Monitoring Progress Towards SDG Target 4.7 in Europe: Proposed Framework and Tools

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Abstract

Tracking progress toward the achievement of Sustainable Development Goals (SDGs) needs to be underpinned using effectiveness, efficiency, evidence, and universality as the guiding principles. Therefore, at the very least, approaches to monitoring progress need to be placed within a participatory framework in which all stakeholders and related groups (e.g., civil society, business, parliament, academia, and government) recognise the importance of their shared responsibility in achieving the SDGs. Available data advocate for a multi-tiered, multi-purpose framework comprised of four monitoring levels: national, regional, global, and thematic. However, this excludes an important and arguably the most strategic level, namely, monitoring at the local level that can be leveraged to make tracking progress smarter and more meaningful.

SDG 4 data focus on learning outcomes. The data are generally centred around formal learning assessments. In our second paper in this series on 'Using Learning Assessment Data to Monitor Progress for Target 4.7', we argued that learning, both non-formal and informal, is the core driver and consistent thread that buttresses human development in all societies. We therefore recognise Target 4.7 as being the 'enabler' for the achievement of all SDGs.

Formal learning relies on systematic methodology (i.e., pedagogy) that involves gradually increasing intellectual demands, eventually leading to the development of higher-order thinking skills (Schmelkes, 2018).

However, effective learning needs to balance concepts, skills, and meta-cognitive competencies to make non-formal and informal learning more meaningful and relevant (Schneider and Stern, 2010). Curricula and pedagogy should inevitably reflect particular combinations of local perceptions, assumptions, and aspirations (Woodhead, 2006). In our proposed framework to monitor progress for Target 4.7, our argument is to transpose this across the non-formal and informal learning sectors.

We suggest that to monitor progress in a way that reflects reality, indicators for provision and learning outcomes in education for sustainable development (ESD) and global citizenship education (GCE) should largely be developed locally, especially in light of the 'local' definitions and interpretation of what constitutes ESD and GCE. From various definitions by proponents of ESD and GCE, we recognise three key conceptual dimensions in them, namely, cognitive, socioemotional, and behavioural. We propose that these form the basis of the competencies to be used to measure progress in achieving Target 4.7. Using the values-based approach to indicator development, this ensures that indicators are developed based on context and on the specific learning goals of the respective education system.

Introduction

This paper proposes a methodology to capture and measure progress toward achieving SDG Target 4.7 and suggests a framework and tools for reporting.

The 2030 Agenda makes countries responsible for the tasks of reporting new indicators for their SDGs. These were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity [1]. The SDGs represent the first explicit acknowledgement—at the level of global goals—of the interconnectedness of challenges surrounding sustainability and the corresponding need for integrated problem-solving (United Nations, 2015). In practice, this highlights the importance of promoting sustainable development, sustainable lifestyles, human rights, gender equity, promotion of peace and non-violence, and appreciation of cultural diversity.

The SDGs include a broad education goal known as SDG 4 that is aimed at 'inclusive and equitable quality education and lifelong learning opportunities for all' by 2030. The Education 2030 Framework for Action states that quality education 'develops the skills, attitudes, and values that enable citizens to lead healthy and fulfilled lives, make informed decisions, and respond to local and global challenges through education for sustainable development (ESD) and global citizenship education (GCE)'.

The Education 2030 Framework for Action means that countries need to collect new data that may, at the very least, require new approaches or additional collection. The ability for countries to comply depends primarily on capacity, political will, and available resources.

In practice, this will involve effective partnerships between countries in regional bodies, ministries, government departments, and organisations working in the field of education because reporting will require alignment with global guidelines. The European Union has responded to this through the development of the EU SDG Indicator Set, which is comprised of 100 indicators to monitor the 17 SDGs. The six regional indicators selected for monitoring SDG 4 have strong links with the Education and Training 2020 strategic framework of the EU, with the focus on investing in young people and increasing lifelong learning opportunities (Eurostat, 2017).

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[1] Against this backdrop, definitions in this report are largely borrowed from the United Nations as the driver of these goals.

1. Monitoring Progress Toward SDG 4 in the European Union

In December 2014, UN Secretary-General Ban Ki Moon called for a comprehensive approach to monitoring SDGs. This was later reflected in the 2030 Agenda's collective and universal call to action (UN, 2015; UNSG, 2014). While he emphasised the importance of effectiveness, efficiency, evidence, and universality as guiding principles for reviewing SDG progress, the UN Secretary-General also recommended using a participatory framework in which all stakeholders and related groups (e.g., civil society, business, parliament, academia and government) could recognise their shared responsibility in achieving the SDGs (UNESCO UIS, 2017: 3). He proposed a multi-tiered, multi-purpose framework comprised of four monitoring levels (national, regional, global, and thematic) that are briefly outlined below:

1.1 National Level Monitoring

At this level, the monitoring framework is linked to the needs of national and subnational governments in developing education sector plans and informing education policies. At this level, data should be specific to respective national contexts and therefore able to speak to specific policies and implementation needs.

1.2 Regional Level Monitoring

At this level, a set of indicators may be developed to account for priorities and issues of common interest that are shared by countries in a particular region as outlined in regional planning documents or frameworks. Some frameworks are designed to specifically monitor SDGs within a regional policy context, as is the case with the EU SDG Indicator Set and the African Union's broad set of development goals for the region in Agenda 2063: the Africa We Want, which has its own set of region-specific indicators (African Union Commission, 2015a, 2015b).

1.3 Global Level Monitoring

This involves a more limited and carefully selected group of leading indicators to provide an overview of progress toward each Target. The harmonisation of monitoring and reporting of SDGs for cross-country comparability is of critical importance for all stakeholders. The ability to analyse and compare national data across countries and years provides insights into measuring performance, driving policy reform, and allocating resources equitably to improve learning among all population groups. The knowledge sharing and universal review is convened annually under the UN's High-Level Political Forum on Sustainable Development (HLPF; UN, 2017).

1.4 Thematic Monitoring

This provides a level of monitoring of comparable indicators within a specific sector (e.g., education, environment, energy, health) or cross-cutting theme (e.g., gender). Thematic indicators serve as a framework to track progress on the basis of cross-nation comparability with an enhanced in-depth view of sectoral priorities. This enables the identification of sector-specific challenges and bottlenecks, and it mobilises action required to address them.

2. Monitoring SDG Target 4.7

Target 4.7 was the result of a long campaign to ensure that the SDGs highlighted the need for all learners to engage in transformative education on issues of global justice and sustainability. Monitoring frameworks generally rely on a number of different data collection tools and practices. For the larger SDG 4, the data focus on learning outcomes. This requires that that data will be largely, though not exclusively, centred around learning assessments. SDG 4 is divided into ten Targets, among them Target 4.7 that focuses on education for sustainable development.

> " *By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through ESD 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 (SDG Target 4.7).*

This Target involves an overlap of different subject areas because definitions of 'sustainable development' vary widely among various laws, policies, curricula, and assessments. In other words, indicators to monitor and evaluate implementation at all global and local levels are varied and complex; therefore, they require a systematic and theoretically grounded approach to their development and operationalisation. Rosenstrom and Kyllonen (2007) note that the importance of indicators for sustainable development goes beyond their use in providing data to inform policy. They determine conduct, alter awareness, shape attitudes, and contribute to decisions regarding resource allocation (Burford et al., 2016: 2). These indicators need to fully reflect the inherent concepts in Target 4.7.

Target 4.7 includes five thematic indicators, including a global indicator. They are as follows:

- 4.7.1 Extent to which GCE and ESD—including gender equality and human rights—are mainstreamed at all levels in national education policies, curricula, and teacher education student assessment.

- 4.7.2 Percentage of schools that provide life skills-based HIV and sexuality education.

- 4.7.3 Extent to which the framework of the World Programme on Human Rights Education is implemented nationally.

- 4.7.4 Percentage of students by age group (or education level) who demonstrate adequate understanding of issues related to global citizenship and sustainability.

- 4.7.5 Percentage of 15-year-old students showing proficiency in knowledge of environmental science and geoscience.

2.1 Indicators for the Provision of Education on Sustainable Development and Global Citizenship

These indicators focus on activities conducted at the point of teaching and learning, such as the school or institution for non-formal and lifelong learning. Indicators 4.7.1, 4.7.2, and 4.7.3 are all based on the concept of supply or provision to facilitate learning and awareness of Target 4.7. Data for these indicators can be collated by coding for their absence or presence in national education policies, curricula, teacher education, or student assessments.

However, this is rather complex because of the various definitions of what is considered to be sustainable development or global citizenship. That said, examples of conventional tools and frameworks that are currently in use in various countries to collect provision data are listed as follows:

2.1.1 School Census.

Most countries use an annual school census as the primary method to collect information from schools nationwide. This usually takes the form of a questionnaire and includes questions on school infrastructure, furniture and equipment, teaching and learning materials, school income and expenditures, teacher characteristics, and student characteristics. School census data can also be used to provide feedback to school managers and teachers.

2.1.2 School Audits.

Most school systems have an institution in charge of auditing financial issues, materials and infrastructure, human resources, as well as other aspects of school census reports and school accountability mechanisms.

2.1.3 Education Management Information Systems (EMIS).

An EMIS is a database that centralises school-based data collected from an annual school census, transactional data about education stakeholders' operations, and other data sources, such as population census data. It is used by education ministries, NGOs, researchers, donors, and other education stakeholders as a reliable source of educational data for planning, monitoring, and policy decision-making. There is often also a separate human resource or teacher management system (TMIS) that is used for decisions about school head and teacher recruitment and deployment.

2.1.4 Principal, Teacher, and Student Surveys.

Large-scale international assessment programmes use surveys of students, teachers, and school heads for background and contextual information. Such information includes perceptions of education quality processes, including teaching practices, the school climate, and school leadership and management practices. Surveys provide one way for education leaders to gather system-level information about education quality processes, even where direct pedagogical obser-

vation on a large scale is not feasible.

2.1.5 School Inspections.

School inspections can contribute to improved quality of schools and education systems. Terminology varies from one country to another. Common names for this process are school accreditation, inspection, or supervision. These processes generally have two interwoven objectives, namely, public accountability and school development.

2.1.6 School Report Cards (SRC).

School report cards aggregate information on schools, including enrolment, teacher and student attendance, and student academic performance, in a form accessible to the public. Several models exist, from well-institutionalised models where information is provided for each school and published regularly on the Internet, to one-time report card surveys conducted with the support of civil society organisations. By publishing school-based data, SRCs promote transparency and accountability.

2.1.7 Expenditure surveys.

These may be used to monitor expenditures among different groups, such as students, households, or governments. Public Expenditure Tracking Surveys (PETS) measure the leakage or diversion of funds in education systems using sampling methods. They track funds from the central level down to individual schools and give insight into whether resources are being used as intended for general operational needs and for efforts to improve education quality. PETS can be used to check whether flows of key resources that directly impact learning actually reach their intended beneficiaries, such as school funds, or are used to purchase textbooks, learning materials, equipment, and so on. PETS are often combined with a Quantitative Service Delivery Survey (QSDS) that focuses on other dimensions, such as ghost teachers or teacher absenteeism, all of which are also key to improving the quality of learning.

2.1.8 Financial Management Information Services (FMIS).

FMIS collect and integrate public financial management processes, including budget formulation, execution, accounting, and reporting.

2.1.9 Mapping.

Geographic Information System (GIS) technology can be used to map data onto geographical areas, thereby exposing regional patterns and relationships that may be less obvious when represented only in numeric tables and databases. The visual mapping of complex data can help decision-making for factors such as resource distribution, teacher deployment, and planning for education in times of conflict or emergencies.

2.2. Indicators for Learning Outcomes on Sustainable Development and Global Citizenship

Indicators 4.7.4 and 4.7.5 focus on learning outcomes achieved as a result of educational inputs provided within Target 4.7. The development of national level strategies to measure learning outcomes for sustainable development and global citizenship need to include internationally comparable indicators and methodological tools if countries are to measure progress toward key Targets of SDG 4. Again, the major difficulty is the agreement on definitions of sustainable development and global citizenship. That said, examples of conventional tools and frameworks that are currently in use in various countries to collect learning outcome data include the following:

2.2.1 Learning Assessments.

Assessment data play a key role in monitoring frameworks as part of the analysis of issues in an education system and to monitor plans for improvement. This includes large-scale regional and international assessments like the Programme for International Student Assessment (PISA) or the Southern and Eastern Africa Consortium for Monitoring (SACMEQ), national assessments like the National Alliance for Partnerships in Equity (NAPE) or national examinations, and thematic assessments like the Early Grade Reading Assessment (EGRA) and the Early Grade Mathematics Assessment (EGMA).

2.2.2 Education Management Information Systems (EMIS).
Assessment data may also be incorporated into the EMIS or SRC.

2.2.3 Pedagogical and Classroom Observation Protocols.

The core process that matters most for improving learning outcomes is the interaction between teachers and students. Nevertheless, many educational monitoring systems do not collect data during this process because it requires direct observation and reliable coding of primarily qualitative information, both of which are difficult to achieve on a large scale. Many systems use pedagogical observation as part of teacher appraisal or recertification processes and also in peer-to-peer formats as part of their continuing professional development.

2.2.4 Graduate Tracer Studies.

Graduate tracer studies are surveys that determine the percentage of graduates gainfully employed, self-employed, or admitted to post-secondary studies after completing secondary education. These are analysed in relationship to other important background variables.

Tracer studies have typically been conducted on graduates of technical, vocational, or post-secondary institutions; however, they can also be employed after graduation from the basic education system. This is particularly true in contexts where the majority of secondary education graduates do not proceed to higher education.

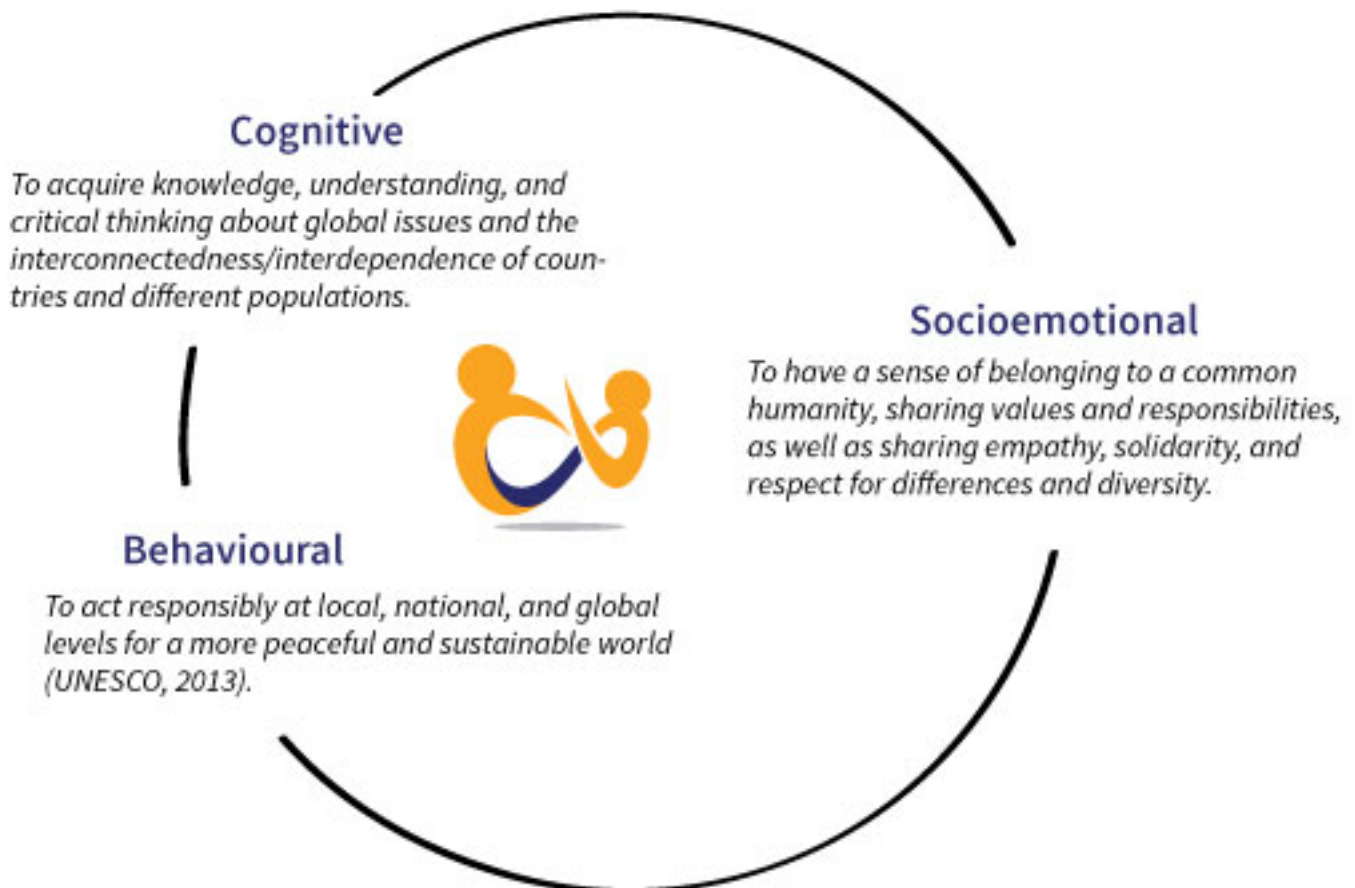### 2.2.5 Employer Satisfaction and Skills Gap Surveys.

This approach surveys employers to assess whether graduates possess the skills and qualities needed to be employable in different sectors of the economy. In many countries, certain industries

consistently hire workers from other countries because local graduates are perceived as lacking the technical skills required for the job. Employer satisfaction surveys or skills gap surveys may also reveal problems at a more basic level, such as insufficient abilities to communicate and collaborate. Education planners can use these data to reconsider the content of subjects being taught in school as well as their overall pedagogical approaches.

3. Definition of Education for Sustainable Development (ESD) and Global Citizenship Education (GCE)

As mentioned in paper 1 of this series, 'Characteristics of SDG Target 4.7 and the importance of its Inclusion in the SDGs', in consultation with experts around the world, UNESCO developed three key conceptual dimensions for both ESD and GCE:

Cognitive
To acquire knowledge, understanding, and critical thinking about global issues and the interconnectedness/interdependence of countries and different populations.

Socioemotional
To have a sense of belonging to a common humanity, sharing values and responsibilities, as well as sharing empathy, solidarity, and respect for differences and diversity.

Behavioural
To act responsibly at local, national, and global levels for a more peaceful and sustainable world (UNESCO, 2013).

Both concepts, ESD and GCE, are now part of the SDGs adopted by the UN in 2015 and are reflected in the terminology of SDG 4.3.1 Education for Sustainable Development (ESD)

3.1 Education for Sustainable Development (ESD)

This paper borrows from the Global Alliance for Monitoring Learning (GAML, 2017: 3) proposed definition of ESD.

> *Any educational efforts that equip learners with the key learning components of **knowledge** (on ESD topics of lifestyle and sustainable ways of life, climate change, biodiversity, and the greening economy),* ***skills, values, engagement, attitudes,*** *and* ***experiences*** *to address social, environmental and economic challenges of the 21st century through integrating critical issues such as climate change, biodiversity, disaster risk reduction, and sustainable consumption and production.*

By stating that all learners must acquire the knowledge and skills needed to live sustainably, Target 4.7 calls for a transformative change in education not only in the Global South but worldwide (Gallwey, 2016: 125). Attention to learning in a sustainable world is central to the SDGs and represents an important global policy shift toward human development (Wagner, 2018: 47). ESD aims to ensure that learners acquire the knowledge and skills needed to promote sustainable development, including th rough education for sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and an appreciation of cultural diversity and culture's contributions to sustainable development.[2]

In the context of globalisation, non-formal education programmes provide the means through which formal education can be complemented, reinforced, or updated through ESD. The provision of more diverse skills should be seen as a natural expansion of the support of learning that individuals require in an ever changing social and economic landscape (Wagner, 2018: 136).

3.2 Global Citizenship Education (GCE)

Global citizenship suggests an expanded interpretation of citizenship beyond the boundaries of a state, the implication being that everyone is interconnected in multiple ways as citizens of the world. While an internationally agreed definition is yet to be developed, the essence of global citizenship is generally described in terms of a sense of global belonging, solidarity, a collective identity, and a non-legal status beyond the state (UNESCO, 2013).

It would not be practical to outline the scope of global citizenship and list any exclusions given that the field is continually evolving at the levels of both policy and practice. However, any regional body, such as the EU, could define global citizenship in the context of its own operating environment. For instance, the South East Asia Primary Learning Metrics (SEA-PLM) acknowledges the literature of GCE and the curricula of the region in its working definition of global citizenship.

> *Global citizens appreciate and understand the interconnectedness of all life on the planet. They act and relate to others with this understanding to make the world a more peaceful, just, safe, and sustainable place (SEA-PLM, 2016: 5).*

This definition created for SEA-PLM was required to address core Association of Southeast Asian Nations (ASEAN) values. In the ASEAN region, the commitment to education that promotes human rights, human development, gender equality, a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity was reaffirmed in the Asia-Pacific Statement on Education beyond 2015.[3] This acknowledges SEA-PLM as an assessment for the Southeast Asian region and illustrates the need for region-specific characteristics to ensure local appropriateness and relevance. However, despite the role of ASEAN to facilitate regional integration, there is no singular view on what constitutes

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2 United Nations, www.un.org/sustainabledevelopment/education/

3 See: Asia Pacific Statement on Education Beyond 2015.
http://www.unescobkk.org/education/conference/asia-pacific-regionaleducation- conference-aprec/asia-pacific-statement/

a common regional identity with core shared values. The member countries of ASEAN are acknowledged as being very diverse both historically and culturally. Therefore, their collaboration is bolstered by universal values, a combination of principles or standards that most people find reasons to uphold as important or worthy in life, such as peace, safety, security, stability, and justice.

While GCE is a relatively new term, it was based and continues to build upon associated fields, including 'peace education', 'moral' or 'social education', 'civics and citizenship education', and others (SEA-PLM, 2016: 4). In the GCE literature, competencies related to global citizenship are often defined along three major measurement subdomains: cognitive aspects gained through learning about global structures, systems, and issues; attitudes and values that reflect positive orientations to global citizenship concepts, such as appreciation of diversity, equity, peace, and human rights; and the behaviours and skills related to activities that create positive change and foster social participation.

As a region, the EU does not propose a working definition of GCE. A variety of different concepts are used within different national contexts, including the following:

- Global Education

- Global Citizenship Education

- Global Development Education

- Global Learning

- Development Education

- Development Education and Awareness Raising

- Education for Citizenship and International Solidarity

- Education for Development (Nygaard and Wegimont, 2018: 51).

Despite using different concepts, most countries recognise their national articulation as being related to global education, while many policy documents also relate to the universalist, rights-based approach (ibid). The term 'global

education' was developed by the Global Education Network Europe (GENE) and others. It is based on the statement of the Maastricht Declaration on Global Education in Europe in 2003:

> " *Global education is education that opens people's eyes and minds to the realities of the world and awakens them to bring about a world of greater justice, equity, and human rights for all. Global education is understood to encompass development education, human rights education, education for sustainability, education for peace and conflict prevention and intercultural education; being the global dimensions of education for citizenship.*

This definition contains both an aspirational vision and a strategic intention to unite different traditions of education for social change, both local and global. GENE has developed this definition in consultation with policymakers in many European countries, and it has proven to be fruitful in terms of policy coherence and policy learning across countries with differing traditions but similar intent (Nygaard and Wegimont, 2018: 7).

Arguably, the World Wise Schools Programme in Ireland is a flagship programme in the field of ESD and GCE. Through development education (a combination of ESD and GCE in Ireland), the programme challenges stereotypes and encourages independent thinking by helping students critically explore the root causes of global justice issues and how they interlink with our everyday lives. It features teaching and learning through a global justice lens to allow students to explore the knowledge, skills, attitudes, and values necessary to become global citizens (World Wise Schools).

For the purposes of this paper, we borrow from the World Wise Global Schools definition of GCE which is defined as follows:

An educational process aimed at increasing awareness and understanding of the rapidly changing, interdependent, and unequal world in which we live.

4. Conceptual Framework from Summary of Competencies

Target 4.7 provides legitimacy and raises the profile of the concepts of sustainable development and global citizenship. Of course, there are important distinctions between ESD and GCE, but there are also many overlapping areas of interest (Fricke, Gathercole and Skinner, 2015: 18). Using the working definitions selected for this paper, we confirm that GCE and ESD are 'different sides of the same coin'. Their key concepts are closely aligned, and they both include text designed for education that leads to relevant and effective learning outcomes in the context of globalisation. However, they also point to the difficulty in developing a universal functional measure for learning while also raising the important questions of how these can be implemented and measured, and how/if a global metric to measure learning is feasible. We fully acknowledge that some of the parameters, assumptions, and definitions associated with global citizenship and sustainable development, including some represented in this paper, are contested.

As mentioned in Section 2, the current global indicator for Target 4.7 is SDG Indicator 4.7.1. Presently, there is no universally recognised methodology for this indicator. The Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs)—created by the United Nations Statistical Commission to develop and implement the global indicator framework for the Goals and Targets of the 2030 Agenda—has therefore grouped indicator 4.7.1 among the SDG indicators at the lowest level of methodological development and the lowest data availability (Huebler, 2019).

SDG 4 in and of itself is transformative rather than transmissive. Therefore, the content to be measured ultimately needs to be transformative. The first step toward identifying the content to be measured is to create a conceptual framework for

Target 4.7 using a summary of competencies of the two subjects. Competencies have been defined as the ability to successfully meet complex demands in a particular context through mobilisation of psychosocial prerequisites (including both cognitive and non-cognitive aspects), and also as complex action systems encompassing cognitive skills, attitudes, and other non-cognitive components (Rychen and Salganik, 2001: 51). Broadly speaking, the competencies that would need to be assessed in both subjects can be categorised into three goals:

1. Fostering values and attitudes of being an agent of positive change.

2. Building knowledge of where, why, and how to take action toward positive change.

3. Developing self-efficacy for taking effective actions toward positive change.

The vast literature on proposed competencies for assessment of ESD and GCE reveal a complex, multi-faceted, and rather low-consensus image.[4] Against this backdrop, our proposed framework groups the main concepts of ESD, GCE and the content to be measured into three competencies of knowledge, attitude, and practice to allow for applicability in both formal and non-formal learning settings, ease of collection and use, comparability, relevance, and coverage. This competency framework builds on other research and then focuses on key transformative outcomes for learners by placing the emphasis on 'individual reflection and transformation'. Because they are primarily 'soft skills', they can vary between and among different contexts and therefore must be benchmarked on a continuum of sorts.

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[4] Informed by Euriydice Report on Citizenship Education in Europe,2017; Wiek et al., 2011; Giangrande et al., 2019; and Burford et al., 2016.

Table 1: Competencies to be measured for Learning Outcomes on Sustainable Development and Global Citizenship

COMPETENCIES	Global Citizenship Education	Education for Sustainable Development
Knowledge	Cognitive	Knowledge, Skills
Attitude	Socioemotional	Values, Attitudes
Practice	Behavioural	Engagement, Experiences

These identified competencies mirror the pillars for education in the 21st century as outlined in the Delors Report (UNESCO, 1996) that has had a profound impact on education policy and practice worldwide. Although they may not cover the full range of possible dimensions, they can provide an entry point for conception and measurement using prototype indicators that are discussed in Section 5 of this paper.

Knowledge is tangible, and it can be measured through indicators linked to content of curricula, for instance. However, in terms of Target 4.7, we need to look at the process of receiving knowledge, challenging it, and producing new knowledge, all while considering how this is facilitated in ESD and GCE. Learning assessment data alone cannot measure this adequately. Attitude and practice are intangible and therefore difficult to measure. Rather than viewing them as static latent traits possessed by individuals, they may become visible in groups when operationalised through systematic processes in clearly defined-practical contexts (Burford et al., 2016: 2).

To accomplish this, we borrow from the inductive values-based approach for developing indicators within our proposed monitoring framework. In practical terms through this approach, actual indicators within the various competencies are generated by working groups (doers) relating to their work/practice (doing) rather than by individual leaders or national/regional representatives in abstract and intellectual modes (Burford et al., 2016: 3).

This approach ensures that the indicators are socially relevant and readily communicable to non-specialists, and it also ensures that they are empirically defensible. However, due to various limitations, our proposed monitoring framework only borrows the principles of this approach.

5. Monitoring Frameworks

Monitoring frameworks provide a description of the constructs to be measured. They also outline the design and content of the measurement instruments and describe how measures generated by those instruments relate to the constructs. They combine theory and practice to describe 'both the "what" and the "how"' (Jago, 2009: 1) of the monitoring progress. They should be designed to monitor quality at different levels (country, region, schools) and for different groups (school authorities, teachers, students). They draw on a number of different tools and components to collect and organise data needed to monitor a system's performance (UNESCO, 2016). Monitoring should occur at both individual and system levels. According to the IIEP (2019), an effective monitoring plan should provide answers to several questions:

• Which indicators should be measured in order to determine what was done, how well it was done, and what was achieved? The indicator should be directly related to the expected outcome or goal. It should be measurable and well defined. Baseline and target values are calculable.

• Who will collect these data and how will they collect them? This will indicate the institution or personnel responsible for collection and the tools to be used, including checklists, forms, and surveys.

• How will the data flow from the original collection locations to technical staff and then to management and policymaking levels? This may be accomplished through existing data-sharing networks like EMIS or through specially tailored computer programs.

• Who will check the data quality, conduct the data analysis, draft reports, and make decisions based on the data? Experienced technical knowledge and expertise will be needed.

• How will the data be managed to ensure privacy, enable access to those who need it, and guarantee safe storage over time? Storing the data on a dedicated computer system with monitored access would probably ensure all of these requirements.

Our proposed monitoring framework[5] outlines these steps in three broad competency clusters.

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[5] Refer to Annex XX.

6. Values - Based Approach to Developing Outcome Indicators

The more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor (Campbell, 1979: 85 as cited in Wagner, 2018: 251).

One key theme that could provide a basis for measuring progress in ESD and GCE is a more values-based approach to learning with an emphasis on social justice, human rights, fairness, and the desire for a more equal world (Abdi and Shultz, 2008; as cited in Nygaard and Wegimont, 2018). Indicators should be based on context and on the specific learning goals of the education system. They should be designed to allow for measurement of change over time and be disaggregated by gender, geography, socioeconomic situation, and other equity issues (IIEP, 2019). Classed as Tier III indicators, SDG Target 4.7 indicators have not been agreed upon to date because there is currently no internationally established methodology. An indicator is simply a piece of measurable information that shows us whether or not our desired change is happening. In order to be measurable, indicators have to be tied to specific sites, target groups, and timeframes. Using one indicator does not imply that other valuable types of progress toward the same overall goals are not occurring in different ways and in different sites (Gallwey, 2016: 131).

Education systems are typically analysed in terms of context, specific inputs, social or institutional processes, and outputs or outcomes. Indicators can be developed to measure issues that fall under each of these categories. UNESCO proposed in its comprehensive 2014 document on GCE that measurement can be implemented in many different ways but that, in general, these forms should take into consideration different aspects such as the inputs (e.g., educators' competencies, resources, tools, and learning environment), the process (e.g., teaching methodologies, types of actions, and learners' engagement) and

the outcomes (e.g., knowledge, values, attitudes, skills, and impact on communities).

UNESCO's framework (UNESCO, 2004: 36) for the variables of education quality includes five dimensions:

1. Learner Characteristics:

These include learner aptitude, perseverance, readiness for school, prior knowledge, barriers to learning, and demographic variables.

2. Context:

This includes public resources for education, parental support, national standards, labour market demands, sociocultural and religious factors, peer effects, and time available for schooling and homework. Context indicators provide information on the contextual factors that affect learning; for example, student characteristics, socioeconomic conditions, cultural aspects, status of the teaching profession, and local community issues. Context indicators are often challenging to develop and measure as they concern qualitative issues that are often measured using quantitative data. Common data collection tools include surveys, classroom observations, inspection reports, and self-evaluations.

3. Enabling Inputs:

These include teaching and learning materials, physical infrastructure and facilities, and human resources. Input indicators primarily measure the deployment of resources to facilitate learning. They reveal whether the planned financial, material, and human resources are being delivered in the planned quantities at all

levels of the system. Information on input indicators is relatively easy to obtain because inputs are often 'countable' by nature, and management processes involve keeping records of many inputs automatically. One challenge may be the differences between producing inputs and ensuring that they are available at the endpoint. For example, the textbook-to-pupil ratio may be measured in terms of the number of textbooks that are delivered or by the number of textbooks in actual use in schools. In some cases, there may be a discrepancy between the two figures.

4. Teaching and Learning:

These include learning time, teaching methods, assessment, and class size. Process indicators measure how educational programme activities were conducted and whether they achieved the desired quality levels. This includes how specific educational processes are conducted in practice, (e.g., the application of standards, teaching quality, time on task, school climate, and leadership). Like context indicators, process indicators relate to qualitative issues and may be obtained through surveys and pedagogical observations, inspection reports, and self-evaluations.

5. Outcomes:

These include skills in literacy and numeracy, values, and life skills. Outcome indicators measure the effects of the programme activities to verify whether the programme objectives were attained. They reveal how the education system is performing in terms of subject knowledge, competencies, repetition, progression, completion rates, and employer satisfaction. Output indicators may be obtained through national examinations, international assessments, surveys, and systematic field observations. Output indicators typically involve measurement of learning outcomes based on national examinations or international assessments. Output indicators provide the most important data for understanding whether educational quality and learning outcomes are

improving as intended (adapted from: Scheerens, Luyten, and van Ravens, 2011).

The UN approach to developing SDG indicators was conventional. The IAEG-SDGs—created by the United Nations Statistical Commission to develop and implement the global indicator framework for the Goals and Targets of the 2030 Agenda—demonstrated the extent to which the development of indicators is sociopolitical and empirical. All countries, regional and international agencies, civil society, academia, and the private sector were invited to comment on drafted indicator proposals and to submit recommendations for alternatives where deemed necessary (eighty-three CSOs, sixteen UN Agencies or related, nine national statistics offices, five universities, and one working group). The question they answered was the following:

> ❝ *Please examine the candidate indicator given for SDG Target 4.7 and propose any alternatives you think might be more appropriate.*

This limited the process to a focus on proposals that were already drafted and on views only from those who were invited. Given the nature of those invited to participate, it is highly possible that input was framed around institutional affiliations and interests as well as cultural backgrounds.

In contrast, the overarching aim of the values-based approach for developing indicators is to define project-level indicators and tools to identify, capture, evaluate, and communicate less-tangible domains like the three competencies identified in our proposed conceptual framework in Section 4.

To unpack this further, we borrowed from the ESDinds Project[6] that involved two university research groups and four CSOs promoting ESD in non-formal contexts. The project aimed to develop project-level indicators and tools to capture the values and priorities of participating CSOs in their work and to help them identify

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[6] Development of Values-Based Indicators and Assessment Tools for Civil Society Organisations Promoting Education for Sustainable Development (Funded by the European Commission).

relevant indicators. This project invited six CSOs to construct a set of draft indicators, and another fifteen were invited to reduce the set by clustering overlapping responses. The question they answered was as follows:

What is worthwhile, valuable, and meaningful to you about your work?

The focus in this case was on the practical elements of the work of CSOs involved in promoting ESD. Data was analysed using thematic content analysis, and definitions were negotiated to find proto-indicators that were less rigid than those developed conventionally. This reflected the concept of a prototype in design literature that is used to build concise statements that can serve as templates or triggers for local development of immediately relevant measurable indicators (Harder et al. 2014) that are of cardinal importance in the measurement of Target 4.7.

Noting that outcomes for Target 4.7 are too difficult to measure at a global level, and also because it would be preferable to focus on the efforts within countries to promote sustainable development through education (Global Campaign for Education Netherlands, 2016), our proposed monitoring framework acknowledges that when measuring changes result from educational actions, the changes occur at various levels and cannot simply be measured in terms of student assessment. Using the values-based approach, we recognise that progress toward Target 4.7 happens at different sites in different ways and therefore requires a diverse and flexible framework for monitoring. The use of proto-indicators ensures that they serve as prompts for localised processes of reflection, conceptualisation, and operationalisation, thereby leading ultimately to indicators that are both salient and measurable at the local level (Burford et al., 2016: 21).

In terms of measuring actions taken as a result of educational interventions, there is an interesting example from Suas, a Dublin-based charitable organisation that addresses educational disadvantage in Ireland and the Global South.

GCE is a core element of Suas' work, particularly in their Global Citizenship Programme, a non-formal education programme that promotes university students' progressive engagement with global issues (Malone, Carley, and Bracken, 2014). One desired outcome of the programme is that students will take action as a result of participation in the programme. Aware of the many challenges in tracking and measuring actions as a result of learning (e.g., contribution vs. attribution, deep engagement vs. 'clicktivism'), Suas has opted to measure the action dimension not simply by what actions are taken but also by how participants engage with action options.

• Programme Outcome: Participants will be familiar with a range of action pathways that they can take to create positive change in the world.

• Programme Indicator: Change in participants' levels of awareness of different ways that they can foster positive change.

The data is collected through a multi-method approach, including participants' self-evaluations using a 'progression pathway rubric'. The pathway is completed by participants at the end of the Global Issues Course and Volunteer Programme, and it is designed to encourage students to reflect on different opportunities for continuous engagement, what they have already done, and what they would like to do as a result of their participation in the course. Scores on a participation pathway rubric are collected from a variety of projects and collated to track citizens' abilities to work effectively for a more just and sustainable world. It suggests a series of seven general action pathways and captures the inclination of participants to engage with each pathway. The pathway is not intended to compel participants into particular actions, rather, it provides concrete suggestions and enables Suas to provide tailored support to students wishing to further their engagement.

Suas also tracks the number of participants who progress through the three strands of the programme and maintains contact online with alumni to ascertain other actions they have taken through their own initiatives in order to remain

involved in global citizenship.

Overall, this approach has enabled Suas to effectively track the complex relationship between education and action, and this enables them to build a strong base of evidence to illustrate the effectiveness of their programme. The aforementioned examples are just three cases in which Irish practitioners are tackling the challenging area of measuring change and progress in ESD/GCE.

This approach to ESD and GCE builds competencies both directly and generally, and it measures progress in these identified competencies within the conceptual framework.

As discussed previously, the overarching aim of values-based approaches is to develop project-level indicators and tools to identify, capture, evaluate, and communicate less-tangible domains or competencies such as knowledge, attitude, and practice, as identified in Section 4. While acknowledging the importance of standardised and comparable indicators, this allows for the development of locally valid indicators.

7. Proposed Framework to Report on SDG Target 4.7

Our proposed framework is guided by UNESCO's framework outlined in Section 6. The context, input, and process indicators can be measured using relatively conventional methods and may make use of already existing tools, as outlined in Section 2.1. The purpose of collecting these data is to provide a snapshot of issues and facilities in specific contexts. Sapsford (1996: 184) argues that 'in terms of components, proportions and percentages are often more useful than absolute numbers … actual numbers may be useful for planning purposes, but percentages are more interpretable and lend themselves more easily to useful comparison'. He further points out that the art of presenting numerical data lies in offering the figures that will convey the desired information in an easily readable format while still providing enough information for the reader to validate the figures and draw conclusions that may differ from those presented by the author (ibid). Arguably, these data will be largely quantitative and can be extracted using SPSS and presented using graphs, bar charts, and pie charts.

However, outcome indicators require a nonconventional approach because the theory of change in this Target is complex, long-term, and non-linear. For measuring SDG Target 4.7, this paper proposes using knowledge, attitude, and practice (KAP) studies for both baseline data and measuring progress. Strategically, this shows the shift in modes of education—from a transmissive to a transformative paradigm—that changes the agency of students into active participants in the process of learning and therefore includes non-formal education. Additionally, the use of proto-indicators acknowledges and recognises that designing indicators of progress for a Target as complex as this one requires an inclusive approach that incorporates local values and priorities. The inductive development of indicators from what groups identify as immediately valuable, worthwhile, and meaningful in their diverse contexts would have important implications for engagement in—and the democratisation and diversification of—global sustainability and the development agenda as a whole (Burford et al., 2016: 22).

This paper suggests using key informant interviews and focus group discussions (FGDs) based on interview questions in both formal and non-formal learning contexts. The FGDs are particularly important to tap into tacit knowledge that is developed and accumulated through shared contexts of practical experiences. The accumulation of tacit knowledge provides one explanation for a value discourse gap, a situation in which people are already enacting a particular value in their day-to-day actions but do not bring it into the conversation (Burford et al., 2015).

7.1 Context Indicators

These include standard learner characteristics and demographic variables that can be collected during the KAP study (discussed in more detail in Section 7.3) at the point of education provision. The purpose of these indicators is to gather information on the contextual factors that affect learning. Typically, they will be the first group of questions in our KAP Study Questionnaire and are largely quantitative in nature.

At the national level, these may involve coding for the presence or absence of the concepts of SD and GC in the policy environment, curricula, teacher education, or student assessments.

Our proposed indicators are the following:

The presence of the concepts of global citizenship and sustainable development in the national education policy framework.

The presence of the concepts of global citizenship and sustainable development in the curriculum (including primary/post-primary/non-formal curricula).

The presence of the concepts of global citizenship and sustainable development in the teacher education curriculum.

The presence of the concepts of global citizenship and sustainable development in student assessment tools.

7.2 Input Indicators

These include educators' competencies, resources, tools, and the learning environment. The data can be collected at the point of provision, such as the school or institution that provides non-formal/lifelong learning. As mentioned in Section 6, this information is relatively easy to obtain because inputs are often "countable" by nature, and management processes involve keeping records of many inputs automatically. The data can be collected using a classroom observation protocol or key informant interview as outlined in Section 2.1, and they can be collated by coding for absence or presence of materials and resources.

Our proposed indicators are as follows:

The presence of learning materials/resources on sustainable development and global citizenship to assist teachers/educators in the classroom.

Percentage/number of teachers trained in concepts of sustainable development and global citizenship.

7.2 Process Indicators

These include teaching methodologies, types of actions, and learners' engagement. This data can be collected using classroom observation protocol. Our proposed indicator is the following:

• An enabling local environment for learners and educators.

7.3 Outcome Indicators

These include knowledge, values, attitudes, skills, and impact on communities. Without reviewing the plethora of information available regarding methods of indicator development, the brief overview of the values-based approach discussed in Section 5 posits this as an example of best practice in indicator development, particularly for non-linear theories of change. As we neither have the time nor the funds to develop the indicators for Target 4.7 using the values-based approach, we use key aspects of its design elements to suggest proto-indicators.

To measure progress in relation to Target 4.7, it is necessary to first establish 'the knowledge and skills needed to live sustainably', and secondly, 'how we will know if our education programmes are helping us acquire them'. (Gallwey, 2016: 128). This involves the development of a thematic template comprised of the key competencies identified within the conceptual framework for Target 4.7. This template is then used to analyse the data by 'theorising' within a framework of analysis. Theorising includes perceiving, comparing, aggregating, ordering, and generally finding connections in the data (McKernan, 1997: 221).

Thematic template analysis (as mentioned in Section 6) is not a single, clearly delineated method; it refers to a variety of techniques for thematically organising and analysing textual data in which the researcher produces a list of codes ('template') representing themes identified in their textual data, some of which will usually be identified a priori but will be modified and expanded upon as the researcher reads and interprets the texts (King, 2004: 256). McKernan (1997: 224) found that coding becomes more arbitrary when open-ended questions are asked. The idea is to let the data speak for itself. This process is therefore *transformative* as it not only examines the new data but does this creatively and reflexively so that valuable concepts emerge to inform powerful theory (McKernan, 1997: 224). This approach is particularly suitable for SDG Target 4.7 because it adopts and accommodates various interpretations as data are viewed from different perspectives depending on specific social contexts.

Often, the best starting point for constructing the initial template is the conceptual framework and potential questions for each of the identified competencies. This focuses attention on certain data while increasing consistency and reliability during the coding process. Although this approach somehow forces the analysis, it provides a framework that comprises and ensures a focus on key areas.

The coding process is guided by King's six steps which are used in template analysis (King, 2004):

1. Define a priori themes and codes: Develop specific themes (in this case the identified competencies) and categories from the conceptual framework that will guide the data analysis. The categories provide the proto-indicators for this key information from within the respective themes.

2. Transcribe interviews: The focus should be on shared meaning and understanding of various aspects of the concepts within specific contexts. It is particularly important to construct shared meaning and understanding because of the varied definitions of sustainable development and global citizenship.

3. Conduct initial coding of data applying a priori codes where appropriate. If there is no relevant theme, modify an existing theme or develop a new one: Flowing from the inductive nature of the coding process, it is important to use suggested indicators in line with the values-based approach to indicator development. Through interpretive coding, it is also possible to name and define codes in the template for analysis from the individual findings within each of the identified categories.

4. Produce initial template: As a result of the previous three steps, a matrix is available for use as the template for analysis. This template has the themes (competencies), categories (proto-indicators), and codes (actual indicators) that are used to analyse the data.

5. Apply template to the full data set: Through a reflective process, verify all defined categories (proto-indicators / merged findings) and codes (individual findings / actual indicators) for reliability, consistency, and accuracy.

6. Use the 'final' template for interpreting and writing the findings: With the final template, use cross-case synthesis to represent the data in a discussion by making assertions, links, and drawing conclusions. This involves preparing a matrix that includes all the individual findings from each of the cases organised on a continuum of sorts.

For reporting purposes at the national and EU levels, the proposed outcome indicators would be reported on a continuum based on the following:

- Increased **knowledge** of issues regarding sustainable development and global citizenship.

- Change in **attitudes** to issues regarding sustainable development and global citizenship.

- Level of **active participation** in issues related to sustainable development and global citizenship.

8. Monitoring Plan

Besides the data related to policy environments, all data can be collected locally at point of provision of ESD or GCE, for example, school and teacher training colleges. Ideally, this can be performed by researchers with relevant experience and technical knowledge. The studies can be commissioned nationally by relevant government departments, ministries, or by networks such as Bridge47. This would ensure transparency and objectivity in the data collection process. Once the collected data is analysed, it can be fed into existing platforms like EMIS, the PISA study, or shared through respective networks and the augmented voluntary national reviews (VNRs). Coordination via the VNRs could be managed by UNSDG 4 National Coordinators as the national coordinating lead. This would ensure that the data is available to technical staff and decision makers in relevant government departments and ministries. This would also ensure that the data is stored and managed properly to enable access on an as-needed basis. Reports could also be shared with relevant stakeholders and authorities at local, national, and EU levels.

For International Association for the Evaluation of Educational Achievement (IEA) studies, the 2016 International Civic and Citizenship Education Study (ICCS) has depended on the critical input, perseverance, and enthusiasm of the national research coordinators and their teams. The important data sets that are already available within the ICCS could be leveraged and fed via the UN National-Regional Coordinators and by linking their work to that of Ministry of Education or the in-country PISA. If we consider that a combined measurement approach that includes both provisions and outcomes is required, then PISA-style data on both learning and assessment outcomes will need to be captured, and this would need to be augmented with further captures at the ICCS level, the National Coordinator of the SDGs in-country, plus teacher education colleges as reported by the Ministry of Education. This can then be relayed to UIS/GAML as the bodies currently charged with the responsibility of monitoring achievement on Target 4.7.

As mentioned, besides the data on policy environments, all data can be collected locally at point of provision of ESD or GCE. Ideally, this can be done by researchers with relevant experience and technical knowledge. The studies can be commissioned nationally by relevant government departments, ministries or by networks such as Bridge47. This would ensure transparency and objectivity in the data collection process.

Once the data is analysed, it can be fed into existing platforms like EMIS or shared through respective networks. This would ensure that the data is available to technical staff and decision makers in relevant government departments/ministries. This would also ensure that the data is stored and managed properly to enable access on an as-needed basis. Reports can also be shared with relevant stakeholders and authorities at local, national, and EU levels.

9. Conclusion

From our paper on the use of learning assessment data, we recognise and acknowledge that learning assessments serve an important purpose, including for non-formal, informal and lifelong learning. They are invaluable for monitoring learning outcomes and can provide proxy indicators for context and input.

As discussed in Section 2, learning assessments provide us with pieces of measurable information that show whether or not a desired change is actually happening. Therefore, they need to be tied to specific sites, target groups, and timeframes. However, the indicators used do not often speak directly to local or specific contexts. Further, learning is transformative, and the process is therefore as important as the outcomes. Conventional learning assessments generally do not adequately measure the process even though they are key to understanding the outcomes. Therefore, nuanced measurement tools are essential to realistically understand and measure learning in different contexts because they take into consideration local interpretations of issues, local knowledge, and local attitudes that are often dissimilar.

The European Economic Area (EEA) examples of non-formal and informal best practices for GCE discussed in our paper about the characteristics of SDG Target 4.7 [7] provide practical examples of projects in which conventional assessments may not be able to adequately track progress.

Assessing key competencies as outlined in our conceptual framework (Section 4) provides a more inclusive approach that would arguably be best achieved using our proposed framework. By assessing these key competencies—as understood and defined in the respective contexts—measuring and tracking progress at the local level provides the most effective way to report on Target 4.7.

Using this participatory framework suggests that local stakeholders, particularly non-formal and informal learning implementers, are strategically placed to provide the information directly 'from the source'. This information can then be 'fed upwards' to contribute to existing mechanisms at national, regional, and international levels of monitoring.

Additionally, this means that the data is genuinely comparable based on what is understood by GCE and ESD at implementation level. The strength of this proposed framework lies in its adaptability and flexibility for use in non-formal and informal learning sectors.

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[7] See Section 4.

10. Recommendations

We recommend that the application of this proposed framework be further explored to analyse its adaptability and to test its robustness.

We also recommend a comparison between the formal, non-formal, and informal sectors to explore and analyse the differences and similarities in terms of competencies. This would provide a measure of comparability with conventional aspects within the formal learning sector.

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Reading International Solidarity Centre (RISC)	World Wise Global Schools	SUAS	EADS Proposed Methodology
The toolkit is designed to provide insight into the impact of global citizenship work on a class or group of young people, rather than to form an individual assessment. 16 short audit activities for small groups of pupils covering the themes of 'understanding diversity', 'making a difference', 'thinking about futures' and 'awareness of the wider world'. The activities draw on a range of techniques, including voting, brainstorming, and responding to photographs to develop a snapshot of pupils' understanding of and attitude towards issues, such as how to protect the environment, what makes a family, and what you might see in a country in Africa. The activities promote thought and discussion, which is the key to revealing knowledge and understanding, values, and attitudes. The methodology proposed uses activities as a baseline audit, analyses the results, and uses them to inform the school's planning. At the end of a teaching and learning programme informed by the baseline audit, the audit activities are then repeated. By comparing and analysing the responses to the baseline and repeat activities, teachers can illustrate changes in values, attitudes, and understanding.	The Global Passport scheme is a voluntary, self-assessed, externally audited accreditation scheme for second level schools. Schools are invited to collect 'stamps' for their Passport in 7 areas: • Curriculum • Extra-Curricular • Teacher Capacity • Student Capacity, School Leadership • Policy & Ethos • Respectful Relationships. Together, the 7 areas create a composite picture of a 'global school', allowing different schools to take different approaches. Progress towards the full 'passport' could be tracked as an indicator of how well school environments are helping to develop the *knowledge and skills* needed for global citizenship and sustainable development.	The data is collected using a multi-method approach, including participants' self-evaluations using a 'Progression Pathway Rubric'. The Pathway is completed by participants at the end of the Global Issues Course and Volunteer Programme and is designed to support students to reflect on the different opportunities for continuous engagement, what they have done, and what they would like to do as a result of their participation in the course. SUAS measures the action dimension not by *what* actions are taken but by *how* participants engage with action options. • OUTCOME: Participants will be familiar with a range of action pathways which they can take to create positive change in the world. • INDICATOR: Change in participants' level of awareness of different ways that they can bring about positive change.	While acknowledging the importance of standardised and comparable indicators, this allows for the development of locally valid indicators. ESD and GCE are transformative so it is important to measure change. Provision of Education on Sustainable Development and Global Citizenship measured using context, input, and process indicators: ☐ The presence of concepts of global citizenship and sustainable development in the national education policy framework ☐ The presence of concepts of global citizenship and sustainable development in the curriculum ☐ The presence of concepts of global citizenship and sustainable development in teacher education curriculum ☐ The presence of concepts of global citizenship and sustainable development in student assessment tools ☐ The presence of learning materials and resources on sustainable development and global citizenship to assist teachers/educators in the classroom

However, the audit activities are not teaching and learning activities themselves; rather, they are intended to bring out existing views, misconceptions, and gaps in knowledge rather than to address them. Teachers must therefore be prepared for controversial issues that may be raised through the activities that they should not necessarily challenge, as this would influence the audit.

Scores on a 'participation pathway rubric' are collected from a variety of development education projects and collated to track citizens' ability to work effectively for a more just and sustainable world.

It suggests a series of seven general action pathways and captures participants' inclinations to engage with each pathway.

Suas also track the number of participants who progress through the three strands of the programme and follows up with a proportion of alumni online to ascertain other actions they have taken on their own initiative to further their involvement in global citizenship.

☐ Percentage/number of teachers trained in concepts of sustainable development and global citizenship

☐ An enabling local environment for learners and educators

Learning Outcomes on Sustainable Development and Global Citizenship measured using values-based approach to develop 'project level' indicators and tools to identify, capture, evaluate, and communicate less-tangible domains or competencies such as knowledge, attitude, and practice, hence strategic choice of the KAP survey.

Administer a KAP Survey for baseline audit.

Administer KAP Survey again after GCE and ESD activities and compare findings with baseline data to measure change.

Thematic template analysis used to allow for local understanding of concepts.

Knowledge, Attitude, and Practice used to report at national/EU level as outcome indicators.

Formal learning	Non-formal learning	Can be used in formal, non-formal, and lifelong learning approaches
Both monitoring and evaluating progress in GCE	Both monitoring and evaluation	Both monitoring progress and evaluation of ESD and GCE

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This paper is prepared by