

SDG 4.7.6 BREADTH OF SKILLS INDICATOR

INTERIM PILOT REPORT

This document summarises two interim reports. One report is a description of the pilot of three tools prepared by the National Foundation for Educational Research (NFER)¹, and includes approach to development of the tools, the analytic approach, and interim results of the pilot across two countries. The second report is prepared by Esther Care, and is a description of the experiences of the countries participating in the pilot.

SDG 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

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Abstract

This summary report describes the process and outcomes of a pilot of a thematic indicator for Sustainable Development Goal 4.7, referred to as 4.7.6. The indicator has been developed to capture the opportunities provided by education systems for students to develop a set of enabling competencies that underlie the concepts of education for sustainable development and global citizenship. The indicator is populated by responses from education system, school, and teacher levels. This report provides information about the process of piloting three tools developed to capture information across these three levels in three countries - Bhutan, Costa Rica and The Gambia. The report, based on data capture by tools, and on qualitative feedback from the three countries, shows that the overall process is manageable, that the tools require some enhancements to facilitate easier engagement, and that the pilot teams have confidence that respondents to the tools can provide valid information based on the questions posed.

Background

The conceptual framework for Indicator 4.7.6 draws on literature related to 'breadth of skills' (Anderson et al., 2016; Care & Anderson, 2020) that underlie global citizenship education (GCED) and education for sustainable development (ESD). The framework is based on concepts of intended, planned, implemented and experienced environments, as captured through system, school, and classroom teacher evidence. The argument is made that opportunity for GCED and ESD lies in foundational and enabling competencies development as opposed to focus on the substantive content of global citizenship and sustainable development.

The new indicator, 4.7.6, is proposed as follows:

“Extent to which national education policies and education sector plans recognize a breadth of skills that needs to be enhanced in national education systems”.

Following drafting of a concept note by the Breadth Task Force in 2019, a more comprehensive conceptual framework and measurement tools were created in 2020. The tools were used in this pilot.

Methodological Approach

The tools were designed to collect information that would indicate how different levels of an education system might provide sufficient opportunities for the development of a breadth of skills (BoS) (Table 1).

The focus of 4.7.6 is on the intended, planned and implemented environment. This includes information on countries' incorporation of the breadth of skills at the different levels of the system, from the general sets of policies to the learning in the classroom. At the same time, the current approach is developed with practical considerations in mind, thus looking at evidence sources that would be most feasible for countries to access.

Table 1. Methodological approach

Level of Education System	Designation	What it means	Indicative sources
System	Intended Environment	National view of desired educational environment and experience which supports the development of a breadth of skills	National education policies; education sector plans and budgets; national, provisional or state curricula; teacher education standards; centralised school inspection systems
School	Planned Environment	School vision of desired educational environment and learning opportunities which supports the development of a breadth of skills	School policies, academic organisation, scheduling and extra-curricular activities, INSETT provision, school budgets, school performance management
	Implemented Environment	What and how learning opportunities are created within schools which support the development of a breadth of skills	School surveys, lesson plans and schemes of work, activity records, evidence of wider school activities (e.g. school gardens, clubs)

Level of Education System	Designation	What it means	Indicative sources
Classroom	Experienced Environment	Opportunities to engage with learning through teacher-student or peer-to-peer interactions in the classroom which support the development of a breadth of skills	Student surveys, observation of lessons and broader school activities
	Internalised Learning*	What students have learned and developed through the interactions in the classroom	Student-produced classwork, low-stakes assessment data, evidence of broader classroom activities

The conceptual framework takes a comprehensive approach in considering the different levels of education system, starting from the level of the government (the system level), the school level and ending with the classroom level. This allows analysis of the learning environment at different levels of generalisation (from more general policies, to the more practical implementation at the classroom level). It also allows for the comparison between the intended learning environment (supported by education policies, education sector plans, etc.) and the learning environment.

The approach is *country-oriented*. It relies on the local knowledge and understanding, to provide information on how each education system might have its specific ways of supporting 4.7, based on the country-produced or collected information. It can be used by countries for their own analyses and/or capacity building, using the more extended responses across the levels and thematic areas.

Measurement Framework

The measurement framework is intended to operationalise the conceptual framework (NFER, July 2020) to measure SDG 4.7.6. Within each level of the education system it is possible to address different aspects of learning and there are a wide range of possible indicators. The indicators selected are neither exhaustive nor comprehensive, but intended to provide a pragmatic view of the extent to which breadth of learning opportunities are

created within an education system taking into account the practicalities of collating data and avoiding this becoming an onerous task for countries. There are three thematic aspects within each level:

Teaching and Learning, which covers the indicators related to the vision/curriculum, pedagogies, teacher training, policies and materials that support breadth of skills at the system, school and classroom levels;

Assessment and Accountability, which covers the indicators related to school accountability arrangements and students' assessments for monitoring and supporting breadth of skills;

Enabling Environments, which covers the indicators related to the institutional arrangements, facilities, budget, policies and practices to support a positive learning environment and to support school engagement with the community.

The themes were used to develop items to be included in the measurement tools. There are three tools: the system survey, the school survey, and the classroom teacher survey. The tools will be used to assess the extent to which countries are recognising a breadth of skills and fostering opportunities for their development across the above-mentioned aspects at the system, school and classroom level. It is expected that the tools will enable a comparison of the support for breadth of skills through the system-lens or through the thematic aspects-lens, as well as having an aggregate measure of the general support for the breadth of skills. Thus, in addition to the primary goal of the 4.7.6 reporting, the framework also enables the education policy-makers, researchers, practitioners, and other relevant stakeholders to use the tool to review a system's support for the breadth of skills.

Tools

The tools required participants to respond to a set of questions, each of which required a closed response, an open response, and provision of evidence in support.

System-level tool

This survey was intended to be completed by respondents within the Ministry of Education or an equivalent body, with a focus on the *intended environment*. The questions largely focus on an exploration of whether education ministries' overarching policies and frameworks included reference to breadth of skills, and thereby contribute to creating opportunities for the development of a breadth of skills.

School-level tool

This survey was intended to be completed by school leaders or members of a school's senior management team. It is focused on concepts aligned with the *planned environment*

and the *implemented environment*. The tool expanded on the themes identified at the system-level and translated them into asking whether, for example, their schools' policies, frameworks, facilities and budgets accommodated learning opportunities for a breadth of skills.

Classroom teacher-level tool

The survey is focused on the *implemented environment* through capturing teachers' perspectives and awareness of other designated levels of the conceptual framework. The tool explores aspects related to breadth of skills, including whether teachers are familiar with their country's school policies and frameworks; assessment of students' work and provision of a safe environment for the promotion of students' safety and well-being.

Alignment across tools

To aid triangulation, questions on a particular feature of education within each aspect were asked at all three levels. For example, to explore teacher and student-centred pedagogies within the teaching and learning aspect, the following questions were asked across the three levels:

- System-level: Are there policies/documents specifying teachers' competencies or pedagogies related to a breadth of skills e.g. through teacher education or professional development?
- School-level: Do teachers in your school actively promote opportunities for students to develop a breadth of skills, through the use of different pedagogies to promote students' breadth of skills?
- Classroom teacher-level: Do you use both teacher-centred and student-centred pedagogies?

Administration

Administration guides and tools were provided in Microsoft Excel format to pilot country teams. In principle this would enable participants to complete the tools on a computer, if the technology is available, thus reducing the demands on data-entry that paper-based tools would create.

Pilot data

Following the development of the conceptual framework, measurement framework, rubrics and tools the instruments were piloted in The Gambia, Bhutan and Costa Rica in September 2020.

To date, the data for The Gambia and Bhutan only have been analysed. In each country a similar approach was followed to pilot the tools; an in-country administration team received

the tools, administration guides and associated documents before selecting a small convenience sample of schools to which the tools were administered. For the purposes of this pilot all schools selected were primary schools, with Grades 4-6 teachers targeted.

Data analysed for Bhutan included one system level dataset, three schools' datasets, and 11 school teachers datasets. A collated set of responses were returned using the data entry tool, with supporting evidence provided in separate .zip files.

Data analysed for The Gambia included one system level dataset, five schools' datasets, and 20 school teachers datasets. The tools were administered in paper form, with enumerators then entering the data in the Excel survey tools. The Gambia returned responses as a set of excel documents with embedded evidence, from which collated data were extracted through use of an Excel macro.

Reporting

For each of the identified measurement levels (*system, school, classroom*) and for each of the identified aspects (*teaching and learning, assessment and accountability, enabling environment*) a rubric was developed which defines the rating scale and criteria for a country to be designated as having achieved a given standard. Ratings were set as *meets, partially meets, and does not meet*. The rubrics for judging the extent to which countries have policies that may support breadth of skills for the system, school and classroom level are provided in Table 2.

Table 2. Indicator system level rubrics

SYSTEM LEVEL RUBRIC	DOES NOT MEET	PARTIALLY MEETS	MEETS
OVERALL SYSTEM LEVEL	The country meets none of the following: (1) has clear policies in teaching and learning supporting breadth of skills (BoS), (2) has clear policies in assessment and accountability supporting breadth of skills, and (3) has an enabling environment that supports breadth of skills.	The country meets one or two of the following: (1) has clear policies in teaching and learning supporting breadth of skills, (2) has clear policies in assessment and accountability supporting breadth of skills, and (3) has an enabling environment that supports breadth of skills.	The country meets three of the following: (1) has clear policies in teaching and learning supporting breadth of skills, (2) has clear policies in assessment and accountability supporting breadth of skills, and (3) has an enabling environment that supports breadth of skills.

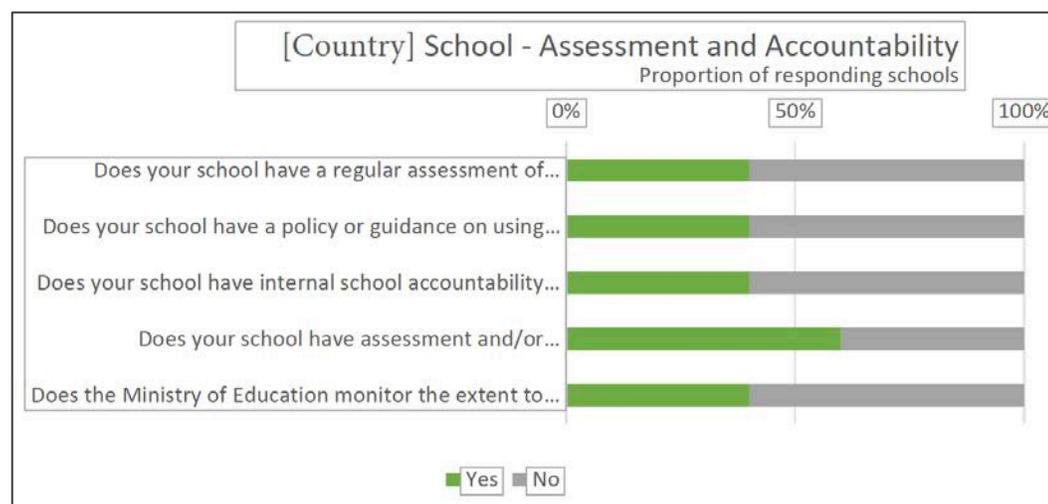
SYSTEM LEVEL RUBRIC	DOES NOT MEET	PARTIALLY MEETS	MEETS
TEACHING & LEARNING	The country meets none or one of the following: (a) BoS mentioned as a priority in the vision/mission, curriculum or other statements specifying goals for the learning system (b) policies specifying teachers' competencies or pedagogies related to BoS, (c) national policies that favour the development of BoS at the school or classroom level, (d) teaching or learning materials that support the BoS, and (e) has teacher training policies supporting breadth of skills.	The country meets two or three of the following: (a) BoS mentioned as a priority in the vision/mission, curriculum or other statements specifying goals for the learning system (b) policies specifying teachers' competencies or pedagogies related to BoS, (c) national policies that favour the development of BoS at the school or classroom level, (d) teaching or learning materials that support the BoS, and (e) has teacher training policies supporting breadth of skills.	The country meets four or more of the following: a) BoS mentioned as a priority in the vision/mission, curriculum or other statements specifying goals for the learning system (b) policies specifying teachers' competencies or pedagogies related to BoS, (c) national policies that favour the development of BoS at the school or classroom level, (d) teaching or learning materials that support the BoS, and (e) has teacher training policies supporting breadth of skills.
ASSESSMENT & ACCOUNTABILITY	The country meets none of the following: (a) has accountability arrangements promoting breadth of skills, and (b) has assessment policies targeting breadth of skills.	The country meets one of the following: (a) has accountability arrangements promoting breadth of skills, or (b) has assessment policies targeting breadth of skills.	The country meets two of the following: (a) has accountability arrangements promoting breadth of skills, and (b) has assessment policies targeting breadth of skills.

SYSTEM LEVEL RUBRIC	DOES NOT MEET	PARTIALLY MEETS	MEETS
ENABLING ENVIRONMENT	The country meets none or one of the following: (a) has institutional arrangements supporting breadth of skills, (b) has budget supporting breadth of skills,	The country meets two or three of the following: (a) has institutional arrangements supporting breadth of skills, (b) has budget supporting breadth of skills,	The country meets four of the following: (a) has institutional arrangements supporting breadth of skills, (b) has budget supporting breadth of skills, (c) has policies

Scoring and rating

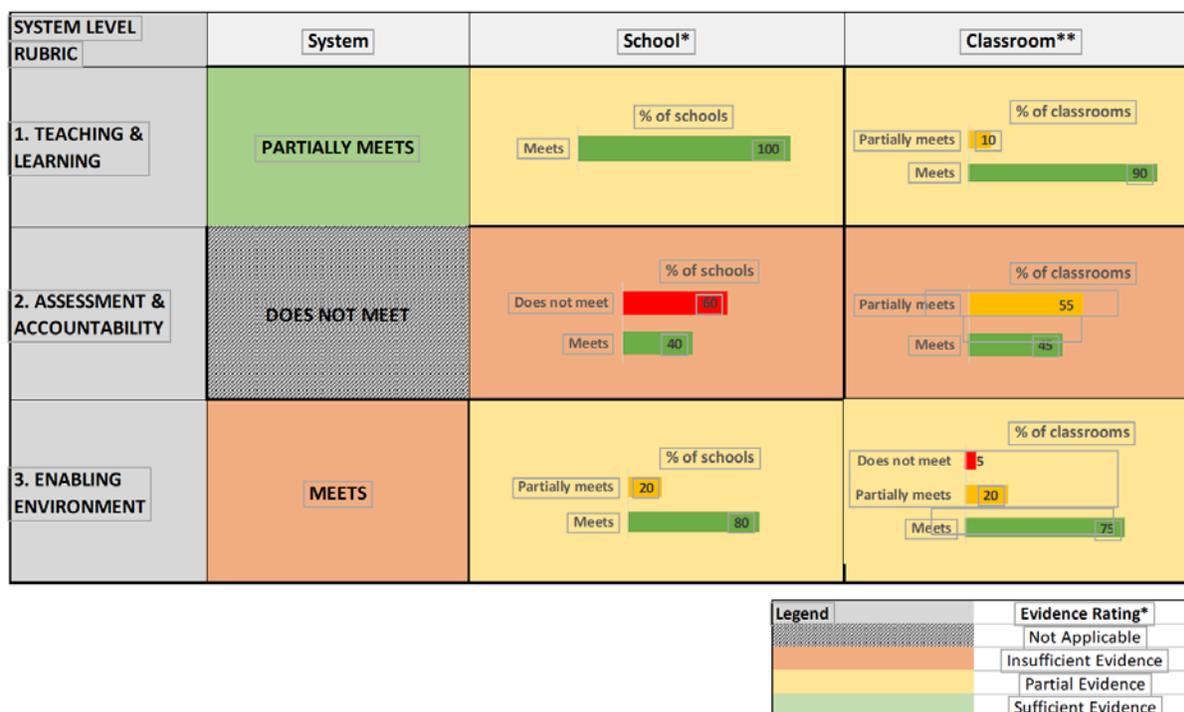
Responses to the questions for closed, open, and evidence are scored. Judgment is used in the scoring of the open (supporting commentary) responses, and the actual evidence provided. Figure 1 provides an example of school level reporting for the Assessment and Accountability theme on closed responses. The 'Yes' responses to the questions across the sampled schools are aggregated. The same aggregation approach is used for the teacher-level tool responses.

Figure 1. Example of aggregated scoring of closed responses



These aggregated responses are super-imposed against ranking of supporting commentary and evidence as shown in Figure 2 for a final reporting on a country. The colours represent the evidence rankings.

Figure 2. Example of country summary report



Country participation

The participating countries of Bhutan, Costa Rica, and The Gambia constituted a convenience sample. Each of the countries have signalled over previous years their interest in integrating a broad range of skills into their curricula, and so had a reasonable understanding of the notions introduced by terms such as 'breadth of skills', 'transversal competencies', '21st century skills' and so on. In both Bhutan and The Gambia, English is widely used; Costa Rica is Spanish speaking. Pilot materials were provided in English; these were translated into Spanish by the Costa Rican team.

In Bhutan, the National Coordinator and team was in the Policy and Planning Division of the Ministry of Education; in Costa Rica, the National Coordinator and team was from the Fundación Omar Dengo; and in The Gambia, the pilot was led by the National Commission of UNESCO with the team from the Ministry of Basic and Secondary Education. Each country participated in virtual meetings and/or focus groups with the UIS Pilot Coordinator, as well as providing written responses to questions posed about the experience of the pilot process. The National Coordinator (NC) for each country expressed confidence in the validity of the data collected, and had no ethical or privacy concerns.

Bhutan

The system level tool was completed by senior officials in the Policy and Planning Division of the Ministry of Education. For the school and classroom teacher level, Bhutan's NC managed the process remotely. With schools closed due to the coronavirus pandemic, the NC facilitated the school and teacher data collection through the District Education Officer of a central district. The district is known to have relatively good internet access, with teachers likely to be able to participate remotely. The District Education Officer randomly selected four schools from within the district. The NC adapted the [Guide_pilot version] for use by the schools and teachers in order to facilitate collection of evaluation data as well as actual tool-based data collection. Translation from English was not necessary.

Costa Rica

The Costa Rican pilot was undertaken by the Fundación Omar Dengo, which engages closely with the Ministry of Public Education. The foundation has been deeply engaged in Costa Rica's shift towards 21st century skills for the past decade, and has particular expertise in the development of information and digital literacies. The team at the foundation reached out to the ministry for identification of ministry officials, and to two regional offices of the ministry to request recommendations to schools. The Fundación collected data from four recommended schools within each of the territories of Turrialba and Pérez Zeledón to participate, and their 15 teachers. Two sets of the system level tool were completed by the Director of the Curriculum Development Directorate and her staff.

The Gambia

The pilot by Gambia was facilitated by the UNESCO National Commission and the Ministry of Basic and Secondary Education, and led by an NC with expertise in the field of 21st century skills, as well as education and educational assessment more generally. The NC assembled a team of ministry system as well as school-based educators to implement the project. Schools were selected based on physical accessibility (given difficulties associated with the rainy season), and willingness and availability of school leaders to participate.

Evaluation

Process

The pilot process flowed smoothly overall. This was due in large part to the generosity of participating countries, their NC, and their teams. Undertaken during a time of major disruptions to education sectors and their stakeholder communities, each country took slightly different approaches to data collection. The process was undertaken within a very

short period, with countries implementing data collection within one to three weeks of initial recruitment by UIS. In some cases communication both between countries and UIS Pilot Coordinator, and within-country, was not easy, due to poor cell phone and internet connectivities, some of these associated with the rainy season. In addition, with schools not in session due to a combination of school holiday periods and remote learning associated with the coronavirus pandemic, each NC adjusted their recruitment activities within country, facilitation of data collection, and collection itself.

Note that the three countries are all relatively small in population, ranging from around 772,000 in Bhutan, through 2.4 million in The Gambia, and 5 million in Costa Rica. This may have contributed to the ease of the overall process, as did the status and efficiency of the NC and their teams. Given the difficult circumstances under which the pilots were undertaken, it is reasonable to assume that in normal circumstances, implementation should be no more difficult than during this period.

Country experience of use of tools for data collection and entry

Each of the three tools was presented as embedded in its Excel spreadsheet, which latter had multiple tabs to provide explanations of how to complete the tools. Navigating back and forth across tabs was experienced as cumbersome by some respondents, and they experienced some difficulties in reviewing the information they had entered. A second issue concerned how respondents were to provide evidence to support responses to questions; the method of embedding evidence within the spreadsheets proved to be inadequate. An additional issue was encountered in transfer of data from the tool spreadsheets to country-level datasheets. NFER's development of an automated process for this is a solution for the current versions of the tools.

Country experience of relevance and appropriateness of items in tools

Perceptions of relevance of questions/items on the tools varied somewhat across the respondent groups - system, school, and classroom teacher. For example, in one country some questions/items that dealt with matters of assessment and of budgets were perceived as irrelevant or inappropriate variously at teacher and at school levels, since some of these matters do not fall within the purview of these levels within the system. This may imply a need to re-think the triangulation of information across the three levels across the three themes. Such a need would depend on the different structures of education systems and the degree to which there is central control versus devolution of responsibilities down through the system.

Some concerns were expressed by the three NC about literacy levels of some respondents, and familiarity with some of the concepts embedded in items.

Provision of evidence may constitute a potential difficulty - beyond that associated with facility with the tool. Types of evidence required may be less clear at the teacher level in particular, such that clearer guidelines may need to be provided. Whether this in fact is an issue could be resolved by piloting within a country that clearly meets provision of opportunity to develop BoS.

Country time required

The amount of time reported by the pilot countries as required to complete the exercise varied widely. The range is in part attributable to slightly different processes undertaken by the countries. The Gambia manually transferred information from hard copy materials to tool

sheets which took three days. Note that access to computers and computer literacy may impact on time taken. Costa Rica transferred data from the Excel tools into the Country Database which took the equivalent of one day. Bhutan did not complete this final step due to timing issues, and in order to allow for NFER to pilot a macro approach to the transfer.

In terms of overall turnaround times, Bhutan reported that turnaround at system level was one day, at school leader level one week, and at teacher level two weeks. Actual time needed for response was not reported. Note that these turnaround times may be unique to the coronavirus impact and the total reliance on virtual communications. In The Gambia school and teacher data collection took approximately a half day for each school, in addition to a preliminary meeting to explain the process. Costa Rica reported that the entire process, including coordination time, required 14 person days - this included translation of the tool from English to Spanish. Actual facilitation of data collection was estimated at 3 days. For each individual respondent, a wide range of time taken was reported with an average of 3-4 hours for the teachers. This included, of course, the sourcing and copying of evidence as required.

Scoring

The scoring approach adopted for the pilot seems adequate, relying as it does upon the countries' self-reported responses before providing a confidence rating for the supporting commentary and evidence. The main purpose of the scoring should be to provide a metric to evaluate to what extent countries are meeting SDG 4.7.6. A challenge faced in all attempts to provide a measurement of 4.7 to date is the reliance on self-reporting. Whilst this approach does not overcome this, it does attempt to mitigate it by requiring evidence. A secondary purpose of the scoring mechanism is to evaluate to what extent countries are meeting the indicator at each level (system, school, class) and aspect (Teaching and Learning, Assessment and Accountability, Enabling Environment). This scoring system provides feedback which may be used to inform improvement in the development of opportunities which support BoS within an education system.

Tools

The tools perform appropriately in mapping the key levels and aspects of SDG 4.7.6 as outlined in the conceptual and measurement frameworks. Similarly, the rubrics appear to function well, although they may need some refinement if changes are made to the items and responses.

Key concerns are linked to the medium used for data collection, as Microsoft Excel proved cumbersome. Commercial survey management solutions exist which include the facility for respondents to upload documents. Working with large excel files proved time consuming for both countries and the data analysts.

Data Quality

A significant number of responses did not provide comments which supported the chosen response, while there was a limited amount of supporting evidence provided across the board. It should be possible to improve this through providing response guidelines which more clearly articulate the expected information to be provided in the commentary and/or through the introduction of information sessions with respondents. The major obstacle remains the availability and accessibility of documentary evidence for respondents to provide at teacher and school level, and the identification of a more efficient mechanism for collecting this evidence.

Scoring

The scoring approach adopted seems adequate for the measurement of 4.7.6, providing both an evaluation of the extent to which countries are meeting 4.7.6 in tandem with a confidence rating. The scoring of self-report responses proved straightforward and could be automated in future to reduce manual efforts. However, the subjective judgements required to score the comments and evidence require a familiarity with the content matter of 4.7.6, the frameworks for the measurement indicator and rubrics. For a complete response with full supporting evidence it took between 20 and 30 minutes for members of the research team to score responses for each individual survey. If this were to be scaled up it would require considerable effort for a team within UIS to conduct this scoring; it may therefore be the case that it would be more appropriate to develop a sampling strategy for the scoring of the school and classroom comments and evidence. Further developing the guidance for respondents and scorers might also reduce the time requirement.

Recommendations

The approach taken in the development of the pilot tools and data collection appears likely to provide information needed to contribute to monitoring of SDG 4.7. The tools developed have the capacity to contribute information from education systems to establish whether they are providing the opportunity for students to experience a learning environment that values a broad range of skills that will contribute to development of global citizenship and sustainable development.

Evaluation of the approach has been subjected to two questions. First, is use of the tools viable? Second, do the tools elicit and report useful information that will support meeting of sustainable development goals? Review of the process and of the data collected answer in the affirmative.

Main recommendations are:

- (1) stream-lining of format and provision of multiple access types;
- (2) modifying a very few questions/items concerned with assessment and budgets;
- (3) ensuring information sessions are held with respondent groups to ensure interpretability
- (4) piloting an country selected as likely to meet all conditions, in order to examine more deeply the issue of evidence provision.

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