Indicators for a Broad and Bold Post-2015 Agenda

A Comprehensive Approach to Educational Development

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EXECUTIVE SUMMARY

This report reviews the conceptual debates and existing data sources that relate to three ambiguous and controversial targets included in the post-2015 education framework: Relevant Learning Outcomes; Knowledge, Skills, Values, and Attitudes (for education for global citizenship and sustainable development); and Teachers and Safe, Inclusive, and Effective Learning Environments.

The main objectives of the report are to:

- Propose a battery of indicators for each target for the purpose of advancing toward a broad and bold global education action framework.
- Reflect on the most appropriate methodological approaches to monitor countries' progress against the post-2015 education targets.
- Inform current debates related to the definition of the post-2015 education action framework and become a useful tool for civil society and governmental actors involved in such debates.

The indicators proposed in this report (see Appendix) are grounded in both theoretical notions and empirical evidence on the main components and conditions of quality education. Until know, access has been at the center of the global education agenda, and it should be high in the list of priorities of the post-2015 scenario. In this report we emphasize the importance of complementing a focus on access with process and outputs indicators to ensure the quality of education systems.

We also assert that, in any global framework for action, equity should be seen as cross-cutting to access, processes, and outputs, as well as inherent to any notion of educational quality. In fact, equity is a key driver of education progress. Existing evidence makes clear that most educational systems will only be able to improve their effectiveness if they reduce educational inequalities and strengthen education processes for the most marginalized.

Debates, Data, and Indicators to Measure Relevant Learning Outcomes

Learning outcomes are, according to some international players, the best proxy to education quality. However, emphasis on measurable learning outcomes should not hide or replace a wider and more holistic definition of education quality, which is also about expanding access to and completion of primary and secondary education, the promotion of (and investment in) conducive learning environments, and improvements related to teachers' quality and labour conditions.

We need to think about ways of measuring and monitoring learning outcomes in a way that does not undermine national educational systems (in terms of involuntary effects such as curriculum standardization, teaching to the test, etc.) or carry excessive costs for the international community and countries' budgets. For these reasons, but also because monitoring progress against this particular target at a global scale requires simplicity, we recommend reducing substantially the number of the learning domains to be measured. Specifically, we believe the new measure should focus on the achievement of a minimum level of proficiency in reading and mathematics at the primary and secondary levels. This does

not mean that other relevant learning outcomes should not be monitored at the national level, or even at the international level (particularly outcomes related to values and attitudes education). Nonetheless, there is broad international consensus that being proficient in these two domains is a necessary condition for proficiency in other knowledge domains and skills. The indicators proposed are complemented with gender, social, and location equity indicators and combine static and progress measures to be achieved by 2030.

Good quality and comparable data sources are essential for the global monitoring of learning outcomes. Existing international/regional assessments could be expanded and technically developed to expand geographical scope and promote comparability. However, our suggestion is the generation of a new assessment with a simpler design that overcomes the limitations of existing assessments, particularly in relation to issues with out-of-school children and the high dropout rates that prevail in many countries.

Debates, Data, and Indicators to Measure Knowledge, Skills, Values, and Attitudes

The debate around the Knowledge, Skills, Values, and Attitudes target has mainly focused on two complex domains: education for global citizenship (EGC) and education for sustainable development (ESD). Considering the wide and controversial nature of these two domains, and the fact that the measurement of the targets has to be as simple as possible and comparable, it is urgent that national governments reach some form of consensus on how to understand EGC and ESD, what should exactly be measured for this target, and how these measures will be interpreted. In particular, national governments should agree on how to understand different forms of democracy, causes and forms of conflict resolution, tolerance and inclusion, the relationship between citizens and the state, and the factors preventing sustainable development.

Following the distinction established by the International Civic and Citizenship Education Study (ICCS) of the International Association for the Evaluation of Educational Achievement, our proposal distinguishes four dimensions of EGC/ESD: knowledge/skills, attitudes, intentional behavior, and actual behaviour. We feel that by grasping these four dimensions it will be possible to assess levels of effectiveness and internalisation of EGC and ESD. If only one or two dimensions are contemplated, EGC and ESD will only be partially captured. Knowledge does not necessarily translate into attitudes and the latter do not translate automatically into desired behaviours. Thus, indicators regarding the internalisation of EGC/ESD must avoid measures such as the presence of these themes in school curricula, which would be easy to measure but offer an incomplete picture of the enactment of EGC/ESD.

The indicators proposed by the Open Working Group and the Technical Advisory Group of the EFA Steering Committee are based on existing data sources with limited geographic scopes that are implemented with different frequencies. Our proposal is based on a simple and regular survey that would facilitate the measure of eight indicators covering the four above-mentioned dimensions of EGC and ESD (see Table 13 or Appendix 1 for example indicators). Final selection of indicators related to such a context-sensitive target should occur at the system level.

Debates, Data, and Indicators to Measure Teachers and Safe, Inclusive, and Effective Learning Environments

Teachers' qualifications are a good proxy of teacher quality, but are not sufficient to capture the complex nature of the effectiveness and satisfaction of teachers. The targets on teachers (and the school environments within which teachers operate) included in the current post-2015 action framework include language on teacher motivation and elements of teachers' support. Despite the good news that primacy is being given to the important role that teachers play in society, it will be a huge challenge to internationally monitor progress against these targets in an effective way.

For many countries, the new teacher targets imply strengthening the quality of pre-service and in-service training, introducing more demanding selection processes for teachers to enter the education system, and promoting teachers' welfare and minimum labour standards. Mentorship for teachers in their first years at school is also considered a good practice internationally to develop good quality teachers. Furthermore, from a professionalizing approach to teaching, teachers should do their work in well-resourced schools that stimulate creativity and provide spaces for participation and teamwork. The promotion of inclusiveness and desegregation at the school level is also an important policy option to guarantee that all teachers work in an effective environment and to prevent teacher burnout and attrition.

We identify the most appropriate indicators to measure progress against four key dimensions of the global targets related to teachers, namely, a) Qualified/professionally trained teachers; b) Motivated teachers; c) Well supported teachers working in an effective learning environment; and d) Safe and inclusive schools (see Appendix).

Existing data sources are not sufficient to monitor progress internationally in relation to the above-mentioned dimensions; this is especially true of the last three dimensions. Part of the information that we need to monitor progress against the teachers-related targets can be retrieved by developing administrative databases at the national and international levels, including the UIS database. However, as with the previous targets, we also recommend producing primary data via a new survey and approaching local education stakeholders, such as teachers and principals, directly.

Toward a Post-2015 Survey

One key conclusion is that new sources of evidence will be necessary to establish an appropriate monitoring framework for the new global educational agenda. The development of the UIS database and other administrative databases at the country level will be extremely helpful for this purpose. Nonetheless, the data that is necessary to monitor progress toward many of the proposed indicators will new instruments and alternative data collection strategies that are comprehensible to key education actors at the local level, including teachers, students, and principals. We believe a survey would be the most appropriate tool to monitor progress toward the new education targets, and the best way to overcome some of the detected problems with current data sources. This new instrument should be an age cohort assessment that is sample-based, combines a school and household approach, and designed to capture dimensions of equity.

Although it is necessary to establish a general assessment framework for comparability purposes, the evaluation design could be adapted to specific national needs so each country would have the capacity and opportunity to include specific assessment topics and collect information relevant to national needs and priorities. The survey tool could be used to collect data every three years (since doing so yearly would be too costly and ineffective to capture significant changes). The resulting, and the data could be used by national governments, international organizations, civil society organizations, and citizens to diagnose the situation of national educational systems and promote/advocate policy solutions accordingly. Both the design of the instrument and the way to publish the results should avoid the creation of countries' rankings and other forms of hierarchies.

Due to the involvement of such a large number of countries in this data collection process, a shared governance of the management of this new instrument is necessary to ensure that the expected objectives and purposes are met. At the same time, due to the political connotations and implications of this type of instrument, its management should not be outsourced to private providers of testing services. The leadership of this new global initiative should rather come from an international organization with a public and legitimate educational mandate, such as UNESCO.

INTRODUCTION

As 2015 was approaching, discussions to value the Education for All framework and the Millennium Development Goals (MDGs) gave room to propose new scenarios for the post-2015 agenda for global development. In the education domain, the international debate has clearly brought with it a broader and more ambitious agenda than that established in Dakar, Jomtien, and, especially, the MDGs. Indeed, national governments and civil society organisations have recognised the need to go beyond the fundamental targets established in 2000 and to translate the concept of educational development into more ambitious objectives. Educational quality, learning, citizenship, and teacher professionalism have burst the scene of education benchmarks and indicators and have opened a fascinating but complex discussion on how to define goals and targets on those issues and, especially, how to measure them.

This document discusses potential indicators for the post-2015 education agenda and, in particular, for Open Working Group (OWG) and EFA Steering Committee targets that are more controversial and difficult to measure. We focus on targets related to three main themes, namely Relevant Learning Outcomes; Knowledge, Skills, Values, and Attitudes; and Teacher Quality in Safe, Inclusive, and Effective Learning Environments. The document aims to become useful material for civil society and intergovernmental discussions and negotiations related to final approval of post-2015 global action framework in education.

The document proposes indicators for a broad and bold global education agenda. While it does not close the door to changes and alternatives in the selected indicators, this proposal combines theoretically grounded rationale with feasible options regarding measuring systems that respond to the principles of accessibility, simplicity, and universal validity. The report uses the following steps:

1. Use a comparative perspective to uncover similarities and differences in the targets proposed by the OWG and EFA Steering Committee in terms of stated objectives, equity insights, and population affected. This initial analysis of the targets themselves is key to the subsequent development of indicators, as well as a valuable resource to identify possible limitations of the proposed targets.

2. Review the theoretical and normative approaches for defining various core concepts included in the targets (e.g., "relevant learning outcomes"). This is a necessary step to establish consistent indicators that are conceptually coherent with the targets they are meant to track. Normative approaches to core concepts are discussed and possible alternative views are presented to frame each target theme.

3. Map existing data sources (international and national) that could inform the level of achievement of the target. We review the data sources available and evaluate their potentialities and/or shortcomings as valid sources of data for the measurement of educational development. Standardised tests, international surveys, and other data sources are reviewed to assess their level of comparability, their sampling options, their periodicity, and their validity and reliability.

4. Analyse the indicators proposed by the OWG and EFA Steering Committee. In the light of the previous steps, the weaknesses and shortcomings of proposed indicators are evaluated in terms of relevance and availability. We pay particular attention to their potentialities and limitations to capture the equity dimension in measuring educational progress.

5. Propose alternative indicators for all three target themes. Potential indicators are presented with a proposed method to quantify and monitor them. Indicators are theoretically grounded and pay attention to aspects of equity. We suggest appropriate methods to get data from countries for which information is limited and anticipate practical problems related to tracking the new indicators.

6. Use the main findings to support conclusions and recommendations.

RELEVANT LEARNING OUTCOMES

EFA TARGET 2:

By 2030, all girls and boys complete free and compulsory quality basic education of at least 9 years and **achieve relevant learning outcomes,** with particular attention to gender equality and the most marginalized.

OWG TARGET 4.1.

By 2030 ensure all girls and boys complete free, equitable and quality primary and secondary education leading **to relevant and effective learning outcomes.**

Targets in Comparison

Tables 1 and 2 show similarities and differences between the EFA Steering Committee and OWG targets related to relevant learning outcomes.

Table 1. Similarities and Differences Between EFA and OWG Targets

EFA Target	OWG Target
all girls and boys	all girls and boys
complete	complete
achieve relevant learning outcomes	leading to **relevant and effective learning outcomes**
gender equality and the most marginalized	

Source: Authors

Table 2. Breakdown of EFA and OWG Targets

	EFA Target	OWG Target
Stated objectives	• complete basic education of at least 9 years • free, compulsory, and quality education • relevant learning outcomes	• complete • equitable and quality primary and secondary education • **relevant and effective learning outcomes**
Equity insights	gender and the most marginalized	not specified
Population affected	not specified	not specified
Education levels involved	primary and secondary (9 years)	primary and secondary

Source: Authors

It is important to note that both targets go beyond learning outcomes and **include other important dimensions.** Both targets set objectives such as free and equitable and the completion of primary and secondary education, or 9 years in the case of the EFA Steering Committee target. These "other important dimensions" of the proposed targets should be easily measured and monitored. As the Technical Advisory Group of the EFA Steering Committee (TAG) has asserted: *"countries are generally already well-placed to measure the access, participation and, at least according to national definitions, completion concepts of these targets"* (TAG, 2014). In terms of these other important dimensions, the only important difference is the concept of "compulsory education" mentioned in the EFA target, which could have some implications for the realization of the right to education.

The treatment of **learning outcomes** is significantly different between the two frameworks. The OWG target goes beyond the promotion of *relevant* learning outcomes to also include effective learning outcomes. More importantly, the EFA Steering Committee target *focuses on students* "achieving" relevant learning outcomes, whereas the OWG *focus is on the education system* "leading to" relevant learning outcomes. This distinction is important for two reasons. First, it is difficult to define the meaning of what effective learning outcomes are in different contexts and for different populations. Second, the OWG target focuses on the education system ("education leading"), while the EFA target mentions explicitly the right of all girls and boys to achieve relevant learning outcomes.

Another important difference lies in the **equity insights** included in each target. In the case of the OWG target there is broad reference to "equitable" education, while in the case of the EFA target there is specific reference to "gender equality and the most marginalized," identifying specific disadvantaged population groups.

As the TAG has pointed out, in recent years a great effort has been made to obtain data at national level about access, participation, and completion of primary and secondary education (UIS, 2014). Taking this into account, we turn our focus to targets on learning outcomes.

Learning Outcomes in the Post-2015 Debate: Insights and Challenges

EDUCATION FOR ALL: FROM ACCESS TO LEARNING

Discussions on the importance of learning outcomes have intensified during the post-2015 international debate, though learning outcomes have been present in the EFA agenda for some time. For example, the Dakar Framework for Action recognized in Goal 6 the need for "Improving all aspects of the quality of education and ensuring excellence of all so that *recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills*" (UNESCO, 2000, p. 8). However, the EFA Global Monitoring Report (GMR) did not establish any measure of learning as a key indicator for Goal 6. This goal has been monitored through indicators that referred to conditions of schooling (pupil/teacher ratio or teaching staff). As a result, learning outcomes were not measured or analysed globally between 2000 and 2015. One exception was the 2005 GMR, which focused on education quality but did not reduce education quality to learning outcomes; learning outcomes were considered outputs of education quality.

In the context of the post-2015 debate, Barrett (2011) notes that important international organizations such as The High Level Panel, EFA GMR, Save The Children, and the Commonwealth Education Minister have advocated for including learning outcomes as a goal in the new EFA framework. Indeed, current trends in educational development go beyond access and inputs indicators ("from access to learning"). Beatty and Pritchett (2012) synthetized the assumption underlying this global trend as "Millions of students still finish formal schooling without mastering basic literacy and numeracy. Schooling doesn't necessarily produce learning or education" (p. 1). The most recent GMR, published in 2014, estimates that around 250 million children who reached Grade 4 of primary education have failed to learn basics in reading and mathematics (UNESCO, 2014).

New evidence about the importance of learning outcomes has arisen in the last years and there is increasing awareness about the importance of education and learning for economic competition. Eric Hanushek, who has great clout in the World Bank, concludes that educational learning positively effects economic growth to a much greater extent than years of schooling (Hanushek & Woessman, 2008; World Bank, 2011). Most countries aim to become more internationally competitive by offering knowledge-intense products and services as well as new manpower profiles. Accordingly, they are expanding education and emphasizing the acquisition of skills and competencies and the notion of flexibility (Carnoy, 1999). Countries are also embracing policies that aim to ensure learning processes over the entire life span as a way to respond more effectively to changing labour demands in a globalized world (Jakobi, 2012).

Since the nineties, the EFA movement has contributed to impressive education expansion in most world regions (UNESCO, 2010b). However, many children, especially the poorest, did not achieve satisfactory learning levels (Bonal, 2007). Consequently, more and more stakeholders became concerned with the idea of "education quality," to the point that the international community agreed in Dakar to focus on providing *quality education for all* (UNESCO, 2000). The concept of education quality is highly ambiguous, but with the passing of time has been conflated to more concrete ideas of student learning. Thus, many scholars use today the concept of quality and learning indistinctly, and decision makers worldwide agree that improving the quality of education systems requires paying more attention to students' learning outcomes.

CAN LEARNING OUTCOMES MEASURE EDUCATION QUALITY?

Some influential international actors and scholars have reduced the notion of the quality of education systems to the level of learning outcomes achieved by students (see Filmer, Hasan, & Pritchett, 2006). An example of the importance given to learning outcomes as a proxy of education quality is World Bank Education Strategy 2020 (World Bank, 2011), which adopts a more discernible focus on learning outcomes and is subtitled "Learning for All" (Verger & Bonal, 2012). Barrett et al. (2006) frame this focus on learning outcomes as a proxy of education quality: "'Quality' has taken the place of 'improvement' in World Bank discourse . . . although still defined in terms of learner achievement" (Barrett et al., 2006, p. 7).

Scholars who associate quality and learning tend to criticise the traditional approach to quality based on school inputs:

> . . . all too often an input based approach to school quality is adopted in which measures of inputs thought to be associated with quality are measured (e.g. class size, infrastructure adequacy, teacher qualifications, etc.) but with little or no emphasis on actual student learning. At worst, quality is regarded as an add-on to access to schooling, which inverts the relationship that access to schooling is merely a means to learning. (Filmer et al., 2006, p. 9)

To overcome this conceptual debate, relevant proposals to the post-2015 education goals have included quality and learning within their frameworks but as separate goals (Rose, 2014). It is important to keep in mind the distinction between learning and quality to formulate indicators of learning outcomes because they should not replace other important measures of education quality. Furthermore, occasionally learning

outcomes are presented as a proxy of learning assessment, especially in regional and international assessments. Measuring learning outcomes at a global or regional level could lead to standardization of school curricula, especially if national education administrations try to adapt a curriculum to the requirements and to what is internationally assessed.

To address these possible unintended consequences, a holistic approach to education quality is needed. Synthetically, a framework to assess education quality must take into account not only outputs but also those processes and contextual dimensions leading to educational results. Indeed, the 2005 GMR proposed a comprehensive framework of education quality that includes context, learner characteristics, inputs, and outcome dimensions (Figure 1).

Figure 1. Education Quality Framework
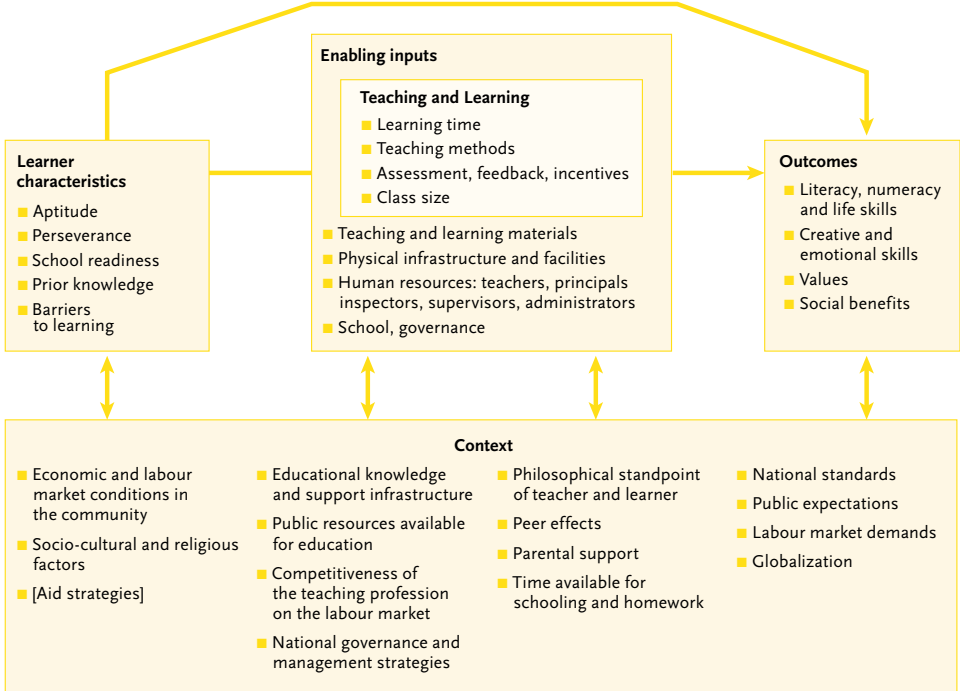
Source: UNESCO, 2005

Importantly, this comprehensive framework of education quality lays out the relationship between outcome dimensions and context, learner characteristics, and inputs—particularly teaching and learning—an aspect we develop later in this report. A final element to take into account in the measurement of learning outcomes is countries' different levels of development and the fact that the pace of progress in learning outcomes tends to be very slow, particularly in developing countries (Rose, 2014; Beatty & Pritchett, 2012).

MEASURING LEARNING OUTCOMES

The reports developed by the Learning Metrics Task Force (LMTF) develop a framework to measure learning outcomes in a comprehensive way. These reports have identified seven domains of learning: 1) physical well-being, 2) social and emotional, 3) culture and arts, 4) literacy and communication, 5) learning

approaches and cognition, 6) numeracy and mathematics, and 7) science and technology (LMTF, 2013). Although the 2013 report gives the same importance to all seven domains, it recognizes that global goals should possibly focus solely on one or two domains. At the same time, the LMTF points out the need to combine international comparable assessments with alternative assessments such as national learning assessments.

In the case of the Organisation for Economic Co-operation and Development (OECD), the PISA assessment framework focuses on to what extent "students near the end of compulsory education have acquired some of the knowledge and skills that are essential for full participation in society, focusing on student competencies in the key subject areas of reading, mathematics and science." (OECD, 2007, p. 16). However, PISA has gradually introduced other areas of assessment such as problem-solving competences, financial education, and electronic reading.

Beyond the identification of relevant learning outcomes, another important debate centers on the sources that should be used for measuring learning outcomes post-2015. In particular, one of the most important challenges refers to the difficulties that current assessments face to overcome the bias produced by high dropout rates in some countries or children not enrolled in the education system. Table 3 shows the magnitude of these two phenomena and important regional differences.

Table 3. Drop-out and Out-of-school Primary School Age Children in 2011

	Cumulative Drop-out Rate to the Last Grade of Primary Education	Out-of-school Children of Primary School Age
World	25.2%	57,120,000
Arab States	16.8%	4,768,000
Central and Eastern Europe	5.1%	753,000
Central Asia	2.2%	322,000
East Asia and the Pacific	7.8%	6,490,000
Latin America and the Caribbean	23.3%	3,506,000
North America and Western Europe	6.3%	2,006,000
South and West Asia	36.2%	10,092,000
Sub-Saharan Africa	42.2%	29,180,000

Source: UNESCO, 2014

Table 3 confirms that access to and completion of schooling are still significant problems for educational development; these phenomena need to be monitored. To measure the learning outcomes in a given country, the level of learning achieved by children in and out of school cannot be ignored. Filmer et al. (2006) suggest the possibility of combining access and learning by measuring education indicators of complete population cohorts:

> Moving from gauging the performance of an educational system from students to cohorts can make a large difference, and the measured performance of a cohort gives a better picture of educational system performance than quantity based measures (which ignore learning) or exclusively testing the learning of students, which ignores access. (p. 10)

The OECD has also expressed concern about this topic:

> Though much progress has been made in increasing access to education around the world, over 60 million children of primary-school age and over 70 million children of lower-secondary-school age remain out of school. Conducting PISA only among enrolled students would provide unrepresentative results and could encourage countries to exclude potential low performers from schools. (OECD, 2013, p. 4)

The following are thus still important challenges (some of them already highlighted by the TAG of the EFA Steering Committee) to measure learning outcomes at a global level and to monitor new goals focusing on learning outcomes:

1. **Agreement on key concepts.** It is necessary to clarify what is understood by learning outcomes, and particularly by relevant learning outcomes. Despite the work made by the LMTF, there is not an agreement yet about the meaning of relevant learning outcomes or which learning/knowledge domains are necessary to measure. Furthermore, the task of monitoring globally a number of learning outcomes would necessarily reduce the learning dimensions measured.

2. **Measurement tools and monitoring mechanisms.** The measurement tools and the indicators proposed need to be clear and comparable across countries. No existing data source on learning outcomes seems to cover enough countries. So, it would be necessary to make an important technical effort to cover this gap. The measurement of learning progress requires stable and comparable instruments over the years (Lockheed, 2008).

3. **Children out-of-school.** The challenge of out-of-school children should be faced, otherwise the measurement of learning outcomes, particularly in secondary education, could be biased in countries with low levels of enrolment and/or high drop-out rates.

Data Sources

There are three main data sources or candidates (Barrett, 2013) to measure learning outcomes: international and regional assessments, national assessments, and hybrid assessments (Wagner, 2011). The situation, strengths, and shortcomings of each typology of assessment are detailed in this section.

International and regional assessments are carried out by supranational organizations in multiple countries or in countries of a specific region. These assessments measure the achievement of students at a specific grade, with the exception of PISA, which has a target population based on a specific age.

Table 4 summarizes the major existing international and regional assessments. International assessments carried out by the IEA (TIMSS and PIRLS) and OECD (PISA) allow for comparability because they have a larger number of participating countries and are periodically carried out. Regional assessments carried out in Africa (PASEC and SACMEQ) and Latin America and Caribbean (LLECE) only allow for regional comparability and have been characterized by substantial differences among different editions.

Table 4. Cross-national Studies of Students' Learning

	Assessment	Organization	Domains	Target Population	Editions	Frequency	No. of Countries
International	TIMSS	IEA	Mathematics, Science	Grades 4, 8 (primary, secondary)	1995, 1999, 2003, 2007, 2011, 2015	4 years	76
	PIRLS	IEA	Reading	Grade 4 (primary)	2001, 2006, 2011, 2016	5 years	59
	PISA	OECD	Mathematics, Reading, Science	Age 15 (secondary)	2000, 2003, 2006, 2009, 2012, 2015	3 years	73
Regional	SACMEQ	SACMEQ	Mathematics, Reading	Grade 6 (primary)	1995-1997, 2000-2002, 2007, 2014	Variable	14
	LLECE	UNESCO	Mathematics, Reading, Science	Grades 3,6 (primary)	1997, 2006 2013	Variable	18
	PASEC	CONFEMEN	Mathematics, Reading	Grades 2, 5, 6 (primary)	1993-1995, 1997-2001, 2004-2010, 2014	Variable	24

Source: Adapted from Bonal et al. (2011) and UNESCO (2014)

National learning assessments[1] have experienced dramatic growth in the last two decades. The most recent aggregate data elaborated by Benavot and Tanner (2007) shows that in 1995 there were only 28 countries doing at least one national learning assessment, while this number increased to 57 in 2006.[2]

> National learning assessments evaluate learning outcomes based on criteria and expectations set forth by national education authorities. National assessments (sometimes called system assessment, learning assessment, and assessment of learning outcomes) may be defined as an exercise designed to describe the level of achievements, not of individual students, but of a whole education system, or a clearly defined part of it. (Benavot & Taner, 2007, p. 5)

At the present time, UNESCO Institute for Statistics (UIS) is collecting data about national learning assessments through the UIS Observatory of Learning outcomes.

Hybrid assessments are a mix between large-scale assessments and household-based educational survey methodologies (Wagner, 2010). There are currently four different hybrid assessments; Table 5 shows the main characteristics of each of them.

Table 5. Characteristics of Existing Hybrid Assessments

	Organization	Countries	Type of Assessment	Domains
EGRA	USAID / EdData II	11 countries	School-based	Literacy
EGMA	USAID / EdData II	14 countries	School-based	Numeracy
Uwezo	Uwezo	Kenya, Tanzania, Uganda	Household-based	Literacy and numeracy
ASER	ASER Centre	India	Household-based	Literacy and numeracy

Source: Authors

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1. It is important to point out that national assessments are different from public examinations, which are designed for students' promotion between different education levels or to deliver a credential.

2. For a detailed list of national learning assessments see UNESCO, 2008.

Limitations of existing data sources thus include:

1. **Coverage.** Although in recent years the number of countries participating in international and regional assessments has increased dramatically, the number of countries participating in any of these assessments is still low. For example, PISA, despite being the largest assessment in place, includes only 37 percent of the countries monitored in the last GMR. Recent data similarly shows that only 28 percent of the countries monitored in the last GMR are carrying out some type of national assessment.

2. **Periodicity.** At most, international and regional assessments are usually carried out every 3 or 5 years. The lack of more frequent analysis might limit effective monitoring of progress related to learning outcomes. In the case of national assessments periodicity is diverse; some countries do national assessments every year, while others only do it occasionally.

3. **Comparability.** Cross-national comparisons are difficult because the spread of "smaller, quicker and cheaper" (Wagner, 2011) assessment methods have caused problems in skill sampling, population sample, and population exclusions. Furthermore, some of the assessments (e.g., IEA tests and some national assessments) focus strictly on what should have been learned from school curricula while others such as PISA aim to assess students' competencies/skills to manage knowledge in everyday life. To further complicate efforts of comparability, population sampling varies considerably from one test to another with regard to the selection method (the grade evaluated or population age).

4. **Exclusions.** Concerning population exclusions, it is somewhat ironic that the most vulnerable populations—-who potentially have the most to gain from improved education systems—are often excluded from assessments because of factors such as gender, geography, ethnicity, language, national origin, and/or physical or mental handicaps. Furthermore, as previously mentioned, most of the assessment tools described are implemented at the school level, which means school age children who are not in school are not even part of the analysis.

These problems illustrate that attempts to compare countries by imputing missing learning scores from one test to another are questionable and may incur significant biases to evaluate educational outputs (see EPDC, 2011). The number of shortcomings and distortions are high, so are the qualitative aspects (educational and non-educational) that make the exercise of comparing educational outputs a risky and erratic task.

However, the Learning Metrics Partnership (LMP) initiative developed by the Australian Council for Educational Research (ACER) and the UIS aims to identify items in each available assessment that would allow for comparability between them:

> The LMP's objective is to develop empirically derived learning metrics in mathematics and reading that will support national governments to effectively measure and monitor learning outcomes for policy purposes. Rather, it supports the use of existing assessments of various kinds, and a pool of calibrated items that could be. (LMP, 2014, p. 2)

Analysis of Current Indicators

Table 6 outlines the indicators related to Learning Outcomes targets proposed by the TAG-EFA.

Table 6. Learning Outcomes Indicators Proposed by the TAG-EFA

	INDICATOR	ALIGNMENT WITH CONCEPT	DATA AVAILABILITY
	Achievement of relevant learning outcomes		
	Percentage of children who achieve the minimum proficiency standards relevant to their age group/ grade in reading and mathematics at the end of:	High: Direct assessment of reading and mathematics skills.	Indicators of learning outcomes in reading and mathematics are available from national, regional and international assessments for:
			ca. 35 countries from regional assessments
YELLOW	- Grade 2		ca. 60 countries from EGRA/EGMA
YELLOW	- primary school		ca. 50 countries from PRILS
YELLOW	- lower secondary school		ca. 70 countries from PISA, ca. 65 from TIMSS
RED	- secondary school		ca. 10 countries from TIMSS

Source: UIS, 2014

The Leadership Council of the Sustainable Development Solutions Network (2014) proposes:

> Percentage of girls and boys who master a broad range of foundational skills, including proficiency in reading and foundational skills in mathematics by the end of the primary school cycle (based on credibly established national benchmarks).

Neither group clearly outlines which data sources should be used to monitor these proposed indicators. TAG-EFA proposes using different international and regional learning assessments (EGRA/EGMA, PIRLS, PISA or TIMSS) though at the same time they recognize significant challenges arising from the lack of information to monitor an important number of countries and potential issues related to the validity and reliability of the indicator proposed. These problems of alignment and global comparability are common to all proposed indicators to measure learning outcomes.

Proposed Indicators and Data Sources to Monitor Learning Outcomes

The indicators we propose are presented on three different dimensions, with two different measures for each dimension (see Table 7). The criteria used to determine these proposed indicators are:

1. **Focus on reading and mathematics.** It is difficult to establish which learning domains need to be achieved in primary and secondary education. Although the LTMF has identified at least seven domains (LTMF, 2013) the lack of data and the required simplicity of global monitoring make it necessary to reduce the learning domains to be measured. In this context, reading

and mathematics have been selected because they are the most common domains included in educational assessments. Also, the relevance of context for reading and mathematics competencies may be considered lower in relation to other competences such as social and emotional or cultural and artistic competencies. Finally, the assessment of a broader number of competencies could have unintended consequences related to curriculum standardization or pedagogical practices focusing on external assessments (teaching to the test).

2. **Minimum level of proficiency.** The achievement of a minimum level of proficiency is an indicator available in most educational assessments. Moreover, ensuring a minimum level of learning outcomes seems coherent with the principles of the goals proposed.

3. **Equity indicators.** It is important to assess effectiveness in learning outcomes but also to measure educational inequalities related to socio-economic status and gender. This focus on socio-economic and gender equity is based on the assumption that these axes of inequalities are the most pervasive at a global level. Obviously, in many countries ethnic, location (urban/rural), or other axes of inequalities are also relevant to analyse educational inequalities.

4. **Static and progress indicators.** Some authors stress that progress in learning outcomes is very slow (Beatty & Pritchett, 2012; Rose, 2014). This fact is particularly important for developing countries. Beatty and Pritchett (2012) note that "At 'business as usual' progress, it would take a century or more for developing countries to reach current OECD assessment levels" (p. 1). Thus, combining static or long-term objectives and progress indicators is most appropriate to establish feasible objectives for a 15-year period.

5. **Measurement at the end of primary and secondary education.** The indicators proposed are designed to monitor the level of learning outcomes achieved by learners at the most common theoretical age of end of primary and secondary education.

Table 7. Proposed Indicators to Monitor Learning Outcomes

Dimension	Indicator	Progress measures	Equity Indicators	
Reading	Percentage of children who achieve minimum proficiency standards in reading at ages 12 and 15.	By 2030, countries should increase by XX% the children who achieve minimum proficiency standards in reading at ages 12 and 15.	Social	Ratio between first and fifth quintile of SES: % of children who achieve minimum proficiency standards in reading at ages 12 and 15.
			Gender	Ratio between males and females: % of children who achieve minimum proficiency standards in reading at ages 12 and 15.
			Location	Ratio between urban and rural: % of children who achieve minimum proficiency standards in reading at ages 12 and 15.
Mathematics	Percentage of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.	By 2030, countries should increase by XX% the children who achieve minimum proficiency standards in mathematics at ages 12 and 15.	Social	Ratio between first and fifth quintile of SES: % of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.
			Gender	Ratio between males and females: % of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.
			Location	Ratio between urban and rural: % of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.

PROPOSED DATA SOURCES

The measurement of learning outcomes to monitor the progress of the new goals proposed by EFA and the OWG will require significant data collection and analysis. In this context, two different possible strategies are proposed:

1. **Develop a technical tool** to make comparable the different existing learning assessments and increase participating countries. The Learning Metrics Partnership (LMP) has developed this work but up to now results have not been published.

2. **Design a specific learning assessment** to monitor the EFA and the OWG goals. The limitations of different data sources justify the creation of a new instrument for measuring learning outcomes globally. The characteristics of the proposed instrument are as follows:

   » **Household-based assessment.** Focus on households instead of schools as units where assessment will be carried out. The high number of children out of school and the high rates of dropout in some countries (particularly in Sub-Saharan Africa and South and West Asia) reduce the validity and reliability of school-based assessment as a measure of learning outcomes in a given country.

   » **Sample-based.** As in the case of Large Scale Educational Assessments (LSEA), a sample-based test is sufficient to obtain representative measures of learning outcomes at a country level. Administratively, sample-based assessments are less costly both economically and in terms of time.

   » **Age cohort.** Age cohort is the best population sample approach to reduce biases related to children out of school, and drop-out and retention policies in different educational systems.

   » **Minimum proficiency in reading and mathematics.** Reading and mathematics have been selected as the most common learning domains, in a context of a need to reduce the number of domains assessed.

   » **Monitoring and diagnostic purposes.** The main objective of this assessment is to provide data for the monitoring of new education goals, but the creation of a new specific measurement tool could be used by national governments and international organizations to diagnose the situation of national educational systems.

   » **Adaptability to national needs.** Although it is necessary to establish a general assessment framework for comparability purposes, the evaluation design could be adapted to specific national needs.

Conclusions and Recommendations

Before moving forward, we want to lay out some **possible unintended consequences.** The introduction of learning outcomes indicators in the context of some developing countries could hide other challenges that are still important for educational progress. In some regions, particularly in Asia and Sub-Saharan Africa, access and completion of primary and secondary education are still a priority. There is also a risk that the introduction of learning outcomes within a new global action framework could replace a wider, more holistic definition of education quality.

Obviously, there are other important dimensions of learning beyond numeracy and literacy, but the global monitoring of learning outcomes requires the reduction of measured dimensions. Although the LMTF has identified seven learning domains, the final report recognizes the need to focus only on one or two of them (LMTF, 2013). There is a trade-off between a holistic approach to relevant learning outcomes and a feasible measurement system. The lack of data and the need to create good quality, comparable and easy communicable indicators obligates us **to reduce the number of learning domains measured and monitored at a global level.** This does not mean that no other relevant learning outcomes should be measured and monitored at a national level, but in the current context literacy (or reading competencies) and numeracy (or mathematics competencies) are considered the most basic domains, and most international and national assessment measure them. Three main arguments justify the selection of these two main competencies. The first is the lower relevance of context in the literacy and numeracy competencies in comparison with the other competencies mapped as relevant. The second is that this option reduces the possible unintended consequences related to learning assessments such as teaching to the test or curriculum standardization. Lastly, it is important to note that other important dimensions such as global citizenship education and education for sustainable development are present in other targets.

The review of different data sources to measure learning outcomes reveals **two main options to establish a measurement tool or data source.** The first option—expansion of current international, regional, and national assessments—would require a technical tool to identify comparable items from each type of assessment. The second option is the generation of a new assessment to overcome the limitations of the existing ones.

As already stated, the best way to include **the equity dimension** in the indicators related to learning outcomes is to set up specific equity indicators. The equity indicators we proposed focus on two inequalities axes: socioeconomic status and gender. These are possibly the most common and important axes of inequality around the world. Obviously, these indicators can be adapted at a national level to measure other relevant inequalities.

KNOWLEDGE, SKILLS, VALUES, AND ATTITUDES (EGC AND ESD)

EFA TARGET **5:**

By 2030, all learners acquire knowledge, skills, values and attitudes to establish sustainable and peaceful societies, including through global citizenship education and education for sustainable development.

OWG TARGET **4.7:**

By 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development.

Targets in Comparison

Table 8 shows the similarities and differences between the EFA Steering Committee and OWG targets related to EGC and ESD outcomes, and the subsequent narrative describes the substantial differences in their positioning and content.

Table 8. Similarities and Differences between EFA and OWG Targets in EGC and ESD

EFA Target	OWG Target
all learners	all learners
knowledge, skills, values and attitudes	knowledge and skills
establish sustainable and peaceful societies	promote sustainable development
through global citizenship education and education for sustainable development	through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development

Source: Authors

Both targets are highly ambitious in their scope and means, though the EFA target is formulated in a more simple way. The OWG target includes an ambitious list of means by which the promotion of sustainable development should be achieved. On the positive side, it makes the effort to translate the uncertain field of education for sustainable development (ESD) into a number of objectives that include environmental sustainability, social inclusion, peace, gender equality, and cultural diversity.

The explicit objectives in the targets include a noteworthy difference. While the EFA target refers to establishing *sustainable and peaceful societies,* the OWG target refers to the *promotion of sustainable development.* Interestingly, it is not a minor issue to include "peaceful societies" as an objective or as a means to achieve sustainable development. The promotion of a culture of peace (included in the OWG target) may differ (though, of course, highly related) from trying to achieve a *peaceful society.* Some governments might implicitly understand a peaceful society as a *pacified society,* at the cost of reducing civil and political liberties. Thus, considering peace education as a necessary means for sustainable development might be a better strategy in terms of democratic and human rights values, than including peaceful societies as a target. In this sense, despite its ambiguity, it might be more strategic to frame the target as *sustainable development* (as the OWG target does), or even *inclusive and sustainable development.*

The EFA target includes the need not only to acquire knowledge and skills, but also *values and attitudes* (which is missing in the OWG target). This is, of course, a substantial difference. Although possibly implicit in the OWG target, the inclusion of values and attitudes along with knowledge and skills is more coherent and consistent with the *spirit* of the target. In fact, as we will observe later in this report, international surveys that have included aspects of civic education differentiate between "knowledge of facts and beliefs" and "attitudes and behaviours." Although knowledge and skills are necessary basis to develop positive attitudes and values, these are clearly different dimensions. Restricting education for global citizenship (EGC) and sustainable development to knowledge and competencies might not reflect how education systems and informal education processes may transform young people's attitudes towards sustainable and inclusive societies.

Given the complexity of the field, the lack of the equity dimension in both the EFA and OWG targets might be logical. However, ESD is also a field in which inequalities can be clearly identified. Access to specific forms of knowledge and skills that can be understood as new *forms of literacy* in today's global, complex societies is very unequally distributed in the world. Understanding digital, political, or scientific dimensions in the global world is part of an extended concept of literacy that education cannot ignore. People's capabilities are deeply related to their development of competencies that are based in this broader concept of literacy. Thus, social, cultural, or gender differences can be exacerbated simply because the competencies required to thrive in today's world are wider. Of course, this has a direct consequence on how we understand and conceptualise the right to education, and especially what should be considered "basic education" today. Even if they increase their levels of literacy and mathematical competency, the most disadvantaged are very likely to face new obstacles that prevent them from developing the necessary "functionings" to realise their freedoms. In summary, the inequality dimension cannot be ignored in a target on ESD and EGC.

Theoretical and Political Options for ESD and EGC

The discussion on the concepts of EGC and ESD can be endless. Both concepts/ideas are very wide and allow for many different interpretations. What is and what is not global citizenship education? Which areas of knowledge and attitudes should it develop? Should its inclusion as a specific subject in the curriculum be considered as a positive sign or is it more efficient to include it as a cross-curricular area? How do we unpack the concept of ESD? Which social and environmental dimensions must be reflected? These and many other questions are complex and open many options of understanding EGC and ESD and countless models of assessment.

Narrowing the field of EGC and ESD is an almost impossible exercise. Not only because concepts such as global democracy, cosmopolitanism, global citizenship, and sustainable development are very broad, but also because each carries vast theoretical and political debates. The concept of modern citizenship has actually the same history as modern political theory (Carter, 2001; Torres, 1998). Philosophers and political theorists have referred to different dimensions of the concept and have provided alternative forms of understanding the relationship between the individual and the state and the explicit or implicit contractual aspects that should govern the organisation of the public sphere. In addition, their contributions were framed by the need to solve the complex relationship between the individual and society in the context of growing industrialisation and the modern nation-state. The advent of globalisation challenges notions of citizenship (and citizenship education) rooted in national cultures or ethnic identifications. Habermas' (2001) notion of constitutional patriotism aimed to overcome the attachment of the citizen (and the global citizen) to the national culture or the ethnic group and became an invitation to national governments to construct supranational political spaces framed by forms of post-national constitutionalism (his defence of a European constitution was probably the best example). It is quite clear that today's world, with its increasing national, ethnic, and interreligious conflicts, though, is far from producing global citizens who embrace global democracy, peaceful societies, or sustainable development.

The extent to which we believe education can make a difference in achieving possible forms of constitutional (and post-national) patriotism is also a matter of debate and would constitute another line of discussion. Indeed, some theorists of globalisation and education implicitly assume that global citizenship is being achieved because of the processes of convergence in the forms in which the school curricula are being organised and defined (Meyer et al., 1992). Thus, isomorphism in what is taught would be a sign that education systems are embracing common (Western) values and that democratic political socialisation is taking place globally. This *world polity* approach can be highly questioned when applied to citizens' notions, attitudes, or behaviours around aspects of peacebuilding, sustainable development, civic engagement, or intercultural dispositions. Several analyses based on the World Values Survey show great international differences in aspects such as racial tolerance,[3] cosmopolitan attitudes (Schueth & O'Loughlin, 2008), and

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3. See www.washingtonpost.com/blogs/worldviews/wp/2013/05/15/a-fascinating-map-of-the-worlds-most-and-least-racially-tolerant-countries/

acceptance of homosexuality.[4] Likewise, the Green Index constructed by the National Geographic Society shows significantly different sustainable consumption patterns in different countries.[5]

These differences are actually good proxies to avoid naïve attitudes towards certain indicators of supposed cohesiveness or Westernisation of values. They also alert us to the risks of considering the inclusion of specific curricular packages as positive and uncritical signs of governments working towards sustainable development and global democracy. Mostly, they alert us about the fact that EGC and/or ESD cannot be considered uncritical and apolitical areas of knowledge and attitudes. EGC and ESD embrace profound debates about the type of society we want to live in, and carry political and ethical values on which governments should reach some agreements before we begin measuring.

This section points out some of the possible options that decision makers may face when trying to narrow the field and frame both concepts. If the measurement of the targets has to be as simple as possible and comparable, it is an unavoidable task to reach some form of consensus on what is going to be measured and, even more importantly, how these measures are going to be interpreted.

Opting for potential dualities or differences in this complex filed might constitute an interesting strategy when trying to reach that consensus. Not all the dimensions are dual, and most have room for all possible greys between the black and white. But this is a crucial exercise if a common ground needs to be established, and it does. Of course, the list of political options is much wider. We just provide some examples of the types of debates on which governments should reach consensus.

Different forms of democracy. While democratic values should obviously be a non-negotiable aspect of EGC, there are several forms of democracy that citizens must be aware of. Representative democracy and parliamentarianism are certainly the most common forms of democracy, but there are alternatives of political deliberation that are growing in many organisations, such as assemblies, direct democracy, participatory budgets, and so on. Including all of the possibilities of exercising democracy is a political option on which governments should reach agreement.

Causes vs. forms of conflict resolution. Education for citizenship in many countries tends to include several forms of conflict resolution (including political negotiation, intermediation, etc.). However, the curriculum rarely engages on the causes of conflict, which in many cases are based on power relations and structural inequalities. EGC should either accept that conflict resolution strategies are independent of the nature of the conflict or focus on the sense of social injustice linked to specific forms of oppression and exploitation.

Tolerance vs. inclusion. Citizenship education commonly includes values of tolerance towards difference. Cultural difference, gender, sexuality, and race are common examples of differences that societies should accept and recognise. However, tolerance is different from inclusion and integration. EGC curricula-makers should ideally contemplate not only acceptance of difference but also systems of integration and interrelation.

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4. See www.youtube.com/watch?v=LjbRtrNME6I

5. http://environment.nationalgeographic.com/environment/greendex/

The relationship between the citizen and the state is probably what gives EGC a completely unique orientation. Forms of civic or citizenship education that build on attitudes of respect to public institutions and the public authority are common, but they tend to ignore civil, political, or social rights that citizens could claim. EGC should ideally present the relationship between the citizen and the state as a social contract and not solely as a matter of acceptance of and respect for the state.

Wishful development vs. factors preventing sustainable development. Many governments have rolled out policies and programmes to educate citizens towards attitudes and behaviours that favour sustainable development (e.g., recycling products, conserving water, etc.). Often, what's missing is careful analysis of the factors that are preventing sustainable development or more sustainable models of consumption, pollution, and participation. ESD must critically explore possible alternative models of growth and social inclusion.

Though there are many others, these dimensions are good examples of options underlying EGC and ESD that cannot be ignored or neglected if targets, goals, are to be effectively established in this field.

Data Sources

As EGC and ESD are complex and diverse areas of knowledge linked to public action, it is difficult to identify a single source that might reflect the requirements embedded in this target. There are a number of international surveys that have approached dimensions of EGC and ESD and provide interesting data on specific aspects of democratic values, cosmopolitanism, attitudes of tolerance, and consumption attitudes. This section reviews the most relevant data sources and evaluates their pros and cons as sources of information to identify specific indicators. In order to frame possible sources from which international data can be obtained, the section reviews the two most important sources of data in this field: the *International Civic and Citizenship Education Study* (ICCS) of the International Association for the Evaluation of Educational Achievement (IEA), and the *World Values Survey*, carried out by the World Values Survey Association. Many surveys cover partial aspects of EGC and/or ESD, but they are less holistic and comprehensive than the two presented here.

THE INTERNATIONAL CIVIC AND CITIZENSHIP EDUCATION STUDY

In 2009, the IEA carried out their third project investigating the role of schooling in preparing young people for their roles as citizens in society. The previous studies were carried out in 1971 and 1999. The aim of ICCS is "to report on student achievement on a test of conceptual knowledge and understandings in civic and citizenship education. It also intends to collect and analyse data about student dispositions and attitudes relating to civic and citizenship education" (IEA, 2010, p. 5). The study covered 140,000 Grade 8 students, 62,000 teachers, and 5,300 school principals from 38 countries of Europe, Asia, and Latin America.

The key research questions for the study concern student achievement, dispositions to engage, and attitudes related to civic and citizenship education. ICCS aims to measure the level of knowledge and competencies students have in civic education, their dispositions to engage in political life, and students' perceptions of risks and liberties. It also aims to identify which aspects of education systems (such as school curriculum, teaching practices, or aspects of school organization) and of students' backgrounds

may explain differences in the knowledge and dispositions shown in different countries. A very ambitious project, ICCS uses six different questionnaires to collect data not only on the cognitive aspects of civic education, but also on students' perceptions and social backgrounds, different teaching styles, and regionally specific questions.

The ICCS assessment framework is organized around three dimensions (see Table 9): a content dimension specifying the subject matter to be assessed within civics and citizenship; an affective-behavioural dimension that describes the types of student perceptions and activities that are measured; and a cognitive dimension that describes the thinking processes to be assessed.

Table 9. Dimensions and Domains of the ICCS

Dimensions	Domains			
Content	Civic society and systems	Civic principles	Civic participation	Civic identities
Affective-behavioural	Value beliefs	Attitudes	Behavioural intentions	Behaviours
Cognitive	Knowing	Reasoning and analysing		

Source: IEA, 2010

For each domain, key concepts frame what to measure and the type of questions that will be defined. For instance, "Civic society and systems" include aspects of civic relationships among social groups, state institutions, and civil institutions, which in turn relate to key concepts such as power/authority, governance, constitution, negotiation, and democracy. Civic principles refer to aspects of equity, freedom, and social cohesion, which are related to key concepts such as human rights, respect, empathy, social justice, and inclusiveness. The ICCS offers a detailed description of each dimension, the associated domains, and the related key concepts.

Interestingly, the international cognitive test of the ICCS is organised by crossing the four "Content" domains to the "Affective-behavioural" and "Cognitive" domains. Attitudes or forms of reasoning, therefore, are not independent from content but depend on it. The following table reproduces the number of questions included in the questionnaire for each combination of Content domain and Cognitive and Affective-behavioural domains.

Table 10. Coverage of the Cognitive/Affective-Behavioral and Content Domains in the ICCS Student Surveys

	DOMAINS				
	Civic Society and Systems	**Civic Principles**	**Civic Participation**	**Civic Identities**	**TOTAL**
Cognitive domains					
Knowing	15	3	1	0	**19**
Analyzing and reasoning	17	22	17	5	**61**
Total	**32**	**25**	**18**	**5**	**80**
Affective-behavioral domains					
Value Beliefs	12	12	0	0	**24**
Attitudes	12	18	18	14	**62**
Behavioral intentions			21		**21**
Behaviors			14		**14**
Total	**24**	**30**	**53**	**14**	**121**

Source: IEA, 2010

The ICCS shows that countries organise citizenship education in very different forms (some countries include it as a curricular subject while others treat it as a cross-curricular area). In addition, as the *2009 ICCS Report states,*

> Civic knowledge was measured on a scale where the international average was set to 500 scale points, with a standard deviation of 100 scale points. ICCS revealed considerable variation across and within countries in the extent of civic knowledge. About half of the variation was recorded at the student level, about a quarter at the school level, and a further quarter across countries. (IEA, 2010, p. 16)

This quote reveals how important it is to grasp differences in the level of citizenship knowledge and competencies among different social groups within the same country. In fact, the study reveals significant differences depending on students' social or migrant background (IEA, 2010, p. 17). Thus, the equity dimension of EGC must be clearly taken into account.

Table 11 summarises pros and cons of the ICCS in relation to the objectives of measuring EGC and ESD as framed by the OWG and EFA targets.

Table 11. Pros and Cons of ICCS Survey as Data Source for the Post-2015 Framework

Pros	Cons
• Theoretically grounded survey	• Only focused on EGC (not on ESD)
• Excellent conceptual design	• Only 38 countries (Africa not included)
• Distinguishes between knowledge and perceptions and attitudes	• Difficult selection of specific indicators as a proxy of civic knowledge or civic engagement
• Distinguishes between behavioural intentions and behaviours	• Controversial interpretations about "civic" attitudes. Possible political biases.
• Includes regionally-specific questions	• High economic cost
• Includes a wide range of contextual variables	

Source: Authors

THE WORLD VALUES SURVEY

The World Values Survey (WVS) uses a common questionnaire developed by a global network of social scientists to get nationally representative data for studying changing values and their impact on social and political life. Since 1981 the WVS has produced six waves (the most recent, 2010 to 2014, covered 54 countries). The WVS includes questions about participation in public and social life, environmental attitudes, perceptions of the most important problems of society, values associated with different forms of democracy, tolerance and acceptance of human differences, and some other dimensions that can be related to EGC or ESD. Most of the questions are organised using a Likert-type scale of attitudes, asking for different levels of agreement or acceptance, although other types of questions (e.g., choices among different options) are also included. While this allows for some interesting international quantitative comparisons, it can reduce qualitative differences and gives room for different interpretations.

Examples of questions included in the WVS that are related to EGC or ESD are:

Now I am going to read off a list of voluntary organizations. For each organization, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?

Now I will briefly describe some people. Using this card, would you please indicate for each description whether that person is very much like you, like you, somewhat like you, not like you, or not at all like you?

- It is important to this person to be rich; to have a lot of money and expensive things.
- Looking after the environment is important to this person; to care for nature and save life resources.
- Tradition is important to this person; to follow the customs handed down by one's religion or family.

I'm going to read out some problems. Please indicate which of the following problems you consider the most serious one for the world as a whole?

- People living in poverty and need
- Discrimination against girls and women
- Poor sanitation and infectious diseases
- Inadequate education
- Environmental pollution

Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view?
- Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs.
- Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent.

Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Use this scale where 1 means "not at all an essential characteristic of democracy" and 10 means it definitely is "an essential characteristic of democracy."
- Governments tax the rich and subsidize the poor.
- Religious authorities ultimately interpret the laws.
- People choose their leaders in free elections.
- People receive state aid for unemployment.
- The army takes over when government is incompetent.
- Civil rights protect people from state oppression.
- The state makes people's incomes equal.
- People obey their rulers.
- Women have the same rights as men.

Interestingly, the examples provided show that the nature of questions included in the WVS are vary and measure very different things: from assessing objective participation in specific organisations to attitudes towards protecting the environment or accepting equality between men and women. It is noteworthy that the fourth question distinguished two models of growth (giving priority to the environment or to job creation), which may create an artificial dichotomy that can clearly bias interpretation between pro-growth or pro-environment dispositions. In addition, other questions oblige the respondent to establish difficult hierarchies among priorities, which is likely to make it difficult to assess higher or lower levels of positive citizenship. Based on the summary of pros and cons shown in Table 12, the WVS is only an indirect source of data for the purpose of assessing EGC or ESD.

Table 12. Pros and Cons of WVS Survey as Data Source for the Post-2015 Framework

Pros	Cons
• Covers a sample of developed and developing countries	• More developed than developing countries participate
• Includes questions that can be proxies of both ESD and EGC	• Difficult selection of specific indicators as a proxy of civic knowledge or civic engagement
• Allows for quantitative comparison of specific items and attitudes	• Not specifically designed for ESD or EGC
• Less costly than ICCS	• Survey only addressed to adults (+18)
	• Allows for very indirect interpretation of pro-sustainable development attitudes
	• Controversial implicit notions of citizenship
	• Not regionally specific items

Source: Authors

Analysis of Current Indicators

Indicators proposed in this area were developed by the TAG of the EFA Steering Committee and published in November 2014 by the UIS. The document identifies indicators for each of the targets included in the seven post-2015 education targets proposed by the EFA Steering Committee in its Joint Proposal and endorsed with some variations in the Muscat Agreement in May 2014, and the ten education targets proposed by the OWG of the United Nations General Assembly in its document published in July 2014. Interestingly enough, indicators proposed for EGC/ESD are presented in yellow and red, which indicates weak proxies, reflecting how difficult it is to identify consistent measures in the field.

Many questions remain. Knowledge appears to be an important component of sustainable and peaceful societies, but what knowledge? Table 13 presents the dimensions identified by the TAG so far, the level of alignment with the concepts, and the available sources of data.

Table 13. Indicators of EGC/ESD proposed by the TAG-EFA

	INDICATOR	ALIGNMENT WITH CONCEPT	DATA AVAILABILITY
	Knowledge and skills for sustainable peaceful societies		
YELLOW	Percentage of 15-year-old students showing proficiency in knowledge of global issues including knowledge of environmental science and geoscience	Moderate: Knowledge is seen as important component but does not cover the full concept of GCE/ESD	PISA 2006, administered in 57 countries, estimated an "environmental science performance index." ICCS 2009, which included 38 countries, contains workable items for larger-scale tracking that will require validation in developing world settings. ICCS 2016 will provide globally comparable data on civic knowledge and engagement, and students' roles in peaceful functioning of schools.
	Values and attitudes for sustainable peaceful societies		
RED	Percentage of 13-year-old students endorsing values and attitudes promoting equality, trust and participation in governance	Moderate: Covers important values and attitudes but is not comprehensive	ICCS 2009; se notes above.
YELLOW	Percentage of adults who respond positively to the statement: "Protecting the environment should be given priority even if it causes slower economic growth and some loss of jobs"	Moderate: Covers important values and attitudes but is not comprehensive	World Values Survey 2012, which has included over 100 countries in various survey waves, contains items on values and attitudes on environmental protection, views on citizenship, freedom of information, and global awareness. These items will also require further validation and testing for youth in developing world settings.
	Global citizenship education (GCE)		
YELLOW	Percentage of 13-year-old students participating in citizenship education	Moderate: Participation in citizenship education is only one component of GCE/ESD	ICCS 2009; se notes above. The inclusion of classroom characteristics relevant to GCE/ESD (i.e. openness of classroom dialogue) can also be considered. PISA 2018 will incorporate an assessment of global competence, which may cover knowledge and skills, attitudes, and dispositions towards global issues as well as aspects of global employability and mobility of young people

Source: UIS, 2014, p. 26

The indicators included refer to knowledge about science and the environment. PISA questions are clearly oriented to ascertain students' interest in science, which can be relevant not to their pro-environmental attitudes but to their instrumental competencies in the area of science and their applications to industry. This is a crucial aspect to consider if PISA data will be used to measure EGC/ESD. Moreover, constructing sustainable and peaceful societies will require knowledge beyond knowledge of science. As important is knowledge about politics and society, which is not considered as a measure (despite the fact that the same data sources include questions that cover those realms).

Two indicators try to cover aspects of values and attitudes. Both are taken from the 2009 ICCS. The first refers to students' values and attitudes promoting equality, trust, and participation in governance. This

indicator is identified in red, so it is assumed to be a weak proxy of EGC/ESD. It certainly has a moderate alignment with the concept. But this is not the only problem. Are students supposed to answer this question in an abstract form? If examples will be presented to students, what are they? How is participation in governance understood? Is voting the only form of participation included or are there other forms? The following indicator is coloured in yellow, but should possibly be red. The indicator is taken from the WVS question that asks students to identify as pro-environment or pro-growth/job creation. As mentioned, this is a false dichotomy. Students who select the pro-job creation option are not necessarily less pro-environment than other students (and this is a question that can vary highly depending on the social characteristics of the respondent). The interesting differentiation between attitudes, beliefs, behavioural intentions, and actual behaviour is reduced to a simple measure of attitudes that may not reflect the dispositions of students towards citizenship or sustainability.

The last indicator is also weak and highly problematic. Not all education systems include education for citizenship as such. Some systems have a subject only indirectly related to its supposed contents, whiles others may cover citizenship values in cross-curricular forms. Determining which students are in education systems that really cover EGC is a very difficult aspect to measure. Besides, the first two sections have largely discussed how problematic it can be defining what is and what is not an education for citizenship for global democracy and global sustainable development.

Suggested Steps for Selecting Indicators for EGC/ESD

The aspects reviewed so far highlight the difficulties for establishing objective, shared, comparable, and simple measures in this field. There is data available from international and national surveys that are of interest for the EGC and ESD areas. However, these surveys usually cover a limited number of countries, predominantly from the developed world. If efforts for identifying indicators in this area only concentrate on existing surveys, we run the risk of reducing EGC/ESD to a matter of interest exclusively for the developed world. Moreover, using data from surveys that do not focus specifically on EGC/ESD may open different interpretations depending on the specificity and the context in which the survey is implemented.

While prioritising international surveys carries several problems of contextualisation of data, using national surveys may become an even more problematic option, since local realities and political situations vary and give different meanings to concepts such as citizenship and sustainable development. Finally, trying to establish specific indicators for specific targets is adequate for setting benchmarks and goals to be achieved in a given period of time. If this is the strategy, measures must be as objective as possible, since indirect or proxy indicators assume certain relationships that might not always take place. In the case of EGC/ESD, considering the inclusion or exclusion of education for citizenship in the school curriculum as an indicator is problematic. Nothing is evaluated about the content of this curriculum and nothing is said about its possible political orientation. On the other hand, establishing indicators for measuring benchmarks does not tell us anything about which factors explain why the benchmark is or is not achieved. In other words, a country may have a developed curriculum in EGC/ESD, but the real level of internalisation of citizenship in the country may be low. While education systems are crucial institutions for the development of citizenship, they may not compensate for other forms of political socialisation that might have a stronger impact.

Given all these obstacles, providing a proposal on how to measure EGC/ESD becomes a controversial task. This section identifies a possible path; we aim to translate the reflections provided in this chapter into a coherent process of measuring the field.

STEP 1. POLITICAL DISCUSSION

Governments discuss and agree on the minimum requirements of how EGC and ESD should be defined and measured. This step carries inevitably a political discussion among governments to decide on the crucial aspects we have identified earlier in this chapter (relationship between the individual and the state; forms of conflict resolution; tolerance/inclusion; and environmental awareness). Such discussions will be an essential step to identify common ground and agree on the desirable outcomes of EGC/ESD.

STEP 2. STRUCTURING THE FIELD OF EGC AND ESD

A second and necessary step is the structuring of the complexity of the field. Based on the previous political discussion step, sub-areas of EGC and ESD must be defined. The structure of content domains of the ICCS must be a good starting point, though the field of sustainable development should be included and expanded. In any case, it is crucial to establish a structure that allows differentiating between the following levels: knowledge/skills; attitudes/beliefs/values; and intentional behaviour/actual behaviour. That is, for each subfield of content domain (environmental sustainability; forms of democracy; participation systems) the three levels must be observed.

STEP 3. THE SURVEY

Based on the above structure, a short questionnaire could be defined. This questionnaire would be passed to sample 15-year-old citizens in each country (which would be consistent with our proposed learning outcomes measures). The questionnaire (or the part of the questionnaire that refers to EGC/ESD) could be responded to in a few minutes and should include crucial questions that allow for measuring levels of knowledge, attitudes, and behaviours in EGC/ESD. Narrowing the field is an extremely difficult task, but it is also a necessary task if EGC/ESD has to be measured.

PROPOSED INDICATORS AND DATA SOURCES TO MONITOR KNOWLEDGE, SKILLS, VALUES, AND ATTITUDES

Our proposed list of indicators (Table 14) clearly differentiates four dimensions of analysis: knowledge/skills, attitudes/values, intended behaviour, and actual behaviour. We feel this is unavoidable because knowledge does not necessarily translate into attitudes, nor do attitudes or even values automatically lead to desired behaviours. Only by grasping all four dimensions is it possible to assess levels of effectiveness and internalisation of EGC/ESD. We differentiate EGC and ESD indicators for each of the four dimensions.

Table 14 represents just a sample. Of course, there are numerous aspects omitted in this listing, but we have selected indicators for which a high value will reveal an effective and positive internalisation of EGC and ESD.

As mentioned, we think the final selection of indicators and strategies for implementation should be made by national governments, but the proposed indicators can be helpful for comparisons among countries and, particularly, to assess the development of EGC/ESD within a specific country. As with the two other target themes, our proposed indicators incorporate the equity dimension by attending to three variables: income, gender, and urban/rural.

Table 14. Potential Indicators to Monitor Knowledge, Skills, Values, and Attitudes (EGC and ESD)

Dimension	Indicator	Progress Measure	Equity Indicators	
Knowledge/ Skills	% of respondents with basic knowledge of political institutions (e.g., distinction between executive, legislative, and judiciary powers).	By 2030, countries should increase by XX% the proportion of children who have basic knowledge of political institutions and by XX% the proportion of children with precise knowledge about causes of environmental damage.	**Social**	Ratio between first and fifth quintile of SES: % of children who respond positively to basic knowledge of political institutions.
				Ratio between first and fifth quintile of SES: % of children with precise knowledge about causes of environmental damage.
	% of respondents that know specific causes of environmental damage (e.g., harmful gases, deforestation, specific industries, construction, agricultural policies).		**Gender**	Ratio between males and females: % of children who respond positively to basic knowledge of political institutions.
				Ratio between males and females: % of children with precise knowledge about causes of environmental damage.
			Location	Ratio between urban and rural: % of children who respond positively to basic knowledge of political institutions.
				Ratio between urban/rural: % of children with precise knowledge about causes of environmental damage.
Attitudes/ Values	% of respondents that respond positively to the question "All ethnic/racial groups should have equal chance to get good jobs."	By 2030, countries should increase by XX% the proportion of children who respond positively to the question "All ethnic/racial groups should equal chance to get good jobs" and by XX% the proportion of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."	**Social**	Ratio between first and fifth quintile of SES: % of respondents that respond positively to the question "All ethnic/racial groups should have equal chance to get good jobs."
				Ratio between first and fifth quintile of SES: % of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."
	% of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."		**Gender**	Ratio between males and females: % of respondents that respond positively to the question "All ethnic/racial groups should equal chance to get good jobs."
				Ratio between males and females: % of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."
			Location	Ratio between urban and rural: % of respondents that respond positively to the question "All ethnic/racial groups should equal chance to get good jobs."
				Ratio between urban and rural: % of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."

Dimension	Indicator	Progress Measure	Equity Indicators		
Intended Behavior	% of respondents that show some form of positive response to the question "If I see a racist attitude in the street I would…" (respond to the aggressor, denounce the aggressor, etc.).	By 2030, countries should increase by XX% the proportion of children that show some positive response to the question "If I see a racist attitude in the street I would…" and by XX% the proportion of children that respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	Social	Ratio between first and fifth quintile of SES: % of children who respond positively to the question "If I see a racist attitude in the street I would…"	
				Ratio between first and fifth quintile of SES: % of children who respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	
	% of respondents that respond positively to the question "I would never buy a product that is not environmentally friendly even if it is convenient for me."		Gender	Ratio between males and females: % of children who respond positively to the question "If I see a racist attitude in the street I would…"	
				Ratio between males and females: % of children who respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	
			Location	Ratio between urban and rural: % of children who respond positively to "If I see a racist attitude in the street I would…"	
				Ratio between urban and rural: % of children who respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	
Actual Behavior	% of respondents that have engaged in some form of political action during the last month (public demonstration, political association meetings, presentation of a collective appeal, etc.).	By 2030, countries should increase by XX% the proportion of children who have engaged in some form of political action during the last month and by XX% the proportion of children who have a pro-environmental behaviour in their everyday life.	Social	Ratio between first and fifth quintile of SES: % of children who have engaged in some form of political action during the last month.	
				Ratio between first and fifth quintile of SES: % of children that have a pro-environmental behaviour in their everyday life.	
			Gender	Ratio between males and females: % of children who have engaged in some form of political action during the last month.	
	% of respondents that have a pro-environmental behaviour in their everyday life (recycling, saving water, collecting garbage in a public space, have denounced anti-environmental behaviour).			Ratio between males and females % of children that have a pro-environmental behaviour in their everyday life.	
			Location	Ratio between urban and rural: % of children who have engaged in some form of political action during the last month.	
				Ratio between urban/rural: % of children that have a pro-environmental behaviour in their everyday life.	

Conclusions and Recommendations

The field of EGC and ESD is broad and complex and, as a consequence, difficult to frame and to measure. At the same time, it is a fundamental aspect for ensuring social inclusion, social cohesion, global democracy, and global development. In fact, one of the main critiques to international standardised testing is precisely the lack of evaluation of non-instrumental objectives of education, which could be comprised in what is understood as EGC/ESD. Thus, including some form of evaluation of how effective governments are in EGC/ESD is a way to compensate for the usual reduction of learning and competencies to the instrumental domain.

Living in today's world requires a set of social competencies that are key for both individual and collective development. The nature and the type of competencies that should be included here are extensive and difficult to frame. In the context of the post-2015 debate, it is an extremely difficult task to reduce this wide field to three or four main indicators. Our proposal has put special emphasis on the distinction of levels or dimensions of acquisition of EGC/ESD, around the axes of knowledge/skills, values/attitudes, and behaviours. This distinction provides an understanding of EGC/ESD that goes beyond school curricula and focuses not only on the acquisition of competencies but also on their realisation in everyday practices. Choosing one indicator or the other is of course a complex and difficult task. There are conservative and progressive forms of understanding political participation, tolerance, rights, and duties, or forms of protest and claiming. Sharing a common ground on what member states understand citizenship to mean is an unavoidable task if EGC/ESD is to be measured. Otherwise, the risk of measuring different things or different attitudes labelled as citizenship is too high.

International data sources are mostly available for developed countries. At the same time, existing surveys are designed to measure things of a more and less different nature. Moreover, the interpretation of a significant number of the existing questions is already subjected to different political lenses and exposed to discussion. On the other hand, pretending that all governments will set up their own systems of measuring EGC/ESD would not only generate problems of comparability but would multiply the number of forms in which EGC/ESD is conceptualised. Thus, an international survey focusing on post-2015 indicators would facilitate the consistence and comparability of data, particularly in the field of EGC/ESD.

Finally, we have justified the need to measure and evaluate social, sexual, territorial, or cultural differences in the internalisation of EGC/ESD. EGC and ESD cover a number of social, political, and scientific competencies that are fundamental assets in today's world and can even be understood as new forms of literacy. Knowing the social distribution of opportunities for accessing these competencies is a fundamental aspect of social efficiency and social justice.

TEACHERS AND SAFE, INCLUSIVE, AND EFFECTIVE LEARNING ENVIRONMENTS

EFA TARGET 6:

By 2030, all governments ensure that all learners are taught by qualified, professionally-trained, motivated and well supported teachers.

OWG TARGET 4.C:

By 2030, increase by x% the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially LDCs and SIDS.

OWG TARGET 4.A:

Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

Targets in Comparison

Table 15. Breakdown of EFA and OWG Targets Concerning Teachers and Learning Environments

	EFA Target	OWG Targets
Stated objectives	• All teachers should be qualified, professionally-trained, motivated and well supported	• Increase by x% the supply of qualified teachers • Promote safe, non-violent, inclusive and effective
Main concepts and variables	• Qualified teacher • Professionally-trained teacher • Motivated teacher • Well-supported teacher	• Qualified teacher • Safe learning environment • Inclusive learning environment • Effective learning environment
Equity insights	Strong equity perspective: "all learners" should benefit from high quality teachers	Equity emphasis is omitted
Teacher population	All teachers	% Not specified yet
Education levels involved	Not specified	Not specified

Source: Authors

The main observations coming out of the comparison between the EFA and the OWG targets are:

- The OWG 4.c target is apparently less ambitious than the EFA target concerning the supply of qualified teachers, although this will not be the case if the percentage (x) included in the OWG target ends up being 100%.

- In any case, the EFA SC target is more ambitious than the OWG one in the sense that it does not only refer to the supply of "qualified teachers," but also to "professionally trained," "motivated," and "well supported" teachers. The latter are variables that, despite their importance, are more subjective in nature (especially the one on teachers' motivation) and, accordingly, the latter are more difficult to measure.

- Nonetheless, OWG target 4.a introduces the importance of "Safe, Inclusive & Effective Learning Environments" into the agenda, which, to a great extent, speaks to the conditions for teachers to develop their work in a professional and well-supported way. From this point of view, target 4.a would compensate some of the absences in target 4.c.

- At the same time, the OWG brings international cooperation into the teacher training agenda. It is awkward that international cooperation is brought into this target specifically, and not in others. There is the risk that this could mean that the controversial "Teach for All" programme is contemplated as part of the efforts to achieve this target.

Conceptual Framework: Professionalization and Motivation of Teachers

The teacher profession is currently facing a range of important challenges globally. To start with, over 1.6 million teachers are needed to achieve universal primary education, and 5.1 million additional teachers are needed to achieve lower secondary education by 2030 (UNESCO, 2014). To meet such teacher shortages, many governments have promoted or allowed the recruitment of unqualified and underqualified teachers in different regions. "Contract teachers" and/or "parateachers" tend to have much poorer working conditions than regular teachers. This de-professionalization process has been more acute in rural and poor urban areas, and has affected female teachers more than to male teachers. In some regions this phenomenon has evolved in parallel to the emergence of so-called low-fee private schools (Srivastava, 2013).

The casualization of the teaching profession has also been the consequence of the introduction of managerial policies such as merit-based pay, standardized evaluation, and accountability mechanisms that promote competition between teachers and schools (Verger & Altinyelken, 2014). Managerial policies are globalizing despite the fact that there is not conclusive evidence that they promote better education results. On the contrary, it has been observed that these policies often undermine cooperation and teachers' autonomy, and promote practices of screening for the best students and the adoption of other instrumental educational strategies such as "teaching to the test" (Day, 2002; UNESCO, 2014; Volante, 2004).

Paradoxically, the casualization of the teacher profession is evolving at a time when teachers are held increasingly responsible for many of the problems that educational systems face. Overall, the international development community is paying increasing attention to the key role that teachers play in the provision of quality education for all (Leu, 2005). To illustrate the growing power attributed to teachers' agency today, the UNESCO *Global monitoring report 2005* considers teachers "the strongest influence on learning" (p. 18),

and the 2007 McKinsey report emphasises, "the only way to improve outcomes is to improve instruction" and "the quality of an education system cannot exceed the quality of its teachers."[6]

Similar ideas on the role of teachers are becoming central in both Southern and Northern countries' education debates. In the U.S. in the last decade there has been a strong political campaign to make teachers more responsible for the education problems of the country. According to the National Commission on Teaching and America's Future, "what teachers know and can do is the most important influence on what students learn" (1996, p. 10). In fact, the role of teachers is expected to determine students' achievement independently of whether they operate in socially unfavourable contexts. Conservative groups, under the George W. Bush presidency and the No-Child-Left-Behind reform, famously coined the expression "no excuses" to maintain that "all children can attain academic proficiency without regard to poverty, disability, or other conditions, and that someone must be held accountable if they do not." According to these education reformers, this "someone" is, of course, the teachers.[7]

Carnoy et al. (2009, p. 47) state that "societies that seriously want to improve their students' performance in school must improve the quality of teachers in schools." However, acknowledging that teachers make a difference is far from saying that teachers determine students' learning or that the socio-economic contexts in which teachers operate should be underestimated in our analysis of learning outcomes. In fact the argument expressed in the "no excuses" campaign challenges decades of social sciences research in education in industrialised countries that points out the complex and influential relationship between socio-economic and other environmental variables (such as school composition, urban and school segregation, socio-economic status, parents' cultural capital, low expectations of disadvantaged students, etc.) and teaching-learning processes taking place at the school level (Montt, 2011; Nye, Konstantopoulos, & Hedges, 2004; Sirin, 2005).

Some even challenge the most recent results of PISA that directly relate the levels of learning to countries' levels of education equity (OECD, 2010). What social sciences research and, more recently, OECD/PISA shows is that, if education quality or learning outcomes are to be improved, society needs to address equity between and within schools, as well as the social, economic, and cultural conditionings that affect student learning. Unfortunately, managerial educational reformers tend to omit these elements when prescribing specific policy tools in attempts to improve student learning (Verger & Bonal, 2012).

That being said, ideas such as those quoted above could be welcomed by teachers as they make teachers more visible and place them at the centre of the education debate. However, as outlined below, these reforms also make teachers more vulnerable and attribute more responsibilities to them, which are not always in teachers' best interest (Klees, 2008; Tatto, 2009).

Against this reality, the global education agenda represented by both the EFA and the OWG is important in the sense that it advocates advancing the level of teachers' professionalization in most countries. The

6. See http://mckinseyonsociety.com/how-the-worlds-best-performing-schools-come-out-on-top/

7. See http://www.nybooks.com/articles/archives/2012/mar/08/schools-we-can-envy/?pagination=false

teachers' professionalization agenda (in contrast to managerialist or deregulation approaches to teachers' work) emphasizes the quality of pre-service and in-service training, more demanding selection processes for teachers to enter the education system, and promoting teachers' welfare and minimum labour standards (Cochran-Smith, 2001; Schleicher, 2011; Zeichner, 2003). From this perspective, teacher training should occur in highly qualified institutions, preferably universities, and be well articulated with in-service training programmes. Mentorship for teachers in their first years at school is also considered a good practice to develop good quality teachers (Hargreaves & Fullan, 2000; Lewin, 2004).

Furthermore, the professionalizing approach to teaching also suggests that teachers should do their work in well-resourced schools (in terms of both school facilities and educational resources) with a teacher/students ratio that permits more individualized education and attention to students. Provision of school spaces for teamwork and stimulating teachers' exchange of ideas and creativity is also considered to be a factor that promotes educational quality and understanding of teaching as a profession (OECD, 2004).

In many developing countries, education policy interventions that aim to professionalize teaching start by establishing fully functioning schools in the sense of having schools with a dignified infrastructure (i.e., quality roofing, walls, floors, toilets, etc.), classrooms equipped with desks, tables, and chairs, and a complete library. According to a systematic review conducted by Glewwe et al. (2014), these material elements are highly conducive to students' learning. On the teaching side, according to these same authors, the most important determinants of learning are "having teachers with greater knowledge of the subjects they teach, having a longer school day, and providing tutoring [extra support to the students with learning difficulties]" (p. 47). In low income countries, international and national efforts should thus focus on developing the teaching profession and the school infrastructure (including the construction of sufficient schools to provide a full school day for all children).

Teachers' "motivation" is probably the most slippery concept in the existing EFA targets. The concept of teachers' motivation is not easy to delimitate and is usually confused with other concepts such as teachers' morale and job satisfaction. Furthermore, teachers' motivation has individual or intrinsic connotations that are not easy to address from public policy interventions. Nonetheless, recent research has reflected on the determinants of teachers' motivation (and demotivation), and findings indicate that many of these determinants have an extrinsic nature and can be directly altered via education policy interventions.

To start with, **it is important that teachers receive a decent salary (at least twice the minimum wage) paid on time** (UNESCO, 2014). Beyond considerations of teachers' welfare and status, such a policy reduces the chance that teachers have to resort to secondary employment activities, which usually have a demotivating effect (Bennell, 2004) and/or are correlated with higher levels of teachers absenteeism and turnover (Habib, 2010).

To some extent, there is more evidence on the determinants of teachers' demotivation and attrition than on the determinants of teachers' motivation. Apart from the salary issue just mentioned, according to Bennell (2004), "increasing hours of work, larger class sizes, more subjects, and constantly changing curricula are cited as major de-motivators in many countries" (p. 12). High students/teacher ratios and intensive workloads (without sufficient time to prepare classes or meet with colleagues) demotivate teachers and

also make it incredibly difficult for teachers to introduce innovative methodologies or promote participation and other practices associated with notions of quality education.

The UNESCO General Education System Quality Analysis/Diagnosis Framework argues that, to work in an effective and stimulating learning environment, teachers should enjoy sufficient preparation hours, collegial work, facilities, and manageable class sizes (UNESCO, 2012). From this point of view, teachers' participation in the definition of the educational project (as well as in aspects of school organization) is also important. It has been observed, in fact, that one of the main sources of teachers' demotivation is working in an authoritarian environment and not having a say within the school context (Bennell, 2004; Guajardo, 2011).

In the U.S., Loeb, Darling-Hammond, and Luczak (2005) similarly found that "high levels of school turnover are strongly affected by poor working conditions [i.e. including large class sizes, facilities problems, multitrack schools, and lack of textbooks] and low salaries, as well as by student characteristics." The last factor, which is not so often highlighted in relation to low income countries, means that teachers tend to be more dissatisfied and demotivated when placed in socially segregated schools where the children are more difficult to teach and tend to present more behavioural and disciplinary problems than average. The most direct policy implication of this finding is that teachers- sensitive education policies should promote a more balanced distribution of students among schools according to socio-economic background and special education needs. This observation, in fact, is coherent with the OWG target that advocates the promotion of inclusive learning environments as something that is an inseparable aspect of effective and quality education.

Overall, the idea of teachers' motivation, as framed here on the basis of recent research, is very much embedded within the teachers' professionalization agenda. Furthermore, both the motivation and professionalization ideas are consistent with the policy recommendations arising from emblematic texts such as the *Recommendation concerning the status of teachers* (ILO/UNESCO, 1966) and recent international reports such as the 2014 EFA Global Monitoring Report (dedicated to the theme of Teaching and Learning), UNESCO's *Methodological guide* for the analysis of teacher issues (2010a), and the OECD's Teaching and Learning International Survey (2014).

Data Sources

To facilitate the analysis of existing data with thought to the formulation of new indicators, we will cluster the variables we need into four main categories:

   a. Qualified/professionally trained teachers ("Qualified")
   b. Motivated teachers ("Motivated")
   c. Well supported teachers working in an effective learning environment (Well supported")
   d. Safe and inclusive schools ("Safe/inclusive")

Table 16 shows how and to what extent the most well established international educational databases collect data in relation to each of these dimensions.

Table 16. Existing Data Sources Related to Teachers and School Environment

| | DOMAIN | | | |
SOURCE	Qualified	Motivated	Well-Supported	Safe/Inclusive
UNESCO Institute for Statistics (indicators)	Percentage of trained teachers by teaching level of education (pre-primary, primary, lower secondary, upper secondary, tertiary) and gender (male, female, gender parity index) Ratio of teacher training graduates to teachers in service (primary/ lower-secondary/ upper-secondary education) and by sex *[Africa data-base only]*	Teacher attrition rate from public primary education (both sexes/male/female) (primary, lower secondary, upper secondary) *[Africa data-base only]*	Pupil-teacher ratio by level of education (pre-primary, primary, lower secondary, upper secondary, tertiary) Average number of pupils per reading/ math textbook in primary education and per grade (1 to 7) *[Africa data-base only]*	Percentage of primary/lower secondary schools with electricity, potable water, single-sex toilets *[Africa data-base only]*
OECD Education at a Glance (indicators)		Annual statutory teacher salaries in public institutions (pre-primary, primary, lower secondary, upper secondary) (starting salary, 10 years of experience, 15 years, top of scale)		
OECD TALIS (components)	Teachers' educational attainment Professional development activities	Job satisfaction Employment status Teachers' working hours, both in classroom and out of the classroom	School climate, leadership/ management style Teachers' induction and mentoring Teachers' feedback	Students' characteristics
WHO Global School-based Student Health Survey (components)				Kind/helpful attitudes of peer students

Source: Authors

The UIS contains significant data on teachers and school learning environments. Despite important gaps in time series and countries, this database has broad international coverage. Nonetheless, Table 16 highlights the fact that, in relation to many of the indicators relevant for the teacher-related targets, there is only data available for the African continent. According to internal sources, the UIS is developing a new package on teachers for the Education Management Information System (EMIS), which makes us think that data on some new teacher-related components will become available soon. However, we do not know yet what specific questions and indicators will be included in the new UIS package.

The OECD Education at a Glance database contains information on teachers' salaries, but this data is only available for the OECD's 34 member countries and 10 partner countries.

The Teaching and Learning International Survey (TALIS) is an OECD programme that focuses on the learning environment and on the working conditions of teachers. The first TALIS report was released in 2008, the second in 2014. Since 2014, TALIS has covered both primary and secondary education. The next TALIS report will be released in 2018. TALIS provides data concerning teachers that are more subjective in nature, and related to real school practices that are absent in broader international databases. They include components such as teachers' motivation, leadership, and school climate, among others. In fact, TALIS collects a type of data that cannot be filled directly by governments in the EMIS. The main shortcoming of this initiative is that, to date, only 34 countries—most from the North—participate.

The WHO Global School-based Student Health Survey (GSHS) "is a collaborative surveillance project designed to help countries measure and assess the behavioural risk factors and protective factors in 10 key areas among young people aged 13 to 17 years." The GSHS project was initiated in the year 2003 and currently covers 72 countries. The survey is supplied in the school context but refers to school-related matters only marginally. Only one question in the GSHS could be directly related to aspects of the school environment being safe/inclusive.[8]

Analysis of Current Indicators

The indicators on teachers included in the document *Towards indicators for a post-2015 education framework* are strongly challenged and criticized by the EFA Technical Advisory Group itself. None of the proposed indicators on teachers and school environment deserves a green light according to the TAG. This means that the indicators put forward on this topic do not align with the variable in question sufficiently and/or there is not sufficient available data to test progress against these indicators internationally. Tables 17 and 18 reproduce the TAG's analyses of these limitations.

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8. The question is: "During the past 30 days, how often were most of the students in your school kind and helpful?" See http://www.who.int/chp/gshs/GSHS_Core_Modules_2013_English.pdf?ua=1

Table 17. TAG-EFA Indicators Related to the Teacher Targets

	INDICATOR	ALIGNMENT WITH CONCEPT	DATA AVAILABILITY
	Qualified teachers		
YELLOW	Percentage of teachers qualified according to national standards (by level)	Moderate to high: Concept is very well-aligned but cross-national comparisons can be weak as national standards can vary widely between countries.	Not currently at the international level. Countries to report on the number of qualified teachers by sex and level of teaching on an annual basis from 2014.
YELLOW	Pupil-qualified teacher ratio	Moderate: Indicator measures the availability of (qualified) teacher to learners but does not assess the quality of teaching delivered.	PQTR is not available currently at the international level. Administrative data on teachers and pupils by level of education are reported annually by countries to the UIS. Countries report numbers of qualified teachers by sex and level of teaching on an annual basis from 2014.
	Professionally-trained teachers		
YELLOW	Percentage of teachers trained according to national standards (by level)	Moderate to high: Concept is very well-aligned but cross-national comparisons can be weak as national standards can vary widely between countries.	The indicators are available for ca. 105 countries at the primary level and ca. 50 countries at the upper secondary level. Administrative data on trained teachers by level of education (pre-primary to post-secondary non-tertiary) are reported annually by countries to the UIS.
YELLOW	Pupil-trained teacher ratio	Moderate: Indicator measures the availability of trained teacher to learners but does not assess the quality of teaching delivered.	Not currently at the international level but can be calculated from the reported data. Administrative data on pupils and trained teachers by level of education (pre-primary to post-secondary non-tertiary) are reported annually by countries to the UIS.
	Motivated teachers		
RED	Average teacher salary relative to other professionals	Low: The financial return is one element of teacher motivation but does not guarantee motivated teachers.	Not currently at the international level. Data on actual salaries of teachers and other professionals are not readily available. Indicators comparing two different professions will be affected by (a) differences in qualifications/experience required by each profession and (b) differences in typical working time or contract types. It may be necessary to limit the comparison to full-time staff only. Data on statutory salaries are easier to collect and compare, though it can be difficult to identify comparable professions which also have statutory salary scales. Teachers' statutory salaries can be standardised to some extent by expressing as a % of GDP per capita.
RED	Status of school climate and other learning environment factors associated with teacher motivation	Moderate to low	School climate and other learning environment factors associated with teacher motivation monitored by TALIS in 34 countries.
	Well-supported teachers		
RED	Incidence of in-service training	Moderate to low: Professional development could be considered one part of solution	Not currently at the international level.

Source: TAG of the EFA Steering Committee, 2014

Table 18. TAG-EFA Indicators Related to the School Environment

	INDICATOR	ALIGNMENT WITH CONCEPT	DATA AVAILABILITY
	Availability of education facilities and resources		
YELLOW	Average size of single grade classes in primary schools	Low/Moderate: The indicator not necessarily predictive of the overall quality of school environments.	Available for 26 African countries in the UIS database.
YELLOW	Access to basic services (electricity, potable water and toilets)	Moderate: Indicators measure the availability of facilities and services essential for healthy and effective learning environments.	Available for 41 African countries in the UIS database.
	Disability and gender sensitiveness, safety, inclusiveness and effectiveness		
YELLOW	Percentage of students with a sense of belonging and inclusion at school	Low/Moderate: Indicators address important aspects of school inclusiveness but not comprehensive.	Available for: 65 countries from PISA 2012. 72 countries from GSHS between 2003 and 2012. 43 countries in Europe and North America from HBSC in 2009/2010.
YELLOW	Percentage of students experiencing bullying	Low/Moderate: Indicators address important aspects of school inclusiveness but not comprehensive.	Available for: 72 countries from GSHS between 2003 and 2012. 43 countries in Europe and North America from HBSC in 2009/2010. Available for 16 countries in Latin American and the Caribbean that participated in SERCE in 2006/2007.
RED	Percentage of schools that meet child-friendly school standards: 1) inclusiveness of all children; 2) academically effective and relevant; 3) healthy, safe and protective; 4) gender-responsive; and 5) involved with students, families and communities	High: While the indicators cover all the key aspects of the target, what each dimension entails and encompasses may greatly vary from country to country and thus not be suitable for cross-country comparison.	No cross-nationally comparable data are available although at least 94 countries have adopted quality standards for primary education based on child-friendly schools (CFS) or on similar models.

Source: TAG of the EFA Steering Committee, 2014

The indicators proposed by the TAG use the concepts of "trained" and "qualified" teachers. We believe that is more appropriate to use the "qualified teachers" concept in the sense that it assumes that teachers have been trained, but also that the learning effects of the training have been officially tested and accordingly certified. Thus, the concept of qualified teachers incorporates the concept of trained teachers, but it goes further in the sense that teachers have also had to prove that they acquired the necessary knowledge and abilities to teach.

The teacher motivation concept is especially underdeveloped in the battery of indicators included in the TAG document. The only specific indicator included has a material base (teachers' salaries) and only covers that one particular aspect of the multiple factors that affect teachers' motivation. "School climate" is an

important factor of teacher motivation, but is not an indicator as such and needs to be unpacked and disaggregated in many other components.

In relation to child-friendly schools (CFS), it would be ideal if UNICEF had developed an index and measured it in multiple countries. What we have so far in the context of this programme is that countries may adopt quality standards according to the CFS model. However, the formal adoption of these standards does not mean that they are being applied in real situations.

The concept of inclusive schools is very much developed in terms of students' perceptions and experiences (sense of belonging). However, from existing academic literature we know that, to be inclusive, a school also needs to accept students coming from different social and national backgrounds. This dimension/meaning of school inclusiveness is essentially absent from the battery of indicators presented in the TAG document.

A final, related critique to the TAG's proposed indicators is that they do not include an explicit equity perspective. At most, the teacher-related indicators can be analyzed by sex in existing databases. However, the territorial and social class dimensions of teachers (and the students they teach) are rather absent from existing international education databases.

Proposed Indicators and Data Sources to Monitor Teachers and Learning Environments

Our proposal is structured on the basis of the domains specified above, with the equity dimension introduced in a crosscutting way. Of all the possible indicators, we included those that are more consistent with the key concepts and variables developed in our theoretical framework and the empirical evidence presented thus far.

Table 19. Proposed Indicators to Monitor Teachers and Learning Environments

Dimension	Indicator	Progress Measure	Equity Indicators	
Qualified and professionally trained teachers	% of qualified teachers	By 2030, all governments ensure that all learners are taught by qualified and professionally trained teachers	Social	% of qualified teachers according to students' first/fifth quintile ratio
				Students/qualified teachers ratio according to students' first/fifth quintile ratio
	Students/qualified teachers ratio		Gender	Male-female ratio: % of qualified teachers
				Students/qualified teachers ratio according to teachers' gender ratio
			Location	% of qualified teachers according to urban/rural ratio
				Students/qualified teachers ratio according to urban/rural ratio
Motivated teachers	Percentage of teachers with a salary that is double the minimum salary in the country*	By 2030, countries should increase in XX% the percentage of teachers with decent working conditions By 2030, countries should reduce in XX% the percentage of teachers' attrition	Social	According to student's first/fifth quintile ratio, % of teachers: • with a salary that is double the minimum salary in the country • whose salary is paid on time • with full-time contract • with a say on the goals/educational approach of the school Teacher attrition according to students' first/fifth quintile ratio
	Percentage of teachers whose salary is paid on time*		Gender	% of teachers: • with a salary that is double the minimum salary in the country • whose salary is paid on time • with full time contract • with a say on the goals/educational approach of the school according to teachers' gender ratio Teacher attrition according to teachers' gender ratio
	Percentage of teachers with full -time contract*			
	Teacher attrition		Location	According to urban/rural ratio, % of teachers: • with a salary that is double the minimum salary in the country • whose salary is paid on time • with full-time contract • with a say on the goals/educational approach of the school Teacher attrition according to urban/rural ratio
	Percentage of teachers with a say on the school goals and educational approach*			

Dimension	Indicator	Progress Measure	Equity Indicators	
Well supported teachers/ effective learning environments	Percentage of teachers that receive feedback*	By 2030, all governments ensure that all learners are taught by well supported teachers working in effective learning environments	Social	According to students' first/fifth quintile ratio, % of teachers that: • receive feedback • with a mentor • received in-service training in the last year • are allowed to be part of a union % of non-teaching working hours of teachers according to students' first/fifth quintile ratio % of schools with full school day according to students' first/fifth quintile ratio
	Percentage of new teachers with a mentor*		Gender	According to teachers' gender ratio, % of teachers that: • receive feedback • with a mentor • received in-service training in the last year • are allowed to be part of a union % of non-teaching working hours of teachers according to teachers' gender ratio % of schools with full school day according to teachers' gender ratio
	Percentage of non-teaching working hours*		Location	According to urban/rural ratio, % of teachers that: • receive feedback • with a mentor • received in-service training in the last year • are allowed to be part of a union % of non-teaching working hours of teachers according to urban/rural ratio % of schools with full school day according to urban/rural ratio
	Percentage of teachers that received in-service training in the last year*			
	Percentage of schools with full school day**			
	Percentage of teachers that are allowed to be part of a union*			
Safe/inclusive schools	Access to basic services index (electricity, water, and single-sex toilets)	By 2030, governments increase by XX% the percentage of teachers and learners that are in safe and inclusive schools	Social	% of schools with access to basic services (electricity, water, and single-sex toilets) according to students' first/fifth quintile ratio % of schools with more than 40% of children from the lowest quintile**
	Percentage of teachers experiencing situations of violence in the last year at the school*		Gender	- - -
	Percentage of children that have experienced kind/helpful attitudes of peer students in the last month		Location	% of schools with access to basic services (electricity, water, and single-sex toilets) according to urban/rural ratio

Source: Authors

* Data need to be developed via a survey
** Survey or available administrative databases

In relation to the first domain (qualified teachers), we have included the students/qualified teachers ratio indicator, which we consider to be especially powerful because it also informs about other components such as teachers' motivation and effective learning environments.

To develop equity measures relevant to most of the domains in Table 19, the suggested indicators can be crossed with variables such as the sex of teachers, the (urban/rural) location of the school, and the socio-economic background of students. However, in some cases, it could be interesting to refer also to the sex of the students; for instance, to find out whether girls have more or less qualified teachers in particular countries or particular types of schools.

PROPOSED DATA SOURCES

The necessary data to test progress against these indicators will come from existing databases such as the education database of the UIS (which will need to be expanded in relation to some aspects that are noted in the Table 19 by asterisks) and the previously described WHO Students' Health Survey indicator "Percentage of children that have experienced kind/helpful attitudes of peer students in the last month." Data on the socio-economic quintile of students is scarce in many countries. To address this data gap, it would be tremendously helpful if household surveys were to collect data on the schools children attend.

Nonetheless, most of the data we need will come from an international survey supplied to active teachers. The limitations of the existing data sources on teachers and school environment, as explained in this paper and as admitted by the TAG, justify the creation of this new instrument. The new survey instrument will replicate the rationale and part of the contents of TALIS, but should be administered on more regularly, every three years. The unit of analysis of the survey would be "teachers" instead of schools; this will help keep the size of the sample to a minimum. In most countries, a sample of around 1,000 teachers would be sufficient to have a moderately low margin of error. We also recommend that this new instrument is administered by a consortium formed by UNESCO and the OECD that contemplates the participation of civil society actors and especially teachers' unions representatives (see the last section of this report for more details).

Conclusions and Recommendations

In this section we reflected on the most appropriate measures for capturing prevailing levels of teachers' qualifications and motivation, and to what extent school environments are conducive to learning and to teachers' satisfaction with their work.

Both the EFA Steering Committee and the Sustainable Development Goals OWG highlight the importance teachers' qualification and training. We have argued that focusing on teachers' qualifications is more appropriate than just looking at the participation of teachers in training programmes, and have suggested indicators accordingly.

We have also unpacked, broken into different dimensions, and identified specific indicators for the slippery concept of teachers' motivation. We included indicators related to working conditions, including salaries (i.e., salary amount and whether salaries are paid on time) and the nature of the contract (full-time or

part-time), as well as the level of teacher attrition. We also included an indicator on teachers' participation at the school level (i.e., the percentage of teachers with a say on the school's goals and educational programming) because we have seen that working in a democratic school environment is highly motivating for many teachers.

The suggested indicators on "teachers' support" imply collecting information on the percentage of teachers that: receive feedback on their teaching practice, have a mentor in the early stages of their careers, have sufficient non-teaching hours to prepare classes and meet with colleagues, receive in-service training, teach in full-day schools, and are allowed to be part of a union.

Indicators on the safety and inclusiveness of schools have been also incorporated, including access to basic services, the level of violence at the school, and the level of school segregation.

A clear focus on equity was incorporated into these different groups of indicators, with a focus on urban/rural, sex, and social class. Finally, we would like to mention that we have not explicitly reflected on curriculum or classroom practices because these are context-sensitive issues that are not easy to measure globally and are not necessarily correlated with teachers' qualification and motivation, and we cover curricular and content issues in our analysis and proposals for Relevant Learning Outcomes and Knowledge, Skills, Values, and Attitudes (EGC and ESD).

CONCLUSIONS

In this report we have reviewed the three sets of targets that are most ambiguous and potentially controversial within the post-2015 education framework: Relevant Learning Outcomes; Knowledge, Skills, Values, and Attitudes (with a focus on EGC and ESD), and Teachers and Safe, Inclusive, and Effective Learning Environments. The ultimate objectives of the report are to inform current debates and discussions for the definition of the post-2015 education action framework, and to become a useful tool for civil society and governmental actors involved in these debates.

The document reviews the main conceptual debates and existing sources of data that relate to each of these three target themes. On the basis of this review process, we propose indicators that aim to advance a broad and bold global education action framework. The proposed indicators are grounded in theoretical notions of the main components and conditions that support **quality** education for all.

Until know, access has been at the centre of the global education agenda, and it should be high in the list of priorities of the post-2015 scenario. Access is a key condition for quality education, but it is not the only condition. In this report we have emphasised the importance of process and outputs indicators, to have a more comprehensive understanding of what quality education should be. We present equity as a cross-cutting element (to education access, processes, and outputs), that should be seen as inherent to

any notion of educational quality. In fact, equity needs to be seen as the main driver of education progress. Existing evidences makes clear that most education systems will only be able to improve their effectiveness if they reduce educational inequalities and strengthen educational processes for the most marginalised. Advancing teachers' professionalization is, in most countries, the most effective way to improve the quality of educational processes. Accordingly, we have proposed a group of indicators that fit within the teachers' professionalization agenda, but also indicators that begin to capture the more slippery notion of teacher motivation (which is a concept included in the post-2015 educational framework). Despite the fact that teachers' motivation has apparently individual and intrinsic connotations, we have shown that there is a lot that can be done from the perspective of public policy to create conditions wherein teachers are likely to be more motivated and satisfied with their job.

In relation to learning outcomes, we recommend continued focus on the measurement of competences in math and literacy, due to the universal nature of these two areas of knowledge. Focusing on only two areas of knowledge is one way to avoid the international standardization of school curricula as well as to save public resources that could be invested in other educational priorities. However, a broad and bold global education agenda must also include the measurement of learning outcomes in relation to competencies that are not necessarily so instrumental, and that reflect on the strong link between education and sustainable attitudes and behaviours. Accordingly, we included a group of indicators that are related to the global target on students' knowledge and attitudes toward global citizenship, democracy, and sustainable development. Indicators on this matter also follow the principle of simplicity to facilitate the monitoring of the agreed international goals while avoiding the promotion of new requirements of assessment that will overshadow other countries' education policy priorities.

New sources of evidence are necessary to enable the monitoring of such a new and ambitious educational agenda. The development of the UIS database and of other administrative databases at the country level will be extremely helpful for this purpose. Nonetheless, the data that will be necessary to monitor progress toward many of the proposed indicators will require new instruments and an alternative data collection strategy connected directly to key education actors at the local level, including teachers, students, and principals. In the following section we detail how this new instrument might look.

Towards an Education for All Survey

One of the main contributions of the new target proposals for 2015-2030 is the inclusion of new educational dimensions that were not monitored within the Education for All framework. The three new targets reviewed in this report represent a particularly big challenge for global monitoring. One overall conclusion is that new, relevant, and comparable data and statistics are needed to ensure the reliable monitoring of the post-2015 targets. Some of the new data could be obtained by strengthening and widening the current data collection processes led by the UIS, but new instruments must also be created and implemented to provide governments and the international community with the appropriate information.

The authors of this report see as necessary the creation of a new and specific instrument to monitor progress towards the post-2015 targets at the global level. Specifically, we argue that a survey would be the

most appropriate tool to monitor the new global education framework and overcome some of the known problems with current data sources. The following features should be included in this survey:

Assessment and survey purposes. Learning, global citizenship, and education for sustainable development could be assessed using a survey. A survey approach is also appropriate to collect data about the targets and indicators related to teachers and learning environments.

School and household based. High numbers of students out of school and high dropout rates in many countries make it necessary to combine both a school and a household approach, particularly in the case of learning outcomes, EGC, and ESD. The hybrid assessments reviewed in this report (EGRA, Uwezo, and ASER) show the possibilities of a household approach for assessing the competences of children not attending school. Combining a school and a household approach would raise the potential of the survey to obtain data from children out of school and children enrolled in the education system, as well as detailed information about learning environments and teachers.

Age cohort. For global monitoring purposes, an age cohort assessment instead of a school year population sample is more appropriate to avoid possible biases related to retention or early tracking.

Sample based. The assessment and survey of a sample of children and schools would be sufficient to obtain quality data and information at the country level. This approach reduces costs and substantially simplifies the application of the assessment and the survey. For sample design purposes, good administrative data about the population (census), schools, and teachers working in the country is needed, but it can then be improved with minimal technical effort.

Gathering information to measure equity. It is important to collect information about the socioeconomic background of children, teachers, and schools through a specific context questionnaire that can be administered simultaneously with the assessment and the survey.

Monitoring and diagnostic purposes. The main objective of this new measurement instrument is to provide data for the monitoring of new education targets. Though this tool could and should also be used by national governments, civil society organizations, and other educational stakeholders to better understand national educational systems and to propose/advocate policy solutions accordingly. Avoid the construction of hierarchies. The design of the instrument and the way results are published should avoid the creation of country rankings and other forms of hierarchies.

Periodicity. Although the monitoring of educational progress requires up-to-date data, it is not necessary to collect this type of information on an annual basis. Our proposal is to administer the assessment and the survey in rounds of three years. In this way, the assessment and the survey can be carried out for a group of countries annually; this means that every three years, information for all the countries monitored by the post-2015 framework would be available.

Adaptability to the national needs. Although it is necessary to establish a general assessment framework for comparability purposes, the evaluation design could be adapted to specific national needs. In this way,

each country would have the capacity to include specific assessment topics to collect information relevant for the national context.

Shared and global governance. The good governance and management of any survey and assessment is essential to ensure that the expected objectives and purposes are met. Due to the involvement of such a large number of countries in this data collection process, shared governance of the management of this new instrument will be necessary to ensure its success. At the same time, the management of an instrument to monitor the progress of global education targets is a source of international influence. For these reasons, management and leadership of the new assessment and survey should come from an international organization with a legitimate educational mandate, such as UNESCO.

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Table A1. Proposed Indicators to Monitor Learning Outcomes

Dimension	Indicator	Progress measures	Equity Indicators	
Reading	Percentage of children who achieve minimum proficiency standards in reading at ages 12 and 15.	By 2030, countries should increase by XX% the children who achieve minimum proficiency standards in reading at ages 12 and 15.	Social	Ratio between first and fifth quintile of SES: % of children who achieve minimum proficiency standards in reading at ages 12 and 15.
			Gender	Ratio between males and females: % of children who achieve minimum proficiency standards in reading at ages 12 and 15.
			Location	Ratio between urban and rural: % of children who achieve minimum proficiency standards in reading at ages 12 and 15.
Mathematics	Percentage of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.	By 2030, countries should increase by XX% the children who achieve minimum proficiency standards in mathematics at ages 12 and 15.	Social	Ratio between first and fifth quintile of SES: % of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.
			Gender	Ratio between males and females: % of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.
			Location	Ratio between urban and rural: % of children who achieve minimum proficiency standards in mathematics at ages 12 and 15.

Table A2. Proposed Indicators to Monitor Knowledge, Skills, Values, and Attitudes (EGC and ESD)

POTENTIAL EGC AND ESD INDICATORS

Dimension	Indicator	Progress Measure	Equity Indicators		
Knowledge/ Skills	% of respondents with basic knowledge of political institutions (e.g., distinction between executive, legislative, and judiciary powers).	By 2030, countries should increase by XX% the proportion of children who have basic knowledge of political institutions and by XX% the proportion of children with precise knowledge about causes of environmental damage.	Social	Ratio between first and fifth quintile of SES: % of children who respond positively to basic knowledge of political institutions.	
				Ratio between first and fifth quintile of SES: % of children with precise knowledge about causes of environmental damage.	
	% of respondents that know specific causes of environmental damage (e.g., harmful gases, deforestation, specific industries, construction, agricultural policies).		Gender	Ratio between males and females: % of children who respond positively to basic knowledge of political institutions.	
				Ratio between males and females: % of children with precise knowledge about causes of environmental damage.	
			Location	Ratio between urban and rural: % of children who respond positively to basic knowledge of political institutions.	
				Ratio between urban/rural: % of children with precise knowledge about causes of environmental damage.	
Attitudes/ Values	% of respondents that respond positively to the question "All ethnic/racial groups should have equal chance to get good jobs."	By 2030, countries should increase by XX% the proportion of children who respond positively to the question "All ethnic/racial groups should equal chance to get good jobs" and by XX% the proportion of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."	Social	Ratio between first and fifth quintile of SES: % of respondents that respond positively to the question "All ethnic/racial groups should have equal chance to get good jobs."	
				Ratio between first and fifth quintile of SES: % of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."	
	% of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."		Gender	Ratio between males and females: % of respondents that respond positively to the question "All ethnic/racial groups should equal chance to get good jobs."	
				Ratio between males and females: % of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."	
			Location	Ratio between urban and rural: % of respondents that respond positively to the question "All ethnic/racial groups should equal chance to get good jobs."	
				Ratio between urban and rural: % of respondents that respond positively to the question "The government should increase sanctions for those organizations and individuals that cause some form of environmental damage."	

Dimension	Indicator	Progress Measure	Equity Indicators		
Intended Behavior	% of respondents that show some form of positive response to the question "If I see a racist attitude in the street I would…" (respond to the aggressor, denounce the aggressor, etc.).	By 2030, countries should increase by XX% the proportion of children that show some positive response to the question "If I see a racist attitude in the street I would…" and by XX% the proportion of children that respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	Social	Ratio between first and fifth quintile of SES: % of children who respond positively to the question "If I see a racist attitude in the street I would…"	
				Ratio between first and fifth quintile of SES: % of children who respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	
	% of respondents that respond positively to the question "I would never buy a product that is not environmentally friendly even if it is convenient for me."		Gender	Ratio between males and females: % of children who respond positively to the question "If I see a racist attitude in the street I would…"	
				Ratio between males and females: % of children who respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	
			Location	Ratio between urban and rural: % of children who respond positively to "If I see a racist attitude in the street I would…"	
				Ratio between urban and rural: % of children who respond positively to the question "I would never buy a product that is not environmental friendly even if it is convenient for me."	
Actual Behavior	% of respondents that have engaged in some form of political action during the last month (public demonstration, political association meetings, presentation of a collective appeal, etc.).	By 2030, countries should increase by XX% the proportion of children who have engaged in some form of political action during the last month and by XX% the proportion of children who have a pro-environmental behaviour in their everyday life.	Social	Ratio between first and fifth quintile of SES: % of children who have engaged in some form of political action during the last month.	
				Ratio between first and fifth quintile of SES: % of children that have a pro-environmental behaviour in their everyday life.	
			Gender	Ratio between males and females: % of children who have engaged in some form of political action during the last month.	
	% of respondents that have a pro-environmental behaviour in their everyday life (recycling, saving water, collecting garbage in a public space, have denounced anti-environmental behaviour).			Ratio between males and females % of children that have a pro-environmental behaviour in their everyday life.	
			Location	Ratio between urban and rural: % of children who have engaged in some form of political action during the last month.	
				Ratio between urban/rural: % of children that have a pro-environmental behaviour in their everyday life.	

Table A3. Proposed Indicators to Monitor Teachers and Learning Environments

Dimension	Indicator	Progress Measure	Equity Indicators	
Qualified and professionally trained teachers	% of qualified teachers	By 2030, all governments ensure that all learners are taught by qualified and professionally trained teachers	Social	% of qualified teachers according to students' first/fifth quintile ratio
				Students/qualified teachers ratio according to students' first/fifth quintile ratio
	Students/qualified teachers ratio		Gender	Male-female ratio: % of qualified teachers
				Students/qualified teachers ratio according to teachers' gender ratio
			Location	% of qualified teachers according to urban/rural ratio
				Students/qualified teachers ratio according to urban/rural ratio
Motivated teachers	Percentage of teachers with a salary that is double the minimum salary in the country*	By 2030, countries should increase in XX% the percentage of teachers with decent working conditions By 2030, countries should reduce in XX% the percentage of teachers' attrition	Social	According to student's first/fifth quintile ratio, % of teachers: • with a salary that is double the minimum salary in the country • whose salary is paid on time • with full-time contract • with a say on the goals/educational approach of the school Teacher attrition according to students' first/fifth quintile ratio
	Percentage of teachers whose salary is paid on time*		Gender	% of teachers: • with a salary that is double the minimum salary in the country • whose salary is paid on time • with full time contract • with a say on the goals/educational approach of the school according to teachers' gender ratio Teacher attrition according to teachers' gender ratio
	Percentage of teachers with full -time contract* Teacher attrition Percentage of teachers with a say on the school goals and educational approach*		Location	According to urban/rural ratio, % of teachers: • with a salary that is double the minimum salary in the country • whose salary is paid on time • with full-time contract • with a say on the goals/educational approach of the school Teacher attrition according to urban/rural ratio

Dimension	Indicator	Progress Measure	Equity Indicators	
Well supported teachers/ effective learning environments	Percentage of teachers that receive feedback*	By 2030, all governments ensure that all learners are taught by well supported teachers working in effective learning environments	Social	According to students' first/fifth quintile ratio, % of teachers that: • receive feedback • with a mentor • received in-service training in the last year • are allowed to be part of a union % of non-teaching working hours of teachers according to students' first/fifth quintile ratio % of schools with full school day according to students' first/fifth quintile ratio
	Percentage of new teachers with a mentor*		Gender	According to teachers' gender ratio, % of teachers that: • receive feedback • with a mentor • received in-service training in the last year • are allowed to be part of a union % of non-teaching working hours of teachers according to teachers' gender ratio % of schools with full school day according to teachers' gender ratio
	Percentage of non-teaching working hours* Percentage of teachers that received in-service training in the last year* Percentage of schools with full school day** Percentage of teachers that are allowed to be part of a union*		Location	According to urban/rural ratio, % of teachers that: • receive feedback • with a mentor • received in-service training in the last year • are allowed to be part of a union % of non-teaching working hours of teachers according to urban/rural ratio % of schools with full school day according to urban/rural ratio
Safe/inclusive schools	Access to basic services index (electricity, water, and single-sex toilets)	By 2030, governments increase by XX% the percentage of teachers and learners that are in safe and inclusive schools	Social	% of schools with access to basic services (electricity, water, and single-sex toilets) according to students' first/fifth quintile ratio % of schools with more than 40% of children from the lowest quintile**
	Percentage of teachers experiencing situations of violence in the last year at the school*		Gender	- - -
	Percentage of children that have experienced kind/helpful attitudes of peer students in the last month		Location	% of schools with access to basic services (electricity, water, and single-sex toilets) according to urban/rural ratio

Source: Authors

* Data need to be developed via a survey
** Survey or available administrative databases