

Measuring *global* progress in education: *what to count* *and why*

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IEA

Researching education, improving learning



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PIRLS
2016



Measuring SDG 4: How PIRLS can help

How the Progress in International Reading Literacy Study (PIRLS) helps monitor Sustainable Development Goal 4 targets

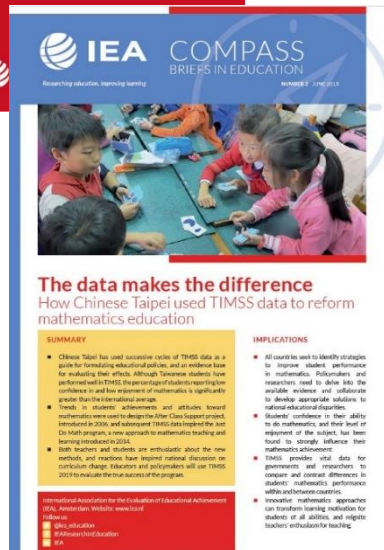
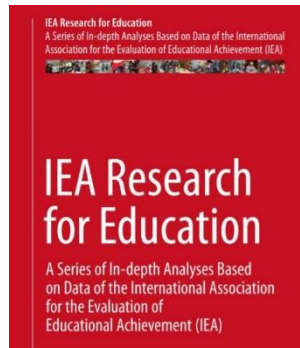
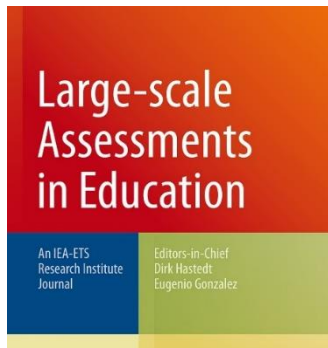
Education
2030

Outline

- Introduction to IEA
- IEA approach (MODEL)
- Recognition of the CONTEXT
- Education 2030 & SDG 4
- QUALITY is like a *BEAUTY*
- Problems with the MEASURING (focus & executions)
- CONSEQUENCES and data LIMITATIONS
- *Do you prefer HUNTING or FISHING?*

Introduction to IEA

"If custom and law define what is educationally allowable within a nation, the educational systems beyond one's national boundaries suggest what is educationally possible." Arthur W. Foshay, Educational Achievements of Thirteen-Year-Olds in Twelve Countries



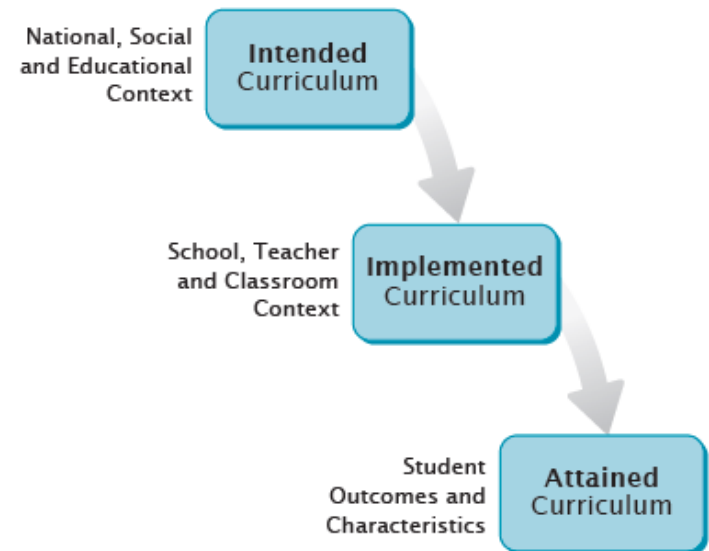
IEA's approach (MODEL)

IEA studies are curriculum rooted, classroom based, and *consider the input, processes and outcomes* of education.

Studies draw on the notion of “**opportunity to learn**” in order to understand the linkages between:

- The intended curriculum (*what policy requires*);
- The implemented curriculum (*what, how, and under what circumstances, is taught in schools*); and
- The achieved curriculum (*what students learn*).

Exhibit 1: TIMSS Curriculum Model



Recognition of the **CONTEXT** of education

- **Community and national policies**

Intended curriculum; Language(s) of instruction; Student flow; Teacher education; Principal certification

- **Home contexts**

Home resources for learning; Language(s) spoken in the home; Early literacy and numeracy activities; Preprimary education

- **School contexts**

School characteristics and demographics; Instruction affected by mathematics and science resource shortages; School emphasis on academic success; Parents' perception of their child's school; Safe and orderly schools; Student bullying; Sense of school belonging

- **Classroom contexts**

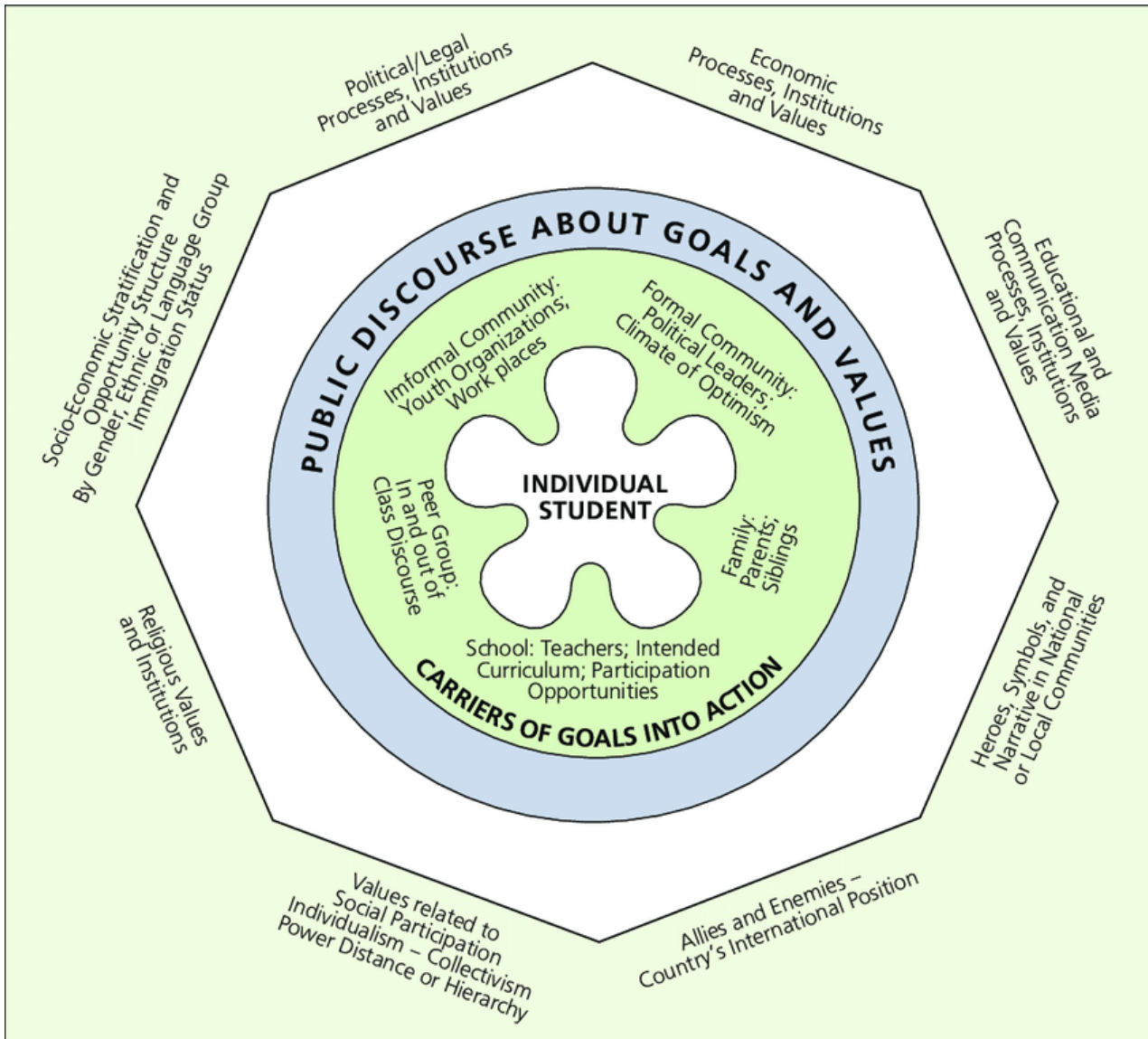
Teacher preparation and experience; TIMSS mathematics and science topics taught; Instructional time; Instructional practices and strategies; Instructional clarity; Supportive classroom climate; Use of technology in instruction; Challenges faced by teachers

- **Student attitudes toward learning**

Student confidence in using technology

Example taken from *TIMSS 2019 Context Questionnaire Framework* by Martin Hooper, Ina V.S. Mullis, Michael O. Martin, and Bethany Fishbein












Context of education II (for those preferring pictures)



Model of the IEA Civic Education Study (CIVED)

Education 2030 & SDG 4

Table 2. SDG 4 global indicators and custodian agencies

Indicator	Custodian agency
 4.1.1 Proportion of children and young people (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex	UNESCO-UIS
 4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex	UNICEF
 4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex	UNESCO-UIS
 4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	UNESCO-UIS
 4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill	UNESCO-UIS, ITU
 4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated	UNESCO-UIS
 4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex	UNESCO-UIS
 4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment	UNESCO-UIS
 4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)	UNESCO-UIS
 4.b.1 Volume of official development assistance flows for scholarships by sector and type of study	OECD
 4.c.1 Proportion of teachers in: (a) pre-primary education; (b) primary education; (c) lower secondary education; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country, by sex	UNESCO-UIS



Source:
UNESCO/UIS
Quick Guide
to Education
Indicators
for SDG 4

QUALITY is like a BEAUTY



Problems with the Measuring I (focus)

- In order to measure you need to DEFINE
- Concrete TARGET
(You can focus only on one thing at one time.)
- Appropriate METHODS
- RESPONDENTS
- INSTRUMENTS (test them first!)
- PROCEDURES for any step including data collection
- Achieve **COMPARABILITY & CONSISTENCY**

Problems with the MEASURING II (execution)

- In order to collect the data and create the indicators, you will need the RESPONDENTS to fill into the INSTRUMENTS
- How long can instruments you can afford in order to get them answered? How many languages?
- How many responses do you actually need to form a conclusion on something?
- Is it enough to rely on the responses from VOLUNTEERS?
- Would you prefer a LOW STAKE or a HIGH STAKE data collection?

CONSEQUENCES

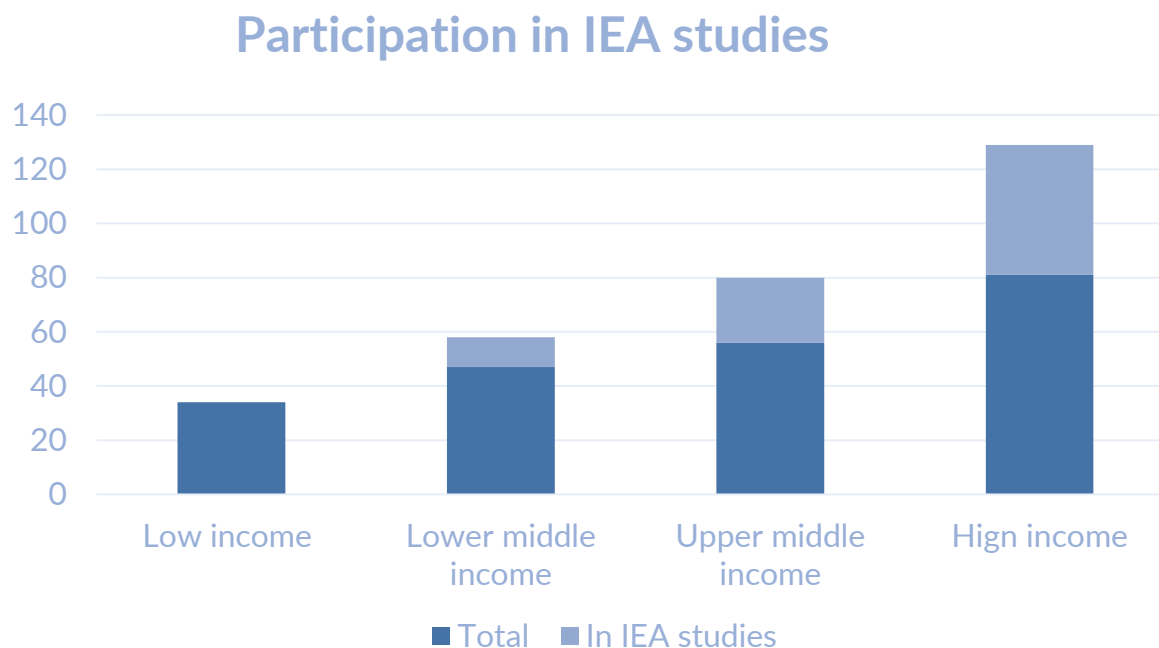
- Competition (instead of research)
- Teaching to the test (narrowing curriculum)
- Cheating (at any means and by any levels)
- Socially desirable answers



- Flows in data understanding (errors in analysis, wrong interpretation of the results – **causality matters**, ill-measures taken on the basis of the results)

Limitations of the data (e.g. COVERAGE)

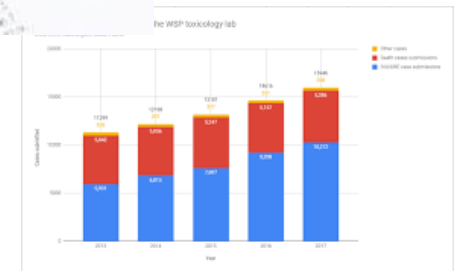
IEA's data are mostly collected in educational systems within high & upper middle income countries



Income categories according to: <http://databank.worldbank.org/data/download/site-content/CLASS.xls>

Do you prefer *HUNTING* or *FISHING*?

What to do with all these data?!



Thank you!

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