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Education for people and planet: Creating sustainable futures for all

Towards the development of an international module for assessing learning in Global Citizenship Education (GCE) and Education for Sustainable Development (ESD): A critical review of current measurement strategies

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Abstract

The aim of the study is to support the development of an indicator for target 4.7 of the UN sustainable development goals (STG). The study provides a conceptual framework for measuring the competences from global citizenship education (GCE) and education for sustainable development (ESD) from a review of the literature and then an audit of the different aspects of these competences. The study establishes the extent that these competences can be measured using existing data. The results of this analysis show that most dimensions of GCE can to some extent be measured by the existing IEA ICCS 2009 and 2016 datasets and an outline of how this data can be used to develop an initial indicator or set of indicators for target 4.7 is given. However, in contrast, the study finds that existing data is much more limited on measuring ESD and the existing data does not provide enough coverage for indicator development at the moment. The study recommends that in order to provide a more comprehensive measure of both these competences it would be necessary to develop a new module on GCE and ESD. After considering the options, it is concluded that the most realistic option is for this module to be attached to the existing IEA ICCS survey. The study concludes that an indicator of all citizens across the whole world is probably unrealistic considering the challenges faced, but what could be achievable is an indicator covering some countries from each region from around the world. To make this a reality considerable political effort and search for funding would be required to engage new regions to the ICCS survey, for example, from Africa and the Middle East.

Introduction

The new 2015 UN Sustainable Development Goals have been created with the aim to support people and the planet towards peaceful, sustainable development and prosperity for all, in particular those currently in poverty (UN 2015). Within these goals there is one broad education goal on 'Ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all' which contains 10 specific targets. One of these targets, 4.7, highlights the knowledge and skills that are needed to promote a more sustainable future:

'*By 2030, ensure that all learners acquire the 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.*' (Target 4.7 from the UN SDG 2015)

An independent research team hosted by UNESCO, known as the Global Education Monitoring Report (or GEM Report), is interested in measuring and monitoring progress towards achieving this target. It has been given a mandate to monitor progress of all the education targets as well as commitments made by the international education community at the World Education Forum 2015. The first edition of the new global monitoring report series will be published in 2016. This series aims to analyse global education trends and advocate for effective education policies and practices in relationship to the SDGs. To achieve this aim, GEM Report researchers have requested support on the following questions:

1) How are GCE and ESD learning outcomes currently conceived of and defined in existing assessments and surveys?
2) What are the main measures and sources of information on GCE and ESD learning outcomes currently available globally, regionally and nationally? To what extent can data generated by these sources be compared across assessments/study, over time, and across countries and regions? What are the most critical gaps in existing data sources?
3) What are the challenges, including contextual obstacles, in developing a comparable learning assessment module to monitor global, regional and national progress towards GCE and ESD acquisition among students and adults?
4) Given the above challenges, what efforts need to be undertaken in order to develop a global or regional module for learning assessments in GCE and ESD? What recommendations should be put forward to policy makers at the national, regional and international levels to support these efforts?

A number of decisions have already been taken for reporting purposes and these are described below.

1) The focus for measuring and monitoring should be on the concepts of global citizenship education and education for sustainability, which are currently understood as broad umbrella concepts.
2) That any strategy to measure learning outcomes related to GCE and ESD (knowledge and skills, attitudes, values and behavior) should recognize that they are affected by various inputs (teachers' competencies and preparation, resources, learning environments), process factors (teaching methodologies, types of actions, learners' engagement and participation) as shown in Fig.1. Nevertheless, these inputs and processes are not meant to be part of the measurement strategy per se.

3) Learning outcomes/competences in GCE and ESD should be split according to cognitive, social-emotional and behavioural aspects, which should be understood as mutually reinforcing each other.
4) The measurement strategy and monitoring framework to be developed should seek to fulfil 3 criteria: (i) global, regional and national comparability, (ii) policy relevance, and (iii) feasibility in terms of data collection requirements.

Figure 1: Framework for monitoring and measuring progress towards GCED and ESD

	Outcomes for individuals
Inputs and processes Formal education **Traditional, structured school -based approach** **(e.g. curriculum, textbooks, pedagogy/andragogy, teacher preparation and training, and learning environment/facilities)** *Typical providers: state, NGOs, private sector (or partnerships)*	**Knowledge & skills[1], attitudes & values, behaviour (e.g. for better understanding of the world and the complex, multilevel issues and processes therein; affective, psychosocial, physical adaptation to living peacefully and respectfully; applications of ethical behavioural conduct and performance, engagement, etc.)** *Outcomes for students (e.g. PISA, ICCS)* *Outcomes for adults* **(e.g. WVS, Barometers, PIACC)**
►	**Outcomes for society**
Inputs and processes Non-formal education **Structured, non-formal, extra-curricular programs and activities** **(e.g. internships, youth movements, sports teams, scouts, etc.; civic education, literacy / numeracy programmes, etc.)** *Typical providers: state,*	Accomplishment of Target 4.7: 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

[1] Although Target 4.7 refers only to 'knowledge and skills', the latter concept can include an array of cognitive and non-cognitive social, emotional and behavioral aspects of competences. For the purposes of this study, we include additional learning outcomes, classified as 'knowledge, skills, values, attitudes and behaviour'.

private sector, NGOs (or partnerships)	development
	Context: Economic, political, historical, social and environmental conditions

In the context of the above specifications the aim of this study is to support the development of indicators for target 4.7 by:

1) Creating a conceptual framework for measuring the individual competences from ESD and GCE by:
   a. Defining the competences from GCE and ESD utilising existing literature (chapter 1)
   b. Identifying the different aspects of these competences from an audit of existing frameworks(chapter 2)
2) Establishing the extent that these aspects of competences can already be measured using existing data (chapter 3)
3) Identify the challenges of creating an indicator on GEC and ESD that encompasses the whole world (chapter 4)
4) Provide recommendations regarding short, medium and long term strategies for the creation of indicators for target 4.7. These will include short term and medium term strategies that will be based on existing data. (Chapter 5) The long term strategy will include 3 alternatives;
   a. how existing studies can be developed to enhance the quality and coverage of the indicators for GCE and ESD with a focus on the IEA ICCS study
   b. how a new household study could be created on GCE and ESD
   c. how different types of indicators could be developed using data from the Internet
5) Conclude with most optimal strategy for the development of indicators for target 4.7 to aid policy and practice (Chapter 6)

The order of the paper will follow the above steps.

1. Defining the competences from GCE and ESD

1.1 Concepts

This first chapter will tease out how GCE and ESD can be defined in order that a conceptual framework can be developed for the building of indicators. The learning outcomes from GCE and ESD are considered by UNESCO as the higher order competences within Target 4.7, which outlines the knowledge, skills, attitudes and values of all learners to promote a sustainable future. These competences are typically defined as including the values of *sustainability*, *human rights, gender equality, peace and non-violence and appreciation of cultural diversity,* which are referred to within Target 4.7. Both concepts have considerable and distinct histories within the work of UNESCO and are considered to be umbrella concepts that encompass a broad range of knowledge, skills, attitudes, values, identities and behaviours. As with many similar concepts in the social science field the precise definitions are contested. This chapter seeks to provide some clarity to these concepts and highlight the tensions regarding defining these concepts. First, the chapter will explore the concept of GCE and then the concept of ESD.

1.2 Global Citizenship

In order to understand the concept of global citizenship we begin from the term citizenship. In legal terms, citizenship refers to the legal rights and obligations bestowed on an individual by the state in which they are citizens, denoted by their nationality. The legal definition highlights the important relationship between the citizen and the state. Marshal's seminal text in 1950 defined these rights in three domains: civil rights (equal, legal rights offering an individual justice and freedom), political rights (the right to influence decision-making, such as through voting and standing for public office), and social rights (access to opportunities that support the first two rights, such as health care and education). Nevertheless, this definition has been considered too narrow in modern democratic society for a number of reasons (Hoskins et al 2010). As Hoskins states, having legal rights is insufficient to enable equal possibilities for all citizens to exercise their rights. Second, gaining and maintaining rights requires constant action and vigilance from citizens, and a legal definition does not encompass these processes. Third, obligations of the state upon the citizen are not always legally framed, but occur as citizens' perceptions of norms; these may therefore not be expressed within the legal definition. Fourth, the relationship between the citizen and the state ignores the relationship between citizens and the associations they form, as well as the importance of associative life in the balance of democracy. In this regard, citizens need to participate in civic and political life in order to ensure the accountability of the state and the legitimation of democracy. Finally, citizenship as a legal concept does not account for individuals who are not citizens but have rights and responsibilities. As a result of these limitations the term Citizenship or Active Citizenship has more recently been defined and used to denote not only the rights and responsibilities of individuals but also the need for political action and associative life based on the values of human rights and democracy (Hoskins and Mascherini 2009).

The concept of Global Citizenship as opposed to citizenship or active citizenship more clearly situates the concept of citizenship within a broader geographical location than the nation state towards being a citizen of the world (Davies 2006). Thus the legal notion of the citizen with rights and responsibilities within a particular nation state is replaced by the less formal and more cosmopolitan sense of belonging and identifying with a global community, a common humanity and sense of solidarity across the planet (UNSECO 2015a). Held's 2010 seminal vision of cosmopolitanism describes a world where 'each

individual in the world is a moral agent entitled to equal dignity and consideration' (Held 2010 p.10) and where the priority of the nation state is diminished.

The concept of Global Citizenship is a logical response to today's global world in which socio-political and environmental problems are happening and decisions are taken on an international level, for example, climate change, mass migration, international terrorism, world trade/global corporations and social media and information technology. It also gains purchase when individual political engagement is acted at the international level on global issues such as climate change, poverty or war. Nevertheless, there are a number of challenges regarding using this concept. First, international mobility and legal citizenship are still controlled by the nation state and with the current issues of international terrorism, migrants and refugees these controls look only to become stricter (Roman 2003). Second, systems of formal political engagement and representative democracy and legal redress are still mostly located at the level of the nation state (Davies 2006). There are of course exceptions such as the decision making system of the European Union, including the European Parliament and Court of Social Justice where some sovereignty has been given up and pooled at the regional level. Third, citizenship education has historically formed part of nation education system and national curricular. It has been used as the vehicle for nation building and the site for the development of the desired national norms of citizens by national governments (Green 1997). GCE has been integrated into or replaced Citizenship Education in many countries nevertheless the power to decide the contents of the curricular rests with national governments and despite world cultural theories position that national curricular are becoming more similar (Ramirez et al 2009) the evidence would suggest that this is much less than expected (Janmatt et al 2013). In summary, the nation state as an actor regarding deciding and enabling citizen's rights and responsibilities and facilitating democratic processes is still strong and shows little sign of fading.

The dilemma regarding the agenda of Global Citizenship is to decide if it is an endeavour to replace or to compliment the nation state with a global system of governance. Should a global system of governance or nation states decide upon and enable rights and responsibilities including enabling democratic processes and legal redress against rights abuses (UNESCO 2015a)? I would argue that it is more pragmatic and realistic at the global level to expect to compliment and allocate responsibility on a case by case basis and that supporting democratic practices at local, national, regional and international level is more likely to be effective in developing and engaging global citizenship if the international implications of decisions at each level are carefully demonstrated. Although contested, I would suggest that participation in representative democracy at all levels is an important part of the skills for Global Citizenship.

One of the main features of Global Citizenship is an understanding of the interdependency and interconnectedness of political, economic, social and cultural norms and decisions between the local, the national and the global levels (UNESCO 2015a). Increasingly nation states and individuals' interests and trajectories are intertwined in each other existence (Held 2010). The consequence of this, according to Davies (2006) is that the global citizen should not only be able to understand and influence local decisions and understand how these will impact on the world but also able to understand and influence decisions taken on a global level. In this regard global citizens are expected to identify social injustices around the world and have the motivation and skills to undertake peaceful action to redress these situations (Richardson 1997). The teaching of GCE is therefore then expected to teach these skills.

Certain cases of GCE have been critiqued for presenting an ideal vision of common humanity that does not present the inequalities of resources available to enable all persons to become global citizens (Andreotti 2006, Dobson 2006, Shiva 1998). Thus learners in these cases of GCE are said by these authors not to be able to identify whose vision of a global humanity is being pursued, and not able to identify who is actually able to be a global citizen i.e. easily crossing boarders and having the power and resources to influence global decision making (Andreotti 2006). The concept of global humanity presented in in certain cases of GCE is said by Dobson (2006) to be based on the liberal citizenship notion of helping others and looking after the poor rather than a more critical citizenship curriculum that would reveal to the learner the realities of socioeconomic inequalities and power relationships between countries and regions. A similar argument is developed regarding inequalities between the rich and the poor within each country regardless of where they live (Shiva 1998) and could be developed regarding other disempowered social groups e.g. based on gender, disabilities or sexuality. Andreotti (2006), highlights how GCE should be changed to identify the responsibility and complicity of each individual in maintaining the status quo as well as current structures, countries and cultures role. To the best of my knowledge the case studies this research critiqued were not specific UNESCO projects on GCE nevertheless these criticisms need to be taken carefully into consideration when developing lists of learning outcomes for such education programmes.

The values of global citizenship are contested between critical citizenship, cultural theorists and more neoliberal norms and beliefs. Global Citizenship, in particular within Higher Education, can be understood from a Neoliberal agenda as developing citizens who are competitive, efficient and productive and who travel the world consuming the diverse experiences and cultures to enhance their individual wealth and careers (Roman 2003). However, typically within more critical citizenship curricular of GCE, UNESCO texts on GCE and the values expressed within goal 4.7 the values of social justice, human rights, gender equality, sustainability and cultural diversity are understood as the central values of Global Citizenship and these values are considered universal and shared values. The extent that these values are or should be considered universal is also contested by some cultural theorists as examples of westernisation and imposition of values on the rest of the world (Spivak 1990). Nevertheless, this study situates itself within the value position of the critical citizenship model and I argue that the values of Human Rights and sustainability form the best set of rules yet that humanity has developed to live together in a fair way even if this presents tensions with some understanding of cultural diversity and tensions with some more neoliberal understandings of competition and growth.

UNESCO research on GCE has not arrived upon a single definition of GCE but has agreed upon a single list of the learning outcomes for GCE. This model is presented below.

UNESCO 2015 model of global competences:

Cognitive	To acquire knowledge, understanding and critical thinking about global, regional, national and local issues and the interconnectedness and interdependency of different countries and populations.
Socio-Emotional	To have a sense of belonging to a common humanity, sharing values and responsibilities empathy, solidarity and respect for differences and diversity
Behavioural	To act effectively and responsibly at local, national and global levels for a more peaceful and sustainable world

There are a couple of gaps in the UNESCO model in regards to the literature. The first gap is the limited stress on understanding and responsibility regarding addressing the inequalities and power relationships between individuals, within countries and between countries. This may be implied within the reference to critical thinking on issues on different levels but it certainly could be more developed. The second gap is regarding democracy, voice, representation and political participation. There is currently no reference in the UNESCO model to cognitive understandings of political institutions and decision making processes at local, national and international level, how they can be influenced including the role of civil society and the media or cognitive understanding of representative and participatory democracy. Politicising injustices and motivation to take action to create social change is also only hinted at within the behaviour dimension. There is also no discussion of collective action and the building of structures to create change. Within the conceptual framework developed for this study these two aspects will be further developed and emphasised.

In conclusion, for the purpose of creating indicators it is possible to define Global Citizenship broadly as rights, responsibilities, actions and identity based on the values of global human rights and the need to create social justice within and between countries and performed at the local, national and global level using both individual and collective action. When individuals are involved in actions and decisions at the local and national level, global citizens would understand the relationship and effect of these decisions at the global level.

1.3 Sustainable Development

Increasingly the issue of environmental sustainability has become more prominent within GCE as one example of how local and national decisions affect others across the wider planet. Based on the Brundtland Report (WCED 1987), environmental sustainability is defined as the quality of nature and environment that is preserved for current and future generations. ESD has to some extent been partly hidden within the debates on measuring target 4.7. Below I will discuss the competence of ESD and the extent that this is separate competence or is simply part of GCE.

The emphasis on sustainability is relevant to discussions regarding global citizenship. The world is faced with immense challenges regarding the environment that also pose serious risk to the world economy and individual well-being (Stern, 2006; IPCC, 2007, 2013). As global warming increases our climate will challenge the way we live today, including less predictable weather patterns, floods and droughts across the world. Tackling climate change requires making difficult decisions at local, national and international levels on how, where, when and which resources should be used for energy and consumption, and the outcomes of these decisions have implications for everyone on the planet.

Starting from the UNSECO literature, ESD is primarily concerned about the environment, including issues of climate change, disaster risk reduction, biodiversity, poverty reduction, sustainable consumption and sustainable production (UNESCO 2015 website). The focus is on two types of action; individual behavioural change towards sustainable consumption and action towards policies and decision making at the local, national and global level towards assuring a sustainable future (UNESCO, UNEP and the government of Georgia, 2012). These actions are called for to be based upon scientific, economic and social knowledge of the environment, resources, risks/uncertainty and possible future scenarios (UNEP

2010) combined with ethical principles and values of social justice, gender equality, peace, sustainable living and human well-being (UNESCO 2009b).

The tensions and complexity within ESD are between the concepts of sustainability and development (Disinger 2010). The questions that placing sustainability and development together raises are, who can continue to develop and grow and how in a world with finite amount of resources and increasing population levels, and who is the arbiter of these decisions? Is the neoliberal position on growth necessarily at odds with sustainability? Or is technology expected to provide the solution to mitigate these difficult decisions and if so who will invest in the technology to provide these solutions?

As with GCE, UNSECO has not arrived at single agreed upon definition of ESD. Anderson (2013 p.3), in her background paper for the 2013/14 Education for All Global Monitoring Report, defines learning outcomes for ESD as the more general/core competence of critical thinking, solving problems, collaboration, managing risks and uncertainty along with:
a basic understanding of scientific concepts, including knowledge of the history and causes of climate change; knowledge of and ability to distinguish between certainties, uncertainties, risks and consequences of environmental degradation, knowledge of mitigation and adaptation practices that can contribute to building resilience and sustainability, understanding of the varying interests that shape different responses to climate change and the ability to critically judge the validity of these interests in relation to the public good.

It could be argued that ESD forms part of the broader concept of GCE and those issues, such as climate change, are simply one domain of interdependency where national, local and individual behaviour and decisions are interlinked in their global impact. In addition, there are considerable crossovers between the two concepts, including the underlying values of human rights, gender equality and social justice. However, I would argue that there are distinct aspects, or at least distinct emphases, playing an important role within the debates on sustainability, and it would not be advisable to miss these by only focusing on Global Citizenship. The specific aspects ESD competences that are less found within GCE such as the ability to distinguish between certainties, uncertainties, risks and consequences of environmental degradation are further detailed in the next chapter below within the audit of learning outcomes.
This chapter has broadly defined the competences from GCE and ESD for the purpose of the creation of a conceptual framework for indicator development. The next chapter will define more precisely the aspects of the different dimensions of these competences by performing an audit of existing frameworks.

2. Audit of learning outcomes from GCE and ESD

The previous chapter has attempted to clarify the concepts of GCE and ESD and identify the tensions from the existing literature. The next step in the creation of the conceptual framework is to identify the learning outcomes/ competences from this education for the purposes of measurement and the creation of indicators. Identifying the competences will enable the operationalisation of the concepts of GCE/ESD into aspects of competences for measurement within either existing or new surveys. The process of developing measurements will inevitably mean losing some of the complexity of the concepts, but not perhaps as much as might be first thought.

To establish the learning outcomes/ aspects of competences from GCE and ESD, an audit has been conducted of existing frameworks developed by UNESCO and from the academic literature. Within the time frame for the consultancy an audit has been conducted of 24 frameworks: 14 texts on GCE and 10 texts on ESD. The full list of documents audited is referenced in the Appendix 1. These lists have been reviewed and reduced using the following selection criteria[2]:
1) clearly defined
2) distinct and not a duplication or a reformulation of another competence (i.e. not literacy and numeracy etc)
3) general (not too specific to a certain context or particular profession)
4) fits within the basic framework, definitions and values established from the literature review (chapter 1)

The final selection of aspects of the competences following from GCE and ESD are detailed in tables 1-6 below. Next to the list of aspects of competences from GCE and ESD in the table is the degree that each of these aspects could be operationalised and measured within an international survey. The purpose of this information is to identify if these measures could be found in existing surveys or developed into future surveys for the development of indicators.

2.1 Global Citizenship
The results of the audit on GCE for the cognitive domain highlight a wide range of cognitive knowledge and skills that need to be tested, including: knowledge, understanding, critical thinking and problem solving about current issues that have an impact at the global, national and local level, the background to these issues, how the local and global interconnect and why different interest groups, dominant norms and the media hold the positions they do and their effect; the ability to critically reflect on one's own culture, its legacies and traditions; knowledge of human rights, awareness of multiple identities and critical thinking regarding inequalities and injustices including those based on gender, socio-economic status, culture, religion, age and other social groups; knowledge about local, national and global governance systems work including knowledge of how to effect change and how democracy works; and the skills to be able to develop and defend an argument and to be able to advocate for others.

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[2] The Council of Europe used a similar approach for its audit of competences for democratic culture and intercultural dialogue (Barrett et al forthcoming).

Table 1. The cognitive aspects of GCE competences developed from the audit of existing frameworks

Use in an International test?	Cognitive aspects of a competence
International	Knowledge, understanding, critical thinking and problem solving about current issues that have an impact at the global, national and local level
International	Knowledge, understanding and critical thinking regarding the background to global issues such as conceptual understandings of social injustice, inequality, peace/conflict, diversity, sustainable development
International	Knowledge, understanding and critical thinking regarding inequalities and injustices within and between countries (in particular north versus south) by understanding the complex structures, systems, assumptions, power relations and attitudes that create and maintain exploitation
International	Understanding of globalisation and the interdependence and connections of global and local concerns
International	Analytic skills to be able to identify the varying interests that shape different responses to global issues like climate change and the ability to critically judge the validity of these interests in relation to the public good.
International	Skills to recognize, decode and reflect critically upon messages from the media and the market
Global aspects International	Knowledge about local, national and global governance systems and structures and their underlying assumptions and power dynamics
International	Knowledge of the institutions of democracy and how representative and participatory democracy functions including the role of NGO's and the media
At a very general level could be in an international test but clearly national variations exists	Knowledge of how to collectively affect systematic change
Knowledge of rights possible for an international survey but responsibilities may have national	Knowledge of what are human rights, civil rights, social rights and political rights and the responsibilities for implementing these rights at the local, national and international level.

variation	
International	Recognise and examine beliefs and values and how they influence political and social decision-making, perceptions about social justice and political engagement;
National survey	Knowledge and awareness of dominant ideology including the elites in each nation and across nations who often impose their values as universal
International (with national input)	Awareness of multiple identities (own and as a community)
International	skills to critically analyse inequalities based on gender, socio-economic status, culture, religion, age and other social groups
National survey	The skills to critically reflect on own culture, its legacies and traditions
Challenging to measure within a conventional test	Skills for cooperation and dialogue with others /conflict resolution/ negotiation/ peace building
International survey	Skills to develop and defend an argument and to be able to advocate for others
International survey	Skills to distinguish a statement of fact from an opinion
National survey	Skills to be able to monitor and influence policies and decisions

The results of the audit also show that there are certainly aspects of GCE competences that can be measured within an international test (Table 1), in particular the aspects such as current issues that have an impact at the global, national and local level like climate change, critical thinking regarding the background to global issues, understandings regarding inequalities and power relationships and knowledge of Human Rights and global governance. It should be acknowledges that developing an international test on GCE is more complex than setting an international maths tests as values cannot be fully separated from cognitive processes. Nevertheless, the IEA ICCS stands as an example good practice in this domain.

To deliver an international test for all students in the world, national and regional variations and contextual differences need to be limited. This means that certain aspects of the competence from GCE cannot be measured, for example, knowledge about local and national governance systems, knowledge of dominant ideology and knowledge of civil rights, social rights and political rights and responsibilities within an individual's own country. These aspects could only be explored through national tests. In order to measure the skills to critically reflect on one's own culture, its legacies and traditions could be even more specific and dependent on each individual participants own specific cultural background. This would more likely to be able to be tested within a critical essay rather than a typical international test format.

Table 2. The social and emotional aspects of GCE competences

Use in an International survey?	Social and emotional aspects of GCE competence
International survey	A sense of belonging to a common humanity, sharing values and responsibilities based on human rights
Sense of belonging could be covered in an international survey	Cultivate and manage identities, relationships and feeling of belongingness at local, national and global level
International survey	Attitudes of care and empathy for others and the environment
International survey	Value of the common good/ solidarity
International survey	Recognise and appreciate difference, diversity and multiple identities, e.g. culture, ethnicity, language, religion, gender
International survey	Values of human rights
International survey	Values of gender equality
International survey	Values of sustainability
International survey	Values of the importance of democracy
International survey	Values of fairness and social justice,
International survey	Takes responsibility for own actions
Challenging for a survey at any level	Responsibility for and complicity in inequalities and social injustices and a realisation of individual benefits from the status quo
International survey	Political Self-efficacy
International survey	Motivation/disposition to care for the common good
International survey	Motivation/disposition to take political action
International survey	Interest in public affairs
International survey	Openness to new experiences and other perspectives

The audit highlights a range of social and emotional aspects from GCE (Table 2) these include; a sense of belonging and identifying with a common humanity, sharing values and responsibilities based on human rights, care for the environment and sustainability, gender equality, importance of democracy, fairness and social justice and appreciating diversity and difference; political self-efficacy, interest in public affairs and motivation to take political action including for the common good and responsibility for own actions and complicity in the status quo.

The social and emotional aspects of the competence from GCE are from the analysis in Table 2 identified as being able to be covered through measurement instruments in an international survey. Items like these are measured frequently within surveys such as the IEA ICCS study, the World Values Survey and various regional barometers. The aspect which would be challenging to measure within a survey is, 'Responsibility for and complicity in inequalities and social injustices and a realisation of individual benefits from the status quo' – this in all likelihood would need to be measured through more qualitative and in-depth study than a survey.

Table 3. The behavioural aspects of GCE competences

Use in an International survey?	Behavioural aspects of GCE competence
International survey	Taken actions at local, national and global levels to create socio-political change
International survey (some national variation in the particular forms)	Undertaken individual actions in representative democracy (voting, standing as a candidate, writing a blog/ using social media for a national or local election campaign)
International survey (some national variation in the particular forms)	Undertaken individual actions as a global citizen (ethical consumption, recycling, writing a blog and using social media for a global cause)
International survey (some national variation in the particular forms)	Undertaken collective action (protests, social movements, strikes, building structures and organisation to challenge the status quo)
International survey – it is less usual to ask for motivation for action but it could be done	Reasons for action to address injustices within or between countries

International survey – challenging in a survey as people will not want to acknowledge that their actions were against HR.	Actions undertaken respected Human Rights

From the audit in Table 3 it is possible to see a diversity of behaviours that are relevant to GCE including a range of individual and collective actions taken in accordance with Human Rights at the local, national and global levels to create socio-political change and the motivation for action based on addressing injustices within or between countries.

The majority of behaviours expected from GCE could be covered through an international survey. The challenge would be to cover the breadth of different forms of actions that are undertaken across different countries of the world and to take into account that not all people in the world have access to all these opportunities to engage in particular online forms of engagement or some live in countries where these actions would contravene the law. Finally, asking people in surveys about whether their actions were responsible or respected human rights is unlikely to function in a survey as people are unlikely to acknowledge participating in illegal actions. Nevertheless, the IEA ICCS study does have a scale (a set of questionnaire items) on dispositions towards engaging in the future in illegal actions.

2.2 Sustainable development

For ESD, in the Tables below (4-6), the aspects of competences highlighted in bold are those that have been more clearly emphasised under ESD compared to GCE. Overall using the findings from the audit it is possible to clarify the distinctions between ESD competences compared to GCE competences. The distinguishing features of the competences from ESD are a greater scientific knowledge, additional skills such as the ability to distinguish between certainties, uncertainties, risks and consequences and to think in terms of time and to plan and imagine future scenarios. In addition, the values of moderation, honesty and integrity and individual everyday actions including lifestyle and employment choices are given greater emphasis within the ESD competence framework than in the GCE model. Below these additional aspects of ESD will be analysed to evaluate the extent to which these aspects of competences could also be analysed within an international survey.

Table 4. The cognitive aspects of the competence from ESD from the audit of existing frameworks

Use in an International Test?	cognitive aspects of the competence from ESD
International	Thinking critically/ Critical awareness/learning to ask critical questions in the context of issues regarding sustainability

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Test	
International Test	Solving problems in the context of issues regarding sustainability
International Test	Analytic skills to be able to identify the varying interests that shape different responses to climate change and the ability to critically judge the validity of these interests in relation to the public good.
International Test	**A basic understanding of scientific concepts, including knowledge of the causes of climate change;**
International Test	**A basic understanding of scientific concepts, including knowledge about disaster reduction**
International Test	**A basic understanding of scientific concepts, including knowledge of biodiversity**
International Test	**A basic understanding of social scientific concepts, including knowledge of poverty reduction**
International Test	**A basic understanding of scientific and social scientific concepts, including knowledge of sustainable consumption and production**
International Test	**Analytic skills to distinguish between certainties, uncertainties, risks and consequences of environmental degradation**
International Test	**Knowledge of mitigation and adaptation practices that can contribute to building resilience and sustainability**
International Test	**Knowledge of the principles of sustainable development and how they can be implemented and the ramifications of their implementation**
International Test	**The ability to think in terms of time – to forecast, to think ahead, and to plan/ imagining future scenarios/ Ability not only to envision alternative futures but also to create reasonable paths of action leading to these**
International Test	**Understand consumer social responsibility and how individual life style choices influence social, economic and environmental development at the local, national and global level**
International	Awareness of civil society's power to initiate alternative ways of thinking and acting/ Knowledge and skills

Test	about stakeholder involvement
International Test	**Basic knowledge about resources; natural, human, financial, technological, organizational, interrelatedness of systems and processes, balances and imbalances**
International Test	**Basic knowledge of economics; economic models and practice, production and trade, multinational companies, social responsibility, savings, loans, investments, financial services and instruments, e-commerce**
National & Regional Variation	**Basic knowledge of consumer rights and responsibilities; laws and norms, agreements contracts, consumer protection policies, transparency/accountability, complaints, redress, replacement, reimbursement, conflict resolution**
International Test	**Basic knowledge of health and safety; food safety, gene-modified organisms, diet and nutrition, ecological/organic food, additives, lifestyle illnesses and epidemics, HIV/AIDS, social services, product safety, labelling and quality control**
International Test	Global awareness; global interdependence, energy, trade, commerce, agriculture, land use, poverty, human rights, labour rights, crime, precautionary principle, fair trade

The results of the analysis for the cognitive domain of ESD (table 4) showed that the vast majority of the cognitive aspects from ESD can be covered within an international test. The issue of consumer rights, however, would differ across countries and regions according to national and regional laws and would need to be questioned in national and regional studies.

There are a number of specific social and emotional values deriving from ESD which could be measured through an international survey (Table 5). These include the values of moderation, responsibility to future generations and importance of addressing environmental issues. The items which would be particularly challenging to measure in a survey would be integrity and honesty as social norms would make it difficult for people to deliberately identify as being dishonest.

There are two new behavioural aspects of ESD (Table 6) that could be measured within international studies: first, living a sustainable life and, second, participating in action to create behavioural and policy changes at local, national and international levels. It could also be possible to measure a sustainable livelihood if there is an operational definition existing of this concept.

Table 5. The social and emotional aspects of the competence from ESD

Use in an International Survey?	The social and emotional aspects of the competence from ESD
International Survey	Motivation to apply this knowledge to her/his actions at local, national, regional and global levels
Would need to be clearly defined	Ethical principles
International survey	Values of freedom
International Survey	**Values of sufficiency and moderation**
International Survey	Values of justice
International Survey	Values of equality/ gender equality
International Survey	Values of tolerance and diversity
International Survey	**Values of responsibility for present and future generations**
International Survey	Values of global solidarity/ oneness of humanity and the right of all to have their basic needs met
International Survey	Values of Human rights
International Survey	Values of peace
Challenging to Measure in	**Values of integrity/ honesty**

any survey	
International Survey	Values of the importance of democracy
International Survey	**The importance of Environmental protection including natural resource conservation and sustainable use and addressing unsustainable production and consumption patterns**

Table 6. The behavioural aspects of the competence from ESD

Use in an International Survey?	behavioural aspects of the competence from ESD
Clear definition required	**found a sustainable livelihood**
International Survey	**living a sustainable life (ethical shopping, using public transport instead of a car, recycling, care in use of resources such as electricity etc)**
International Survey	**Participation in action (individual and collective) for environmental change (protest, campaigns (blogs, petitions, social media), contacting politicians and creation of organisations and structures to create behavioural and policy change) at local, national and global level**

This chapter has clarified the aspects of competences of ESD and GCE including the cognitive, social and emotional and behavioural dimensions to form a conceptual framework for measuring these competences for indicator development. It has then identified the aspects of competences that could be measured in an international study. This conceptual framework of aspects of competences will be taken forward into the next chapter to identify if they are currently measured within existing surveys. This will enable the reader to evaluate if an existing survey could already provide data for the creation of an indicator for target 4.7.

3. Cross-country comparable assessments and measures of the competences following from GCE and ESD

In order to create an indicator on the competences following from GCE and ESD the first step has been to establish an understanding of these concepts (Chapter 1). Then in the previous chapter (Chapter 2) the identification of the competences from GCE and ESD were formulated and the learning outcomes that could be measured within international studies were ascertained. The next step is to evaluate the extent to which existing surveys measure aspects of the competences from ESD and GCE. In order to accomplish this task a comparison is made in this chapter between the aspects of competences from ESD and GCE defined in the previous chapter with the conceptual framework and background questionnaires of a promising existing study the IEA International Citizenship and Civic education study (ICCS) (2009 and 2016).

The most ideal option for indicator development would be to find a single instrument that is run at regular intervals. This would enable the sample and the variables to be kept constant and therefore more reliable in terms of construction of indicators and comparison across countries and over time. For example, a single instrument would enable the wording of questionnaire items, the features of the sample including age group and representativeness of the population and the timing of the data collection the same for each country. The IEA International Citizenship and Civic education Study ICCS (2009 and 2016) is a study which could fulfil this role and as it is the instrument with the greatest potential for developing indicators it will be the focus for this chapter.

Finally, in this chapter, I will conclude with a range of alternative studies and surveys that could be investigated that may well help in finding measurement scales and items/questions for measuring the competences from GCE and ESD.

3.1 The IEA citizenship studies

The study that is the focus for this chapter is the IEA ICCS 2009 and 2016 studies. It may not be directly obvious why a study based on national citizenship curricular would be relevant to Global Citizenship. However, the very nature of international collaboration on developing a study on citizenship and identifying common issues and shared values has made the contents of this study interesting for measuring GCE. In addition, the focus on political engagement at all levels (including the global level) indicates that the data will be at least partly relevant for indicator development. The investigation below will establish exactly how relevant these current studies are for measuring competences following from GCE and ESD. This will begin with an explanation of the data and then followed with a comparison between the aspects of a GCE and ESD developed in the previous chapter.

The ICCS studies are the most recent IEA data collection on Citizenship for students in school. They investigate the ways in which young people learn to play an active role as citizens at the local, national and global level making this study an ideal base for investigating the possibilities for measuring the competences from GCE and ESD. This chapter explores both the 2009 and 2016 studies because the 2009 data is currently available and the 2016 data is unlikely to be available before 2017.

ICCS studies are school-based and include students, teachers and school principals.
According to Assessment Framework (Schulz et al 2008) the ICCS studies cover four content themes:
- Civic society and systems;
- Civic principles;
- Civic participation;
- Civic identities.

Civic society and systems refers to both the more formal and less formal mechanisms and organisations that underpin society and the relationship between the individual and the nation state. It includes questions on citizens assigned and desired role, rights, responsibilities within their society and their opportunities and skills to participate in their society. It also covers state institutions and civil society organisations and their processes and functions within a democratic system. In addition, it covers topics like globalisation, sustainable development and statelessness as well as topics relating to the nation state.

Civic principles refers to the shared ethical foundation of societies and the support protection and promotion of the values and individual responsibility towards maintaining them. The three main values covered are: equity - that all people are born equal in terms of dignity and rights; freedom – as described in UN Human Rights declaration freedom of belief, freedom of speech, freedom from fear, and freedom from want and Social Cohesion - sense of belonging, connectedness, and common vision that exists amongst the individuals and communities within a society. Concepts covered include the common good, human rights, empathy and social justice.

Civic participation refers to individual actions in their communities (different types and levels). It includes effective decision making in the form of voting and engaging in representative forms of governance, influencing wider public opinion through public debates, protests and advocacy and community participation including volunteering and participation in religious, cultural and sport organisations. Key concepts include civic self-efficacy and civic involvement.

Civic identities explores the multiple civic identities and roles students perceive themselves to have in a society. It includes civic self-image, referring to an individual's experiences of their place in each of their civic communities including assigned roles and values and how they feel about this. In addition, it covers civic connectedness identifying their relationship to different communities and tolerance towards diversity. It includes the concepts of diversity, culture and nationalism.

ICCS studies are measured at four levels: wide community, school/classroom, individual learners, home and peers. They contain a cognitive test and student questionnaire measuring attitudes, disposition and behaviours. The cognitive test typically presents units in which some brief contextual stimulus (an image or some text) is followed by relevant questions. It focuses on measuring knowing, reasoning and analysing. Attitudes including judgements or evaluations regarding ideas, persons, situations or relationships are also measured in this study in relationship to the four themes. In most cases the response categories were a set of Likert-type items of four categories (e.g. 'strongly agree,' 'agree,' 'disagree,' and 'strongly disagree').

The 2009 study included 38 countries, 26 countries located in Europe, 6 countries from Latin America, 5 Asian countries and New Zealand. The 2016 round includes 24 countries 16 European countries, 3 Asian

countries and 5 Latin American countries. It is interesting to note the diversity of the countries that have participated in ICCS studies in particular the range of wealth, levels of development and systems of governance of the countries that participated, for example, as well as wealthy European countries like Norway and Austria the study includes less developed countries like the Guatemala, Dominican Republic, Colombia and Indonesia. ICCS participating countries have included countries with a long tradition of democracy such as Sweden and England and those countries which are typically considered to have less of a democratic tradition, like the Russian Federation.

Both the ICCS studies build on the IEA 1999 CIVED study in 28 countries. New aspects to the 2016 study are the context of global terrorism, economic crisis, Arab spring and digital citizenship. The IEA aims to make ICCS a regular survey conducted on a 5-year cycle.

3.2 Comparing the IEA ICCS study with the competences from GCE and ESD

As the cognitive items for IEA studies are not publically released, the comparison for the cognitive dimension is based on the description of the assessment framework of the ICCS studies from Schulz et al (2008). The comparison is made between this ICCS framework with the cognitive aspects of GCE and then the additional aspects of ESD as specified from the previous chapter (see Table 1 on GCE and Table 4 on ESD).

The results show (Table 7) that the ICCS cognitive test at least partially covers the majority of the aspects of GCE. The areas that need to be strengthened in order to gain a greater coverage of the cognitive aspects of the competence from GCE are:

a greater emphasis on;
  a) global issues,
  b) power and in particular power relationship between groups within countries (socioeconomic issues not yet covered) and power relationships between countries,
  c) skills to analyze messages coming from private interest groups and the private sector

The results for the cognitive dimension for ESD (Table 7) show that aspects of competences deriving from ESD are much less covered within the existing ICCS instruments. Although the concept of sustainable development and principles are to some extent covered, the majority of the scientific concepts and analytic skills are missing. This is not really a surprise considering that the study does not proclaim to measure ESD. Perhaps it may be too much to include scientific concepts within a social science test? Nevertheless the social scientific aspects of ESD could be developed within this study including:

  a) analytic skills to distinguish between certainties, uncertainties, risks and consequences of environmental degradation
  b) the ability to think in terms of time – to forecast, to think ahead, and to plan/ imagining future scenarios/
  c) understanding consumer social responsibility and how individual life style choices influence social, economic and environmental development at the local, national and global level

Table 7 The cognitive aspects of GCE competences from chapter 2 compared to the ICCS 2009 study framework

Coverage in ICCS 2009 (covered, partial, limited, not covered)	Cognitive aspects of a competence
Partial	Knowledge, understanding, critical thinking and problem solving about current issues that have an impact at the global, national and local level
Partial – concepts covered equality, social justice and sustainable development but this is not all in a global context	Knowledge, understanding and critical thinking regarding the background to global issues such as conceptual understandings of social injustice, inequality, peace/conflict, diversity, sustainable development
Limited – although globalisation as a topic is covered inequalities between countries is not a key theme	Knowledge, understanding and critical thinking regarding inequalities and injustices within and between countries (in particular north versus south) by understanding the complex structures, systems, assumptions, power relations and attitudes that create and maintain exploitation
Covered through the concept of globalisation	Understanding of globalisation and the interdependence and connections of global and local concerns
Limited coverage	Analytic skills to be able to identify the varying interests that shape different responses to global issues like climate change and the ability to critically judge the validity of these interests in relation to the public good.
Partial – media message are often analysed but not messages from the market	Skills to recognize, decode and reflect critically upon messages from the media and the market
Covered although power dynamics could be strengthened	Knowledge about local, national and global governance systems and structures and their underlying assumptions and power dynamics
Covered	Knowledge of the institutions of democracy and how representative and participatory democracy functions including the role of NGO's and the media
Covered	Knowledge of how to collectively effect systematic change
Covered	Knowledge of what are human rights, civil rights, social rights and political rights and the

	responsibilities for implementing these rights at the local, national and international level.
Partially covered	Recognise and examine beliefs and values and how they influence political and social decision-making, perceptions about social justice and political engagement;
Covered	Awareness of multiple identities (own and as a community)
Partially covered	skills to critically analyse inequalities based on gender, socio-economic status, culture, religion, age and other social groups
Not covered	Skills to develop and defend an argument and to be able to advocate for others
Covered	Skills to distinguish a statement of fact from an opinion

Table 8. the cognitive aspects of the competence from ESD competences from chapter 2 compared to the ICCS 2009 study framework

Coverage in ICCS 2009 (covered, partial, limited, not covered)	Cognitive aspects of the competence from ESD
Not covered	A basic understanding of scientific concepts, including knowledge of the causes of climate change;
Not covered	A basic understanding of scientific concepts, including knowledge about disaster reduction
Not covered	A basic understanding of scientific concepts, including knowledge of biodiversity
Partial	A basic understanding of social scientific concepts, including knowledge of poverty reduction
Partial	A basic understanding of scientific and social scientific concepts, including knowledge of sustainable consumption and production
Not covered	Analytic skills to distinguish between certainties, uncertainties, risks and consequences of environmental degradation
Not covered	Knowledge of mitigation and adaptation practices that can contribute to building resilience and sustainability

Partial – concept of sustainable development covered	Knowledge of the principles of sustainable development and how they can be implemented and the ramifications of their implementation
Not covered	The ability to think in terms of time – to forecast, to think ahead, and to plan/ imagining future scenarios/ Ability not only to envision alternative futures but also to create reasonable paths of action leading to these
Partial	Understand consumer social responsibility and how individual life style choices influence social, economic and environmental development at the local, national and global level
Not covered	Basic knowledge about resources; natural, human, financial, technological, organizational, interrelatedness of systems and processes, balances and imbalances
Partial	Basic knowledge of economics; economic models and practice, production and trade, multinational companies, social responsibility, savings, loans, investments, financial services and instruments, e-commerce
Not covered	Basic knowledge of consumer rights and responsibilities; laws and norms, agreements contracts, consumer protection policies, transparency/accountability, complaints, redress, replacement, reimbursement, conflict resolution
Not covered	Basic knowledge of health and safety; food safety, gene-modified organisms, diet and nutrition, ecological/organic food, additives, lifestyle illnesses and epidemics, HIV/AIDS, social services, product safety, labelling and quality control

Table 9. The social and emotional aspects of GCE competences from chapter 2 compared with the ICCS 2009 & 2016 study.

Coverage in ICCS 2009 (covered, partial, limited, not covered)	Social and emotional aspects of GCE competence
Not covered.	A sense of belonging to a common humanity, sharing values and responsibilities based on human rights
Limited. Global level missing from scales. Item; trust in the UN 2009 Scales; trust in civic institutions (INTRUST) did not include the item on trust in the UN and attitudes toward their country (ATTCNT) – could be viewed as nationalism and high scores on this value could almost be considered the opposite to global citizenship.	Cultivate and manage identities, relationships and feeling of belongingness at local, national and global level
Limited. Items from 2009 & 2016 in the scale citizenship norms regarding social movement citizenship activities (CITSOC), 'Taking part in activities to protect the environment'	Attitudes of care and empathy for others and the environment
Limited. Scale 2009 & 2016; collective school action (VALPARTS)	Value of the common good/ solidarity
Covered. Scales 2009; attitudes toward equal rights for all ethnic/racial groups ETHRGHT, attitudes toward equal rights for immigrants IMMRGHT (not in 2016).	Recognise and appreciate difference, diversity and multiple identities, e.g. culture, ethnicity, language, religion, gender
Limited. Needs more explicit reference to HR Scales on gender equality, ethnicity and immigrants relate to this topic.	Values of human rights
Covered. Scale 2009 & 2016; gender equality	Values of gender equality

GENRQL	
Not covered.	Values of sustainability
Covered. Scale 2009 and 2016; students support for democratic values (DEMVAL)	Values of the importance of democracy
Limited. Needs more explicit reference to fairness Scales on gender equality, ethnicity and immigrants relate to this topic. In 2016 2 individual items added on importance of helping people worse off and helping countries worse off	Values of fairness and social justice,
Not covered	Takes responsibility for own actions
Covered. Scales; 2009 & 2016 Citizenship self-efficacy CITEFF, 2009 only internal political efficacy INPOLEF.	Political Self-efficacy
Not covered.	Motivation/disposition to care for the common good
Covered. see behavioural intention in the next section	Motivation/disposition to take political action
Covered in 2009. Scale; interest in politics and social issues INTPOLS. It includes two items on global issues. Not in 2016 questionnaire.	Interest in public affairs
Not covered.	Openness to new experiences and other perspectives

Table 10 Social and emotional aspects of the competence from ESD from chapter 2 compared with the ICCS 2009 study.

Coverage in ICCS 2009 (covered, partial, limited, not covered) Acronyms refer to the IEA reference for the scale in the IEA technical report	The social and emotional aspects of the competence from ESD
Not covered	Values of sufficiency and moderation
Not covered	Values of responsibility for present and future generations

Limited	The importance of Environmental protection including
Item in 2016 on norms of good citizenship 'Making personal effort to protect natural resources e.g. through saving water or recycling waste'	natural resource conservation and sustainable use and addressing unsustainable production and consumption patterns

The comparison between the social and emotional aspects of GCE and ESD are made with the ICCS assessment framework and knowledge of the 2009 questionnaire (Tables 9 and 10). The comparative results show that the many of social and emotional aspects of GCE are to some extent covered within the existing ICCS studies including positive attitudes towards gender equality, cultural diversity and democracy. Examples of questionnaire items contained within these scales are given for below for Gender Equality, Equality by Ethnicity and Citizenship Efficacy.

The ICCS Gender equality (GENEQL) questions begin with the statement, 'there are different views about the roles of women and men in society'. The students are then asked how much they agree or disagree with statements and the responses ranged from strongly agree to strongly disagree.

- Men and women should have equal opportunities to take part in government
- Men and women should have the same rights in every way
- Women should stay out of politics
- When there are not many jobs available, men should have more right to a job than women
- Men and women should get equal pay when they are doing the same jobs
- Men are better qualified to be political leaders than women

(Schulz et al 2011 p.183)

The ICCS Ethnicity equality questions began with the statement, 'There are different views on the rights and responsibilities of different <ethnic/racial groups> in society'. The students are then asked how much they agree or disagree with statements and the responses ranged from strongly agree to strongly disagree.

- All <ethnic/racial groups> should have an equal chance get a good education in <country of test>
- All <ethnic/racial groups> should have an equal chance to get good jobs in <country of test>
- Schools should teach students to respect members of all <ethnic/racial groups>
- <Members of all ethnic/racial groups> should be encouraged to run in elections for political office
- <Members of all ethnic/racial groups> should have the same rights and responsibilities

(Schulz et al 2011 p.183)

For the ICCS survey to gain greater coverage of GCE it would need to be strengthened to contain a greater focus on:
  a) explicitly covering the importance of Human Rights, social justice and fairness
  b) valuing the common good/ solidarity
  c) importance of sustainability and care for the environment
and new scales/items on

d) sense of belonging and identifying with a common humanity

e) being open to new experiences and other people's perspective

The results of the comparison between the ICCS study and the additional social and emotional aspects deriving from ESD demonstrate that these aspects are not covered within the ICCS current instruments (Table 10). In order to cover these areas the study would need to add attitude items on:

a) sufficiency and moderation

b) responsibility towards future generations

c) the importance of environmental protection, including natural resource conservation and sustainable use and addressing unsustainable production and consumption patterns

Table 11 The behavioural aspects of GCE competences from chapter 2 compared to the ICCS 2009 study and 2016 questionnaire

Coverage in ICCS 2009 (Covered, Partial, Limited, Not covered) Acronyms refer to the IEA reference for the scale in the IEA technical report and database	**Behavioural aspects of GCE competence**
Covered but Global dimension could be emphasised more. Items 2009 & 2016; Participation in environmental and HR organisations, participating with a group of YP campaigning on an issue. Scales 2009 & 2016; citizenship norms regarding social movement citizenship activities (CITSOC), expected participation in future legal protest (LEGPROT) (items changed in 2016), 2009 only expected future informal political participation (INFPART).	Taken actions at local, national and global levels to create socio-political change
Covered but social media could be more developed. Scales 2009 & 2016; citizenship norms regarding conventional citizenship (CITCON), expected adult electoral participation (ELECPART); expected adult participation in political activities (POLPART);	Undertaken individual actions in representative democracy (voting, standing as a candidate, writing a blog/ using social media for a national or local election campaign)
Covered by items on intentions to	Undertaken individual actions as a global

participate only in both studies and there are activities that young people of this age could do on this topic. Scales 2009 & 2016; Participation in future legal protest (LEGPROT) includes in 2009 writing to a newspaper, signing a petitions, contacting politicians, not buying products, & wearing badge Item in 2016 in the future choose to buy certain products in support of social justice (e.g. fair trade goods, ethically sourced products)	citizen (ethical consumption, recycling, writing a blog and using social media for a global cause)
Covered More developed on challenging the status quo. Scales 2009 & 2016; Collective school action (VALPARTS), citizenship norms regarding social movement citizenship activities (CITSOC). Item 2009 & 2016 'taking part in a peaceful march or rally.'	Undertaken collective action (protests, social movements, strikes, building structures and organisation to challenge the status quo)
Not covered	Reasons for action to address injustices within or between countries

Table 12. The behavioural aspects of the competence from ESD from chapter 2 compared to the ICCS 2009 study and 2016 questionnaire

Coverage in ICCS 2009 (covered, partial, limited, not covered) Acronyms refer to the IEA reference for the scale in the IEA technical report	behavioural aspects of the competence from ESD
Limited Item in 2016 in the future choose to buy certain products in support of social justice (e.g. fair trade goods, ethically sourced products)	living a sustainable life (ethical shopping, using public transport instead of a car, recycling, care in use of resources such as electricity etc.)
Limited Item from 2009 & 2016 'Participation in environmental organisation' Item from 2009 & 2016 in the scale citizenship norms regarding social movement citizenship activities (CITSOC), 'Taking part in activities to protect the environment'	Participation in action (individual and collective) for environmental change (protest, campaigns (blogs, petitions, social media), contacting politicians and creation of organisations and structures to create behavioural and policy change) at local, national and global level

The results of the comparison on the behavioural aspects of GCE in Table 11 identify a good coverage of these behaviours including individual and collective action. Nevertheless, it should be noted that the items from the questionnaire covering these aspects focus on behavioural intentions rather than actual actions. There are plenty of scales and items that could be used from the current ICCS measurements on political engagement and these are given in the Table 11. Two example of these scale are given below on Citizenship Efficacy and Legal Protest.

The ICCS 2009 Citizenship Efficacy scale (CITEFF) asks the students how well they thought they would perform on several listed activities with the response categories; very well, fairly well, not very well, not at all. The activities are listed below;

- Discuss a newspaper article about a conflict between countries
- Argue your point of view about a controversial political or social issue
- Stand as a candidate in a <school election>
- Organise a group of students in order to achieve changes at school
- Follow a television debate about a controversial issue
- Write a letter to a newspaper giving your view on a current issue

(Schulz et al 2011 p.180)

The ICCS 2009 scale on political protest (LEGPROT) contains a list of ways that students can use to protest about matters they believe are wrong and began with the statement, 'There are many different ways how citizens may protest against things they believe are wrong. Would you take part in any of the following forms of protest in the future?' The response categories were, I would certainly do this, I would probably do this, I would probably not do this and I would certainly not do this. The activities are listed below.

- Writing a letter to a newspaper
- Wearing a badge or t-shirt expressing your opinion
- Contacting an <elected representative>
- Taking part in a peaceful march or rally
- Collecting signatures for a petition
- Choosing not to buy certain products

(Schulz et al 2011 p.189)

In order to establish greater coverage of GCE there would need to a greater emphasis on:
   a) Activities to create change that effect the global level including everyday actions like recycling
New items on
   b) Motivations for participation including social justice and challenging the existing structures in societies

The results of the comparison between items on ESD and the ICCS study (Table 12) demonstrate again a limited coverage. In order to gain a greater coverage of these aspects the study would need to include a greater emphasis on:

c) Participation in action (individual and collective) for environmental change

And new questions on;

    d) Living a sustainable life (using public transport instead of a car, recycling, care in use of resources such as electricity etc.)

3.3 Limitations of the ICCS studies

As the ICCS studies have a high potential for being used for measuring target 4.7 it is therefore necessary now to explore the limitations of this study. The first limitation of using the 2009 version and then the 2016 version of this study is the country coverage. Although there is a high level of diversity regarding the countries that participate there were 38 countries in the 2009 study and then only 24 countries participating in the 2016 study. If this instrument is to be used for indicators then considerable efforts are required to increase country participation levels to fulfil more of a global mandate.

The second limitation of using ICCS studies is the age of the young people involved. Research has shown that attitudes and values are still very fluid at the age of 13 (Amna 2010), and that actual levels of action and participation are extremely low. Marked differences between young people on political engagement start to appear at ages 15-16 (Hoskins and Janmatt 2015). As a global study taking place within the education system, ages 13-14 could be considered an appropriate threshold in order to capture countries where compulsory education ends at 14. Nevertheless, the limitation regarding capturing actual behaviour, an important part of GCE and ESD, needs to be recognised.

A third limitation of the IEA study, which is the case for most international assessment studies, is that at some moments it is necessary for students to undertake a considerable amount of reading to answer some of the cognitive items on the ICCS tests. The implication of this is that for a minority of young people with limited reading capacity the test can to some extent become a test on reading comprehension rather than a test of the specific knowledge and skills. In countries with less developed and comprehensive education systems this issue could be even more of a challenge.

3.4 Further studies for consideration

Further studies that may well be useful for measuring GCE include; the PISA study supplementary module on global competence and the PISA 2015 questionnaire on the environment, and for the adult population: The World Values Study and the European Social Survey rotating module on climate change. Within the time available for this study there is not the possibility to investigate all these studies in detail here. Nevertheless, as the topic appears to be similar a brief exploration will be made of the OECD PISA study on Global competence.

3.3.4 OECD PISA 2018 Study on Global Competence

The advantages of the PISA studies are that the age group is just that bit older at 15-16 and that the country coverage is higher, with about 70 countries participating per round (these include less developed as well as typical OECD countries). This means that data from this source could potentially be interesting. The Global Competence module will be a supplementary module to the main PISA instrument in 2018. The fact that it is not part of the main instrument means that it is currently not imagined to be a regular component of the OECD PISA study and so it would not offer a regular vehicle for indicator development. The details of the global competence module have not been fixed or published yet and the information

given here derives from presentations delivered by the OECD given at the CoE conference on Assessment of education for democratic citizenship in 15-16 October 2015.

The justification made so far for the OECD deciding to measure global competence is that such competences are increasingly becoming important in today's society as people's lives, across the globe, are growing more interconnected and interdependent within their everyday experiences and communities, their learning environments and their work. In this context, they state that young people now and in the future will encounter and need to actively engage with and help shape these environments no matter where they are born, educated, work or live. Young people they argue need to be able to leave school with the knowledge, skills and attitudes to be able to learn, live and work in a global world.

The final framework and definitions have yet to be established, nevertheless, it is interesting to consider the working definitions and framework that were presented by the OECD. At this meeting the OECD presented Global Competence as encompassing topics such as intercultural understanding, global citizenship and global awareness. The tentative working definition provided was that Global Competence is the 'capacity and disposition to act and interact appropriately and effectively both individually and collaboratively when participating in an interconnected, interdependent and diverse world'.
The tentative framework presented by the OECD had four dimensions;
- Communication and relationship management;
- Knowledge of and interest in global development;
- Challenges and trends openness and flexibility;
- Emotional strength and resilience.

Each of these dimensions were said to contain knowledge, skills, attitudes and behaviours. The OECD is going to explore the application of the above knowledge in diverse contexts such as the work environment and local communities in which young people live. Exploration is being undertaken to see if it is possible to assess not only individual tasks but also group tasks.

It is too early in the process to critically engage with the study as the framework and definitions are still in the development phase. Nevertheless, it is possible to tentatively suggest three main differences between the IEA ICCS study and PISA assessment of global competence. First, the PISA study focuses less on citizenship both in terms of rights and responsibilities and in terms of political engagement at any level. Secondly, the knowledge, values and attitudes on human rights and gender equality are currently not explicitly part of the PISA module and third, the PISA study intends to focus on the domain of work and this is absent from ICCS instrument.

To measure the competences following from GCE the values and knowledge of human rights and gender equality are centrally important as is political participation at all levels. If these aspects remain absent from PISA global competence module then the usefulness of the study for measuring competence from GCE may be limited. The main use will probably be for complimenting existing data and for identifying new measurement instruments and items from the background questionnaire that could be used within a new survey.

A question that would be of interest to investigate when the framework is published, is the extent that the values of a PISA module on global competence with a focus on work is framed within a neoliberal perspective emphasising skills and attitudes for global competitiveness. At this stage we do not know the answer to this. A focus on work could also be about understanding the interrelationship of labour market, for example, between cheap clothing in the west and cheap labour in developing countries. It should be kept in mind that cognitive studies in the social science domain are almost impossible to be totally value free. Selection of cognitive items and how the questions are framed are unlikely to be totally objective on global issues, and in such cases it is important to be explicit about the values that are present within such a study.

3.5 Conclusion

Despite the limitation of the IEA ICCS study, it probably the most useful study from the existing datasets available for the creation of indicators because this is a regular instrument that covers many of the aspects of GCE including measuring the values of gender equality and cultural diversity and containing a relevant cognitive test. The study can certainly be enhanced to capture more of the dimensions in particular emphasising much more the global level and the aspects of competences from ESD. The coverage of GCE and ESD could be considerably increased by working together with the IEA towards future rounds of this study. The existing coverage of competences deriving mainly from GCE could be considered sufficient to mark a starting point for the creation of indicators from which to build and develop and how this can be achieved will be discussed in Chapter 5.

In the next chapter the difficulties of implementing the ICCS study across the world will be explored.

4. Challenges in gaining global coverage for a study on GCE and ESD

The IEA citizenship studies although historically (1971 Civic Education and 1999 CIVED) originating more from the US and Europe, have over recent years had much more of a diversity of countries participating, including more and less developed countries and a diversity of systems of governance, and includes participation from Asia and Latin America. Nevertheless specific regions have yet to participate in any of these studies and these include Africa and the Middle East. In order to create an indicator that represents GCE across the world then it would be necessary for at least some countries from all regions to participate. The possible challenges regarding country participation from Africa and the Middle East can be due to the fact that some of these countries are less wealthy and cannot afford to participate, less democratic so do not want to participate, experience war and conflict and unable to participate, and some of these countries are strongly influenced by religious doctrines that are less supportive of the values of GCE. In order to identify more details regarding these challenges the ICCS study was presented at a UNICEF conference comprised of 150 partners from most of the education ministries from the Middle East and North Africa region including Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Oman, Palestine, Sudan, Tunisia, Yemen, and Turkey) and international organisations representatives from this region. In addition, each participant received a handout with 3 scales on gender equality, attitudes towards immigrants and valuing student participation. Feedback was given verbally in the conference discussion, in written form on the handout and through discussions with participants during the conference. This is complimented with additional information regarding expert opinions from those working in Africa.

4.1 Different ideologies

One of the main challenges to the development of an indicator on GCE and gaining global coverage for a survey are the measurement of values and the decision on which values can be agreed on a global basis. Although the vast majority of countries of the world are likely to support values based on the UN declaration of Human Rights this is unlikely to be universal. A small number of countries that are dominated by strong religious doctrines may be reluctant to participate in studies measuring GCE values. For example, at the MENA conference in some countries where the roles of men and women are said to be prescribed in religious texts there were some difficulties identified with the relevance, for example, of asking young people their beliefs on gender equality. At the same time values regarding ESD such as the importance of sustainability and moderation may perhaps be more easily accepted across the Middle East and Africa whilst perhaps more challenging regarding public opinion in the US. The question that the issue of ideology presents is the extent to which values are selected based on a general agreement amongst all countries, most countries or based on a normative decision regarding what these values should be. This decision needs to be taken in line with the purpose of the development of an indicator from GCE and ESD.

4.2 Different realities

A global survey needs to be very general in order to encompass the different realities and priorities of countries and regions. The issue of gender equality was again raised at the MENA conference as an example of this. The key issue for this region according to the delegates was access to employment for women and access to all forms of employment (reducing gender segregation). Whereas the questions in the ICCS study focus on political leaders and equal pay which are the priorities for countries already

participating in ICCS studies. This would suggest that there may need to be some regional differences regarding the particular focus of questions on values and attitudes. The ICCS currently offers regional modules that enable groups of countries to focus on their own priorities.

4.3 Validity of scales and social desirable responses

The validity and comparability of responses is a concern across both national and international studies measuring values, attitudes and behaviours and considerable efforts have been undertaken in the ICCS studies (Schulz 2009) using statistical techniques to check the validity of scales within and across countries that have been involved in the study. Testing if items and scales will work in other countries that have not yet participated can only be performed by conducting field trials and the testing of these instruments in these new countries.

Some additional research has been conducted on testing the effect of socially desirability regarding responses to the ICCS responses in Chile and their findings were that 20% of the scales were influenced to some extent by social desirability. The scales that they identified to be influenced by social desirability in a Chilean context were trust in civic institutions, perceptions of student- teacher relations at school, interest in politics and social issues, and their sense of internal political efficacy (Covacevich 2012). Although social desirability is not necessarily something automatically needed to be excluded, as it demonstrates the effects of the norms of the particular society understudy, (Fisher and Katz 2000) further research would be interesting to understand its comparative effects in different countries.

It could be hypothesised that social desirability of responses is increased much further in countries where freedom of speech is not always permitted in particular on sensitive issues like political engagement and social change. In these circumstances there are quite reasonable cause for concern that young people may well be afraid to respond honestly to questions about values and attitudes and attempt to respond with socially and politically desirable answers. The highest ethical standards in research design need to be adopted to assure that accountability rests at the country level and to protect the anonymity of students and schools to prevent the data being used to identify young people or schools that could be identified as holding *suspect* values and attitudes. In general this is the case for IEA studies. However, even with this in place young people may not feel free to respond as they choose.

4.4 Costs

Participation in nationally representative studies has a financial burden on countries in particular if the infrastructure for conducting school based studies is not already set up. In countries in particular in Africa with limited resources then the decision to participate will also be a financial consideration. It is understandable to prioritise first the improvement of the basic education system. To assure the widest country participation possible in particular for countries with limited financial resources then international resources and donners will be needed to support country participation.

4.5 Conflict and refugees

In countries experiencing conflict the implementation of a survey of any sort will be highly complex, could be dangerous to conduct and may well not be the first priority. Young people in these contexts are unlikely to be able to participate in a study of any form. This would also be the case in countries where people are

suffering from a natural disaster. In addition, those persons who have escaped conflict or natural disaster and living temporarily in another part of the country or in another country (refugees) are unlikely to be counted within a school, household or national registers.

4.6 Levels of education

Not all regions of the world obtain the same levels of education and capacity to read and comprehend by the age of 13 will be significantly different. The level of education needed to read the questions and understand the concepts within the ICCS study could be considered perhaps too high for 13/14 years olds for some less developed countries. This may effect both the answering of the cognitive questions as well as responding to the social and emotional and behavioural aspects of ESD and GCE. Field trialling of the study in these countries would determine if this is the case.

4.7 National sovereignty

As has been discussed in Chapter 1 of this paper, the nation state maintains the power to take decisions regarding the national education system. In this context, it is not possible or even desirable to impose country participation in surveys at a global level in an international study based in schools. If countries maintain the right to choose to participate or not for one reason or another there will be countries that utilise their autonomy not to participate. A typical justification given from European countries for not participating is survey fatigue and that schools are already overloaded with participating in other studies. It will take a significant promotion of the topic of GCE and ESD and the selected study to gain the majority of national countries to prioritise a survey on this topic.

4.8 Conclusion

This chapter has highlighted some of the major challenges of conducting a study for the world and it is unlikely regardless of method of delivery to gain full global coverage due to issues of ideological differences, conflict and natural disasters. The most that could genuinely be expected is to get some countries from every region in the world to participate. To maximise country participation across the world then contributions to the financial costs for poorer countries will be required along with political mobilisation regarding the priority of these topics for all countries.

The challenges regarding regional contextual distinctions on attitude questions can be partly tackled within the ICCS study by utilising its regional instruments i.e. there is a core part of the study undertaken by all countries and then a regional instrument undertaken by countries within a specific region. The level of education required to read and understand the concepts are a challenge and perhaps consideration of older age group would really help with this. Further strategies for responding to some of the challenges are discussed within Chapter 5.

5. Proposal for a regular monitoring mechanism of GCE and ESD

This chapter will identify a set of alternative strategies for the development of indictors of the competences following from GCE and ESD that could be implemented for the purpose of monitoring target 4.7 within the UNESCO global monitoring reports. These strategies will build from the previous chapter's conceptual framework of the competences from GCE and ESD and identification of the current coverage of the IEA ICCS studies of this framework. In addition, these strategies will attempt to address some of the challenges of developing a global study outlined in Chapter 4. The strategy will include 3-steps:

1) short-term and pragmatic, i.e. what can be done with the existing data for 2016 versions of the global education monitoring report
2) medium-term: creation of indicators for 2017 and 18
3) long-term: creation of new surveys for data collection 2019-20 and beyond to 2030

5.1 Short-Term / Pragmatic use of data

In order to create indicators to measure the competences from GCE and ESD for the 2016 monitoring report the most useful strategy would be to work with existing datasets. Working with existing data has its limitations and the resulting indicators would only be an approximate measure of GCE as there would be significant gaps as explained in Chapter 3. Nevertheless, this would mark the start of the process in measuring these competences and there is sufficient data to develop a reasonable approximate measure in regards to GCE.

The strategy on the use of existing data will focus on the IEA ICCS study as this has been identified as the most useful sources of existing data for measuring GCE. However, this data barely covers ESD and other sources, including the PISA 2015 section on science, would be worth investigation in case this offers a better approximate measure for the competences from ESD. In addition, for covering the adult population the World Values Study (WVS) should be explored. The WVS study does not include a cognitive test but covers some of the values identified within GCE.

In 2016 the ICCS 2016 data will be in the process of being collected and checked and is unlikely to be available for analysis in time for reporting purposes. Nevertheless, ICCS 2009 data would be available for use. The advantage of the 2009 version of the study is that includes considerably more countries than the 2016 study with 38 countries participating as opposed to 24 in the 2016 study. The 38 countries in the 2009 study include 5 from Asia, 1 from Australasia, 26 from Europe and 6 from Latin America bringing together a reasonable diversity of countries from across the world.

As was identified within Chapter 3 (Table 7) the 2009 ICCS cognitive test provides some coverage of the majority of domains of GCE and could be used as an approximate indicator for covering the cognitive aspect of these competences. The IEA could be approached to see if they would be willing to allow access to the database containing the specific questions rather than the composite cognitive scores. Having access to the specific questions would enable the calculation of a cognitive score more precisely tailored to GCE. Either way the indicator would include very little of the additional cognitive aspects of ESD and this would need to be made transparent. As mentioned above, in this regard, it would be worth investigating if the science test from PISA 2015 could be used as an additional approximate measure for covering the competences from ESD.

In the research conducted for this study (Chapter 3) I have identified from the ICCS survey relevant measurements of some of the social and emotional and behavioural aspects of competences from GCE that could be considered for indicator development. The aspects of GCE that we have measures for are:

1) Recognising and appreciating difference, diversity and multiple identities that can be measured by the scales: attitudes toward equal rights for all ethnic/racial groups (ETHRGHT) and attitudes toward equal rights for immigrants (IMMRGHT).
2) Gender equality that can be measured by the scale: gender equality (GENRQL).
3) Valuing the importance of democracy can be measured by the scale: students support for democratic values (DEMVAL).
4) Political self-efficacy that can be measured by the scales: Citizenship self-efficacy (CITEFF), internal political efficacy (INPOLEF).
5) Interest in public affairs that can be measured by the scale interest in politics and social issues (INTPOLS) that includes two questions about other countries around the world.

An additional aspect that could be partly measured is valuing the common good through the scale collective school action (VALPARTS).

For the purpose of indicators within the global monitoring report, these scales could be reported individually giving the mean level scores (with their standard errors) for each country and this would demonstrate the complexity and the detail regarding country differences on GCE. An alternative option, to show more general trends regarding the overall concept of GCE, is to group the scales together in the form of domain based or part of a composite indicator following the process outlined by OECD (2008). Previous research (Hoskins et al 2014) tested the data using a similar set of scales using principle component analysis and found that the following scale comprised of single group including; Gender equality, equal rights for all ethnic/racial groups (ETHRGHT), attitudes towards equal rights for immigrants (IMMRGHT), students support for democratic values (DEMVAL) and valuing the common good through the scale collective school action (VALPARTS). Using the methods for the creation of composite indicator (OECD 2008) these scales were combined together as a single domain. The results for this domain for European countries are presented below and the full international results are available in Hoskins et al (2012). The domain was called social justice and is the most relevant domain of this composite indicator for GCE. The efficacy scales and interest in political engagement were not found to group with the other values scales. Instead, the efficacy and interest scales are found to group, perhaps unsurprisingly, with the behavioural aspects of these competences.

Figure 1. The social justice dimension of the civic competence composite indicator (Hoskins et al 2015)
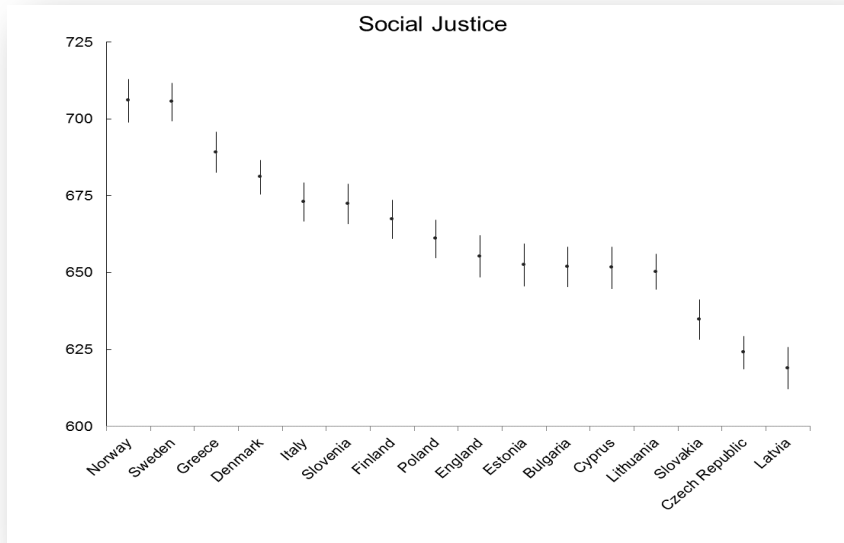
The Social and emotional aspects of ESD are much less covered within the ICCS study and this would need to be made clear within any reporting.

Finally, Chapter 3 also identified the behavioural aspects of GCE that are the most able to be covered from the ICCS 2009 study. The possible measures that could be used for indicator development are:

1) Actions at local, national and global levels to create socio-political change measured by the individual items: participation in environmental organization, Human Rights organisation, and in a group of young people campaigning on an issue. Also measured by the scales: citizenship norms regarding social movement citizenship activities (CITSOC), expected participation in future legal protest (LEGPROT) and expected future informal political participation (INFPART).

2) Individual action in representative democracy covered by the scales: citizenship norms regarding conventional citizenship (CITCON), expected adult electoral participation (ELECPART), expected adult participation in political activities (POLPART).

3) Individual actions as a global citizen measure by the scale: participation in future legal protest (LEGPROT)

4) Collective action measured by scale; citizenship norms regarding social movement citizenship activities (CITSOC).

For indicators on behaviour it would be preferable to use data on actions undertaken. However, the difficulty with using the actual levels of participation within the ICCS study is that the levels of actual participation of young people of 13 years of age in all countries is very low. This can be considered to be due to limited opportunities for this age group to participate and/or interest to engage. Nevertheless it would be possible using the 2009 data to create individual or composite indicators (combing here the 3 forms of participation together) for the levels of engagement for each participating country on; Participation in environmental organisations, Human Rights organisations and/ or with a group of young people campaigning on an issue.

The ICCS scales on Expected participation and Citizenship norms have been more widely used and are perhaps more promising regarding indicator development. To create indicators from the above scales on expected participation and citizenship norms and the previous scales on political efficacy and political interest it would be possible either to present these scales as individual indicators (country means and standard errors) within the global monitoring report to demonstrate the complexity of the topic, or alternatively, as discussed above, based on analysis of the data group the scales together to create a smaller number of composite indictors that would give a more of a general impression of country results on GCE. Based on previous research (Hoskins et al 2014) the grouping would consist of one on citizenship norms and another on participatory attitudes including the efficacy and intended participatory scales.

The behavioural aspects of ESD are barely covered within the ICCS data and subsequently this gap in the indicator would need to be explained in the report.

5.2 Mid Term 2017- 2018 reporting

The mid-term strategy would be to use data from the ICCS 2016 study. To the best of the author's knowledge the majority of items from the above scales from ICCS 2009 are also present within ICCS 2016. The scale themselves can only be developed after the data has been collected and only at this point will it be possible to assess statistically if these scale still work and work across countries. Thus indicators utilised in the 2016 monitoring report are likely to be able to be replicated with the new dataset but this decision will need to wait until the data is collected. In addition, for those countries that have participated in both studies comparisons could be made across time.

5.3 Long term strategy 2019 and beyond

There are a number of long term strategies could be undertaken in order to collect data for the development of a more comprehensive measure of Global Citizenship and Education for Sustainable Development. Below three options will be proposed: first, a module within a future round of the IEA ICCS study, second, a new household study of young people and third, new ways of collecting data directly from the internet. It is important to keep in mind is that each strategy has its strengths and weakness and that developing an indicator on GCE and ESD for all countries in the world will be challenging and require some pragmatic choices. The advantages and disadvantages of each approach are discussed within each section below.

5.3.1 A new Module within the existing ICCS instrument

The added values of developing a new module attached to the IEA ICCS instrument is that the study would then be expected to cover the full range of cognitive, social and emotional and behavioural aspects of competences from GCE and ESD, thus enabling the development of a much more comprehensive indicator or set of indicators for monitoring GCE. In order to achieve this end the additional module to the main instrument should focus on the aspects of GCE and ESD that are less covered in the main study. Thus the additional module should focus on the gaps identified in this report including;

Cognitive aspects
GCE
   a) More cognitive questions that relate to global issues,
   b) Include questions on power and in particular power relationship between groups within countries (socioeconomic issues not yet covered) and power relationships between countries,
   c) Include items that test the skills to analyze the media messages and policy influence from private interest groups and the private sector including global corporations
ESD
   a) Test analytic skills to distinguish between certainties, uncertainties, risks and consequences of environmental degradation
   b) Test the ability to think in terms of time – to forecast, to think ahead, and to plan/ imagining future scenarios/
   c) Test understandings of consumer social responsibility and how individual life style choices influence social, economic and environmental development at the local, national and global level

Social and emotional aspects
GCE
   a) Include new scales on the importance of Human Rights, social justice and fairness
   b) Include new scales on the values of the common good/ solidarity
   c) Include new scales on the Importance of sustainability and care for the environment
ESD
   a) Include new scales on sufficiency and moderation
   b) Include new scales on the responsibility towards future generations
   c) Include new scales on the importance of Environmental protection including natural resource conservation and addressing unsustainable production and consumption patterns

Behavioural aspects
GCE
   a) New items on activities to create change that effect the global level including everyday actions like recycling
   b) New items on motivations for participation including social justice and challenging the existing structures in societies
ESD
   a) More emphasis on participation in action (individual and collective) for environmental change
   b) New questions on living a sustainable life (using public transport instead of a car, recycling, care in use of resources such as electricity and water etc.)

Developing a specific GCE/ESD module within a new round of the ICCS study would require four main processes. First, an agreement with the IEA would need to be reached. Second, in new countries and regions for the ICCS survey, the testing of validity and reliability of existing items and scales need to be conducted via field trials. Third, the development of new measurement instruments to cover the gaps on GCE and ESD and then field trials of these additional of measures for all countries. Items and scales from national and regional instruments taken from across the globe would be a good place to start in this development process. Fourth, there needs to be a considerable effort towards mobilization of countries and donors to facilitate country participation in a new round of the ICCS study.

When the new data is collected a comprehensive composite, domain or set of individual indicators on GCE and ESD can be developed.
Strengths:

The advantage of adding an additional module to the IEA ICCS study is that it is building from an existing knowledge base on this topic. The IEA ICCS study is an internationally and academically recognised existing survey instrument with reputable and reliable measures and data collection procedures on ESD and GCE related topics. Starting from this position means that countries already have the confidence in data, methods and procedures used to collect the data. In addition, UNESCO, governments, NGOs, academics and other users have the confidence in the reliability of the data collected.

Weaknesses:
The first limitation of utilising this option is the age group under study. At the age of 13 young people's attitudes regarding participation and values are still fluid and the results for countries differ significantly when observing older age groups (Amna 2010). In addition, the levels of actual engagement are very low as opportunities to participate for young people at 13 are limited by the opportunities offered by the schools, local communities and parents. Young people start really to engage in decision making and involved in activities at the different levels from 15/16 upwards (Hoskins and Janmatt 2015). It is also the case that the curricular on GCE and ESD may cover more of the concepts of ESD and GCE at the later stage of 15/16 within their curricular. The IEA CIVED study was also run for some countries in upper secondary school which could also be considered but the challenge would be that few countries have compulsory education until 18 and thus the sample tested would not provide a representative picture of the full population.
The second limitation of using the ICCS instrument is that it requires students to undertake a considerable amount of reading and that, in order to prevent the cognitive test becoming a reading comprehension test, the students need to already have a fairly reasonable level of reading. As was discussed in Chapter 4 on challenges this may not be the case for all countries in the world in particular where education provision is limited.

5.3.2 A new study of GCE and ESD
Creating a totally new study for the purpose of indicator development would enable the coverage of all aspects of GCE and ESD and for the age group desired. The conceptual framework should then be based on the conceptual framework developed in Chapter 3. According to longitudinal research (Hoskins and Janmatt 2015) asking students from the age of 15/16 upwards would provide a more accurate reflection of the competences required from GCE and ESD. The challenge with the 15-16 age group is that in many parts of the developing world young people of this age group are no longer at school. Thus this section will investigate the viability of conducting a new study interviewing young people via households or national registers. The advantage of a school base study is that the unit of the school would normally bring together in one place young people of a certain age group and the demographics of the group would be known. However, an alternative approach would be to conduct a study via households and national country registers. Household studies have become increasing popular in developing and transition countries (UN 2005) and this methodology may respond to some of the challenges that completing a global study faces.

There are two possible target populations for the household study. The first option is to target young people between the ages 15-29 (inclusive) residing in each country in the world. There is a need to have a broader age range than a school base study in order that a sample can be collected via a household study as collecting data on only 15/16 years old via a household study is unlikely to work (see more details in the paragraph below on the sample). By 2030 this target age group would form a population in which the vast majority of students would have experienced at least one year within the formal education system since the

adoption of the sustainability goals (2015). This would enable the possibility for some measurement of national Education policy implementation following from GCE and ESD within the formal education system enhancing the policy relevance of the indicator. The alternative option would be to include the full population of the country in this study and thus focus on measuring impact from lifelong learning in regards to GCE and ESD.

Due to the topic in question and the values inherent within GCE and ESD efforts should be taken to include the diversity of the population including non-citizens and individual regardless of nationality, ethnicity or language spoken and efforts should be taken to include young people with disabilities. This will not be easy; even the recent OECD PIAAC study – the most recent large scale international study using households in wealthy countries - acknowledged the difficulties in some countries of including non-documented migrants and did not include people with disabilities due to cost implications (OECD 2014).

Sample

It would seem reasonable to follow the OECD PIAAC approach to the creation of a sample framework as it allows for flexibility but maintains accuracy. In the PIAAC study countries could select 'a sample design and selection approach that is most optimal and cost effective as long as the design applies full selection probability methods to select a representative sample from the PIAAC target population' (Mohadjer et al p317). Thus a sampling frame would be needed to be created for each country for the random selection of individuals to take place (PIAAC required 95% of the population of the target group to be in the sampling frame). Where countries have current national or municipal registries of people or up-to-date census data or sample frames from recent studies this task is less complex (depending on whether these list include non-citizens as well as citizens) and random selection of individuals can more easily fulfil the needs of comprising of the groups of entire population. For countries without this up-to-date information the primary sampling unit will become households or geographical regions and then the development from these lists the list of eligible persons. More time will need to be spent with those countries without existing lists in order to establish the appropriate methods to create the most accurate sample framework and subsequent sample. These countries are likely to need to select a larger size reserve sample as households may not contain young people between 15-29 or selected households may be empty altogether.

It might be questioned if this is a suitable approach for developing countries due to the potential costs and availability of infrastructure to conduct such a study like this. Nevertheless, the UN has engaged in considerable efforts to enhance capacity of developing and transition countries in data collection processes through household or regional units in particular making progress in Africa (United nations 2005). The UN now state that most countries in the world have national systems of household surveys. In addition, international donners have sponsored the following household studies in Africa, Asia, Latin America and the Caribbean, and the Middle East:

'Demographic and Health Surveys (DHS), carried out by ORC Macro for the United States Agency for International Development (USAID); the Living Standards Measurement Study (LSMS) surveys, conducted with technical assistance from the World Bank, and the Multiple Indicator Cluster Surveys (MICS) conducted by the United Nations Children's Fund (UNICEF). (UN 2005 P. 40)

In developing countries stratified multistage cluster designs with geographical units are usually adopted at the first stage of the sample design (Yansaneh 2005 p. 49) as the quality of listings of household or

addresses may not be high. As Yansaneh explains, from the geographical units selected listing can then be made of the households and addresses within these geographical units – thus potentially saving money.

Instrument development

Measurement instruments should be developed based on the conceptual framework developed in Chapter 2 for the cognitive items and the attitudes, values and dispositions for each of the dimensions of GCE and ESD. It would be useful to start from existing national and international survey such as the IEA ICCS study, the World Values Study and the PISA study on Global competence. These items and scales would then need to be field trialled in each country to test that the scale work in each country and refined before the actual data collection could begin.

Implementation

In order to avoid the limitations of the study becoming a test in reading comprehension it would be possible for the interviewer attending the selected household to read out the questions to the individual and the interviewer enter the responses themselves directly into a laptop or tablet. This method is adopted by the European Social Survey as part of their household study on political behaviours, values and attitudes. Further research requires investigation on the possible effect of using this approach for a cognitive test.

Organisation of the study

It would be necessary to put the development and leadership of the study out for tender for a reputable organisation to develop the international study and create the standardized survey design, quality assurance and quality control regarding implementation of the study in each country and standardized analysis and reporting of the results. At a national level, national governments or universities could take the national lead in implementing the study as they are likely to have the infrastructure necessary to undertake the work.

Data

Ideally the data collection process should aim to collect data three times within the period up to 2030. The first study should be conducted as soon as possible and form the baseline from which to measure progress. Realistically the development of such a study and piloting in countries would probably mean that the study could not take place before 2020. Then the study could take place on a 5 year cycle being implemented again in 2025 and 2030. Having 3 data points would allow for the measurement of trends.

Strengths:

The strengths of conducting a new study is the age group for the study can be decided upon according to the needs of the indicator. The choice can be to study either young people 15-29 or all age groups depending on whether the policy priority is to capture lifelong learning or specific policy implementation from formal education. In addition, the question of education and reading level could be overcome by the interviewer conducting the study reading the questions to the participant and entering in the responses. In addition, countries are likely to appreciate the fact that school time will not be taken up by participating in the study - school survey fatigue is often cited by countries as reason for none participation.

Weaknesses:

Developing a new study based on households/ national registers is likely to be the most costly and time consuming strategy both for international development of the study and for participating countries. Before implementation a feasibility study would be recommended to be undertaken to verify the precise costs of developing a new study and the costs for national participation. GCE and ESD would have to become a major priority in the world for the money to be invested to enable this type of survey to happen globally.

5.3.3 Creating indicators from online data

A final option is to try something completely new. By 2030 it could be imagined that the vast majority of people of the world would be online either through their mobile phones, tablets, computers, watches or though new forms of technology not yet evented. The digital divide will probably still exist in terms of speed of access, range of access to diverse material and language of web sources but the vast majority of people will probably be online. This means that the possibility will open up for generating data in new ways which may be much less costly than conducting international studies.

An innovative study is currently being undertaken in Italy by Cristina Rosales to explore how indicators for policy decision making on active citizenship could be collated from information on the web (Rosales, forthcoming). Her study has shown that indicators on political engagement could be developed based on analysing data from twitter feeds of local mayors in Spain and Italy by observing the location of sender and analysing the contents of the tweets that local mayors received. Her research showed that such data could provide more timely and less costly information, with higher spatial and temporal resolution (Rosales forthcoming). Indicators of competences from GCE and ESD could be measured by levels of social media use on topics related to GCE and ESD for each country, for example, social media use on human rights issues or climate change.

Social science research using data from the web 2.0 and data mining is at a very early stage, nevertheless, by 2030 gaining data from the internet for analysis and indicator development would be much further developed and it may well be worth investigating how these could be developed to measure aspects of the competences of GCE and ESD.

6. Conclusion

Despite the many challenges, it is possible to create an indicator or set of indicators to measure the competences following from GCE and ESD for monitoring target 4.7. In fact an approximate indicator or set of indicators can already be developed for the 2016 monitoring report to mark the starting point for measuring these competences.

The main challenge will be to build and improve on these approximate measures and gain much broader country coverage. From the different options set out in this study, the most financially realistic long term strategy would be to add an additional module to the current IEA ICCS study as this builds on existing infrastructure and knowledge in this field. The gaps which this module needs to cover have been identified in Chapter 5 and include a range of global issues and new skills, values and behaviours required from ESD. The challenges discussed in Chapter 4 suggest that attaining full world coverage is unlikely to be achieved. Having countries participate from each region in the world would be a more achievable goal. Therefore targeting countries in regions that have not yet participated in ICCS studies, such as Africa and the Middle East would be useful to attain this. In order to support these countries to participate efforts need to be undertaken to find funding in particular to support less wealthy countries who would like to participate. This could then also include the additional development of specific regional modules that enable the possibility to capture the specificities of the regional contexts. Additional regional modules are currently conducted for Latin America, Asia and Europe.

Some countries will always wish not to participate and, without the power to impose an international study, national country decisions will have to be respected. The reasons for decision of countries not to participate may vary and depend usually on current national priorities and funds. Some leaders of a small number of countries may not agree with all the values covered in GCE and ESD and will therefore decide not to participate. I would argue that this is not an argument to reduce the content on values and attitudes as values like Human Rights are at the core of these competences. It is simply recognition of the reality. Perhaps greater country coverage is possible in studies that focus on the values of national competitiveness and productivity but this does not mean that the competences of GCE and ESD should be changed to fit these values. The values selected will always remain a sensitive issue, nevertheless, as discussed in Chapter 1, having a study that is completely value free is next to impossible within the social sciences and therefore it is necessary to take normative choices. The sustainable development goals as a whole and specifically target 4.7 have clearly stated these choices.

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