between main ideas on different text types and the author´s intentions. They reflect and draw conclusions based on the text.	• PISA 2015 – Level 2	• Level 2
		• PILNA 2015 – Level 6	• Level 4 (grade 4) and Level 5 (grade 5)
		• TERCE 2014 (Gr. 3) – Level 3	• Level 2
		• PIRLS 11/16 - Intermediate	• Low
		• SACMEQ 2007 –Level 6	• Level 3
		• TERCE 2014 (Gr. 6) – Level 1	• Level 2

Minimum Proficiency Levels for Mathematics

Educational Level	Descriptor	Assessment PLD's that align with the descriptor	MPL's in the Assessments
Grades 2-3	Students demonstrate skills in number sense and computation, shape recognition and spatial orientation.	PASEC 2014 – Level 1 PASEC 2014 – Level 2 TERCE 2014 – Level 2	Level 2 Level 2
Grades 4-6	Students demonstrate skills in number sense and computation, basic measurement, reading, interpreting, and constructing graphs, spatial orientation, and number patterns.	PASEC 2014 – Level 1 SACMEQ 2007 – Level 3 SACMEQ 2007 – Level 4 PILNA 2015 – Level 6 TERCE 2014 – Level 1 TIMSS 2015 – Intermediate International	Level 2 Level 3 Level 5 Level 2 Intermediate International
Grades 8 & 9	Students demonstrate skills in computation, application problems, matching tables and graphs, and making use of algebraic representations.	PISA 2015 – Level 2 TIMSS 2015 – Low International	Level 2 Intermediate International

Content Alignment Tool

1. Depending on the level not all subdomains should be included (for instance grades 2 and 3 in reading are expected to cover two domains);

2. Two levels will be defined sufficient and not sufficient;

3. Assessment frameworks do not necessarily cover all domains and subdomains but still will be sufficient combinations of coverage of specific domains and subdomains that would keep the comparability;

4. Reference (http://gaml.uis.unesco.org/wp-content/uploads/sites/2/2018/10/4.1.1_03_Content-Alignment-Tool.pdf)

Procedural Alignment Tool

Scoring Criteria

Procedural Questionnaire Category	N of question	Grouping Name	Max. Score	Sufficient Score
1. Assessment Team Capacity	2	Capacity and Technical Standards	4	3 or more
2. Technical Standards	2			
3. Assessment Framework	1	Instrument Development	4	3 or more
4. Development of Items	2			
5. Designing Cognitive Instruments	1			
6. Linguist Controls	1 or 3	Linguistic Control [a, b]	1 or 3	No criterion for unsatisfactory; just report the score
7. Sampling	4 or 6	Sampling [a]	4 or 6	4 or more
8. Standardized Operations	3	Data Control, Analysis, and Reporting	13	7 or more
9. Managing Data	2			
10. Equating Scores	2			
11. Analyses of Assessment Data	4			
12. Reporting and Using results	2			
Maximum points	**26 or 30**	**Maximum points excluding Linguistic control**	**25 or 27**	

[a] Not all countries will answer every question in the Linguistic Control and Sampling groupings. For example, if a country's NLA is a census assessment instead of a sampling assessment, it will have fewer questions to answer.

[b] Not every country will have a translated version of its NLA. Thus, the questionnaire asks questions about translations but the scoring of this category is not used for determining sufficiency.

Linking Portfolio
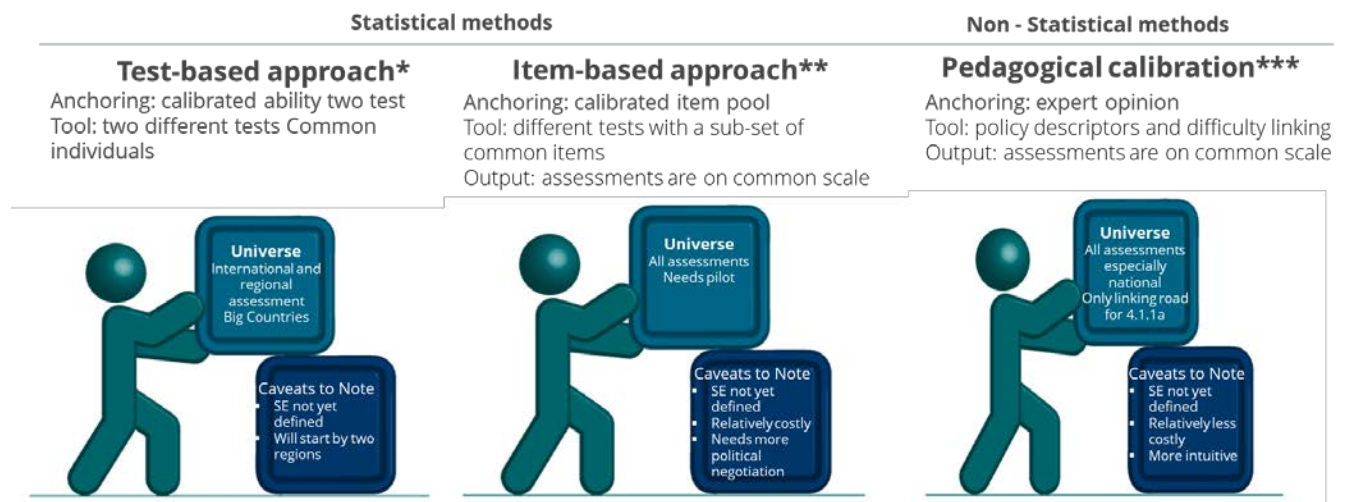
Notes:
The UIS PS is the reference scale for reporting indicator 4.1.1, after all assessments are put on common scale.
* Test-based approach: Common individuals meaning representative individuals of similar characteristics are presented with two different tests.
** Item-based approach: Common items different tests taken by different individuals. Tests will be put on common scale once embed the calibrated items from the item pool.
*** Pedagogical calibration approach: Use content/context experts with relevant experience in country to generate consensus on the alignment of national assessment to a Proficient Scale taking into account constructs and difficulties of the items. No extra field work

Strategy 1. The non-statistical approach: pedagogically informed recalibration of existing data

The approach involves using the proposed proficiency framework that describes the range of competencies that children/youth have at each level to locate proficiency levels from alternative assessment programmes based on the Performance Level Descriptors (PLDs).

The approach is known as pedagogical calibration (also social moderation or policy linking) and is based on linking as guided by experts' judgement. Linking is based on the verbal definition of the learning level / abilities children should develop at a certain point in time. It also involves the unpacking of several tasks that the definitions imply, hence the ability to link assessments which have different questions, in different languages, administered in a different way. The process will include experts designated by the countries to decide if the alignment works or not.

This proposal would allow the expansion of coverage in terms of educational systems reporting for SDG 4.

Strategy 2. Test-based linking

✓   The IEA outlines the "Rosetta Stone" solution that deals only with the primary level and allows two assessments, one international, the other regional to be expressed on the same scale. Concretely, the proposal states that sub-samples of students in three to five countries per programme would write not just the regional tests, but also IEA's test in a certain window of time.

✓   This will allow to make the psychometric calibration of students' abilities of all countries participating in both assessments. The students who write both tests are the link or connection.

✓ The results produce a "concordance table".[1] The table is not the reporting scale but it facilitates the process of linking to the scale by expressing a larger number of countries on the same scale.

Indicator 4.4.2

Definition
Digital literacy is the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital devices and networked technologies for employment, decent jobs and entrepreneurship. It includes competences that are variously referred to as computer literacy, ICT literacy, information literacy, and media literacy.

Approach
The proposed global framework takes as its starting point the European Commission's Digital Competence Framework for Citizens (DigComp 2.1), as it has been developed on the basis of extensive research and consultation in the European Union countries.

It builds on the DigComp 2.1 framework using two mapping exercises:
- cross-national, national and sub-national digital literacy (curriculum or assessment) frameworks; and
- use examples of digital literacy in major areas of social economic activity.

The frameworks and use examples have been collected from countries in six world regions: East Asia/South Asia; sub-Saharan Africa; Middle East and North Africa; Central Asia / former Soviet Union; Latin America; and high-income countries outside Europe.

Mapping of national digital literacy frameworks
We conducted English-language searches for digital literacy frameworks and found information on frameworks adopted in 43 countries. We selected:
- seven national frameworks that were most clearly written with regard to competency areas; and
- three popular enterprise frameworks found in numerous countries

We then developed a low-inference coding scheme to map competences from each framework to DigComp 2.1.

The collected digital literacy frameworks have shown two types of competences that are qualitatively different from any competences defined in DigComp 2.1 and that warrant the creation of new competence areas.
- *Fundamentals of hardware and software*, which refers to basic operations of digital devices; and
- *Career-related competences*, which refers to specific careers or career opportunities.

Mapping use examples of digital literacy in major areas of social economic activity
The examples of use of digital literacy found in the DigComp 2.1 framework are grounded in the European context, which motivated us to gather additional examples of everyday digital literacy use in different cultural, economic and technological settings. We have focused our search for use

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[1] For countries the option is to either participate in a regional programme or in a global programme (something that might be difficult or not possible if the region does not have a regional initiative).

examples in low and middle-income countries, and in major economic or employment areas: agriculture; energy; finance; and transportation. We used English-language searches in a snowball process on Google and YouTube to find news articles, videos, non-governmental organizational reports, software applications and company websites with rich information on everyday digital technology use in the economic areas. Of 42 initial use examples, we selected 17 highly detailed examples to map to DigComp 2.1. We developed 13 general functions of smartphone and basic mobile phone use grounded in the use examples from the four economic areas, and mapped those functions to DigComp 2.1 and the proposed competence areas.
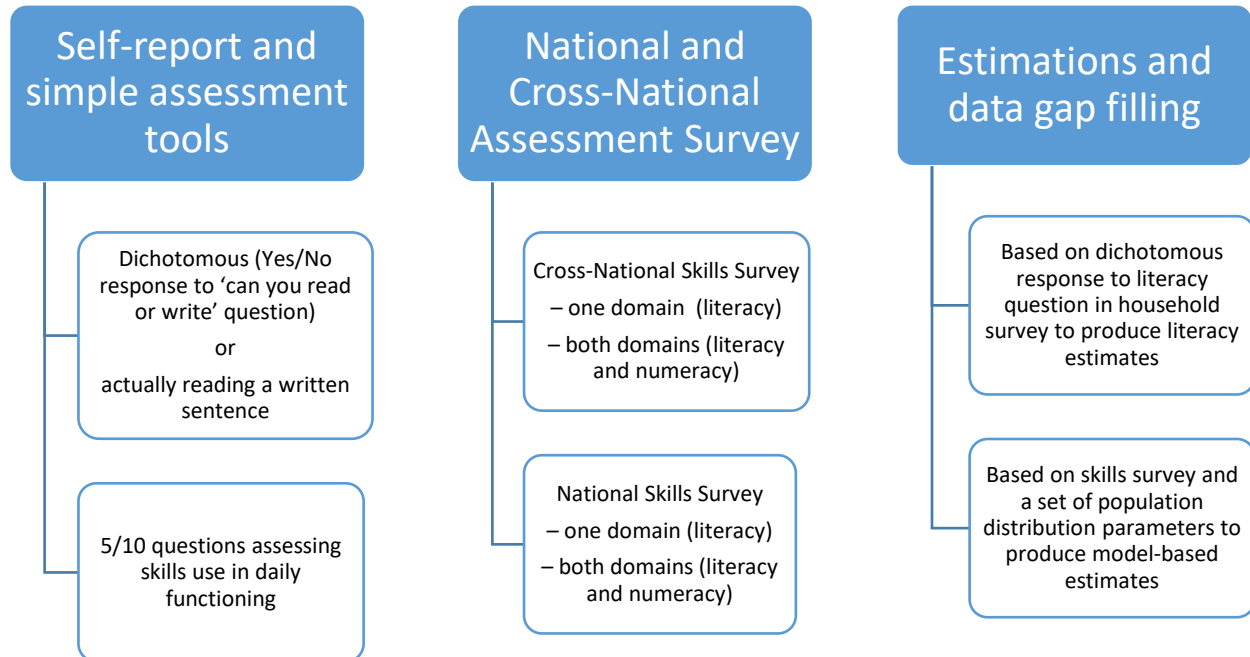
An important finding of the mapping exercise is that irrespective of the nature of the devices used, the functions required of users covered only 11 of the 22 competences listed. The absence of these 11 competences in this mapping exercise suggests that they are not immediately necessary or useful to everyday operations in a wide range of developmental contexts. Basic technical and interactive competences seem more immediately necessary. Another important finding is the competences associated with the examples of use are strongly differentiated based on the nature of the device used.

The competence areas and competences for the proposed Digital Literacy Global Framework

Competence area (CA)	Competences
CA0. Devices and software operations	0.1 Physical operations of digital devices 0.2 Software operations in digital devices
CA1. Information and data literacy	1.1 Browsing, searching and filtering data, information and digital content 1.2 Evaluating data, information and digital content 1.3 Managing data, information and digital content
CA2. Communication and collaboration	2.1 Interacting through digital technologies 2.2 Sharing through digital technologies 2.3 Engaging in citizenship through digital technologies 2.4 Collaborating through digital technologies 2.5 Netiquette 2.6 Managing digital identity
CA3. Digital content creation	3.1 Developing digital content 3.2 Integrating and re-elaborating digital content 3.3 Copyright and licences 3.4 Programming
CA4. Safety	4.1 Protecting devices 4.2 Protecting personal data and privacy 4.3 Protecting health and well-being 4.4 Protecting the environment
CA5. Problem solving	5.1 Solving technical problems 5.2 Identifying needs and technological responses 5.3 Creatively using digital technologies 5.4 Identifying digital competence gaps 5.5 Computational thinking
CA6. Career-related competences	6.1 Operating specialized digital technologies for a particular field 6.2 Interpreting data, information and digital content for a particular field

Indicator 4.6.1

A summary of options for reporting

Self-report and simple assessment tools	National and Cross-National Assessment Survey	Estimations and data gap filling
Dichotomous (Yes/No response to 'can you read or write' question) or actually reading a written sentence	Cross-National Skills Survey – one domain (literacy) – both domains (literacy and numeracy)	Based on dichotomous response to literacy question in household survey to produce literacy estimates
5/10 questions assessing skills use in daily functioning	National Skills Survey – one domain (literacy) – both domains (literacy and numeracy)	Based on skills survey and a set of population distribution parameters to produce model-based estimates

Indicator 4.7.5

TIMSS Science for measurement of indicator 4.7.5

The current cycle of TIMSS is focusing on converting to a digital format allowing including additional practical tasks and experiments, such as a plant growth experiment, which can be used to more thoroughly assess students' knowledge in the curriculum areas covered by the TIMSS frameworks. The TIMSS science framework in grade 8th covers the content dimensions Biology, Chemistry, Physics, and Earth science covering a globally relevant perspective as the assessment framework is based on the national curricula of the participating countries. The science part of the TIMSS Grade 8 main assessments typically consists of about 225 items, with only a fraction administered to each of the students to avoid overburdening. Currently, 338 new (paper) science items are field trialed to test their suitability to replace the released item blocks in the 2019 main data collection.

Please provide your feedback by completing the questions that follow. Thank you.

Your name (please print): _____

Your organization/country: _____

Indicator 4.1.1

Minimum Proficiency Levels

1. **Do you agree with the minimum proficiency levels proposed by UIS for reading**
   a. Grade 2/3?
   ☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

   b. End of primary?
   ☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

   c. End of lower secondary?
   ☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

We would appreciate any comments that you may wish to make:

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2. **Do you agree with the minimum proficiency levels proposed by UIS for math**
   a. Grade 2/3?
   ☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

   b. End of primary?
   ☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

   c. End of lower secondary?
   ☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

We would appreciate any comments that you may wish to make:

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Content Alignment Tool

1. **Do you agree with the process of content alignment, using the Global Content Frameworks for Reference for mathematics and reading?**
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

2. **Do you agree with the scoring criteria used for:**

a. Mathematics?
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

b. Reading?
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

We would appreciate any comments that you may wish to make:

Procedural Alignment Tool

3. **Do you agree with the process of the procedural alignment, using the good practices for learning assessment (GP-LA) as reference?**
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

We would appreciate any comments that you may wish to make:

Linking Portfolio

4. **Do you agree with pedagogical calibration as a linking methodology for:**
a. Grade 2/3?
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

b. End of primary?
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

c. End of lower secondary?
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

5. **Do you agree with test-based linking as a linking methodology for:**
a. Grade 2/3?
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

b. End of primary?
☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

c.   <u>End of lower secondary?</u>

☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

We would appreciate any comments that you may wish to make:

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Indicator 4.4.2

Global Framework for Reference on Digital Literacy Skills

6.   Do you agree with the Global Framework for Reference on Digital Literacy Skills?

☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

We would appreciate any comments that you may wish to make:

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Indicator 4.6.1

Options for reporting

7.   Do you agree to adopt PIAAC as a Global Competency Framework?

☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

8.   Do you agree with the proposal of mini-LAMP?

☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

9.   Do you agree to have a simple self-assessment tool?

☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

We would appreciate any comments that you may wish to make:

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Indicator 4.7.5

TIMSS Science for measurement of indicator 4.7.5

10. **Do you agree with refining the indicator and rephrasing it to include 8th grade students instead of 15-year olds, in order to be able to use TIMSS in assessing knowledge of environmental science and geoscience?**

☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

11. **Do you agree to adopt the TIMSS Science Framework as a Global Competency Framework for indicator 4.7.5?**

☐ Strongly agree   ☐ Agree   ☐ Disagree   ☐ Strongly disagree

We would appreciate any comments that you may wish to make: