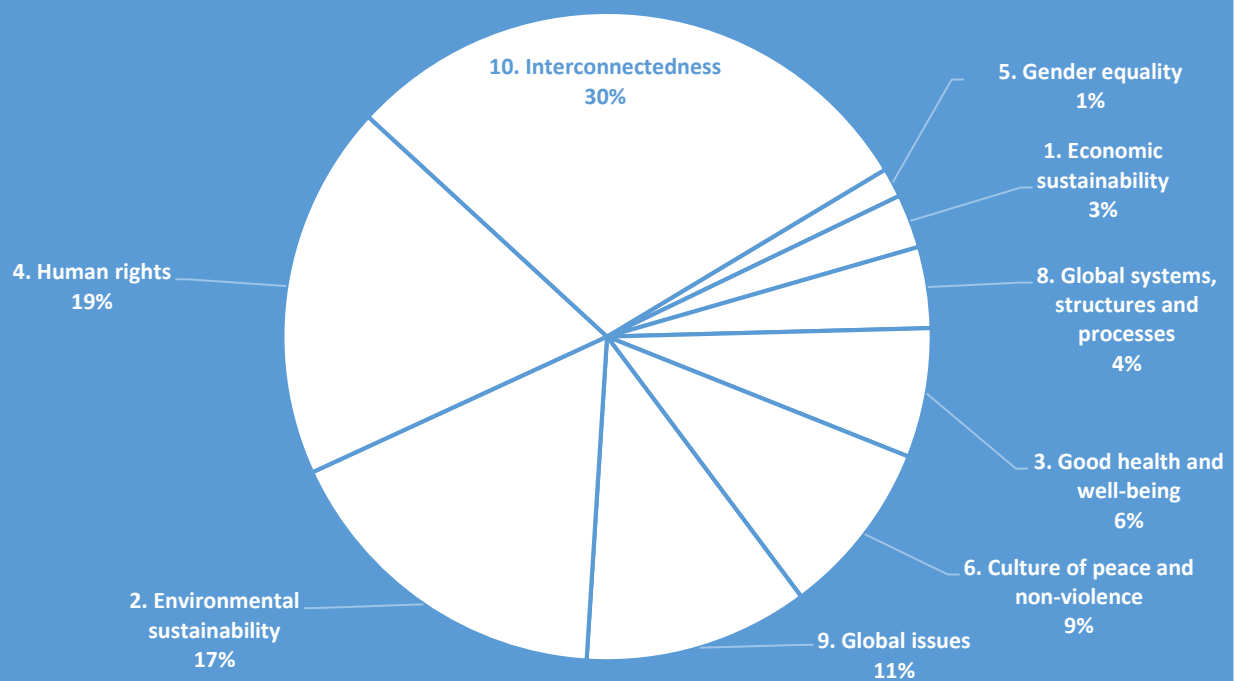


# Preliminary Analysis of the Data Collected by UNESCO MGIEP on Key References to SDG 4.7



By Christian Dohrmann

April 2017

## Contents

<b>Introduction</b> .....	2
<b>Summary</b> .....	3
<b>Clarifications on the Data – Its Possibilities and Limits</b> .....	8
<b>Available Data by Document</b> .....	9
<b>Available Data by Subject</b> .....	10
<b>Outlining the Elements to Analyse</b> .....	12
<b>On the Analysis for Subject Curricula</b> .....	14
<b>On the Analysis for Subjects</b> .....	17
<b>On the Analysis for Education Laws</b> .....	19
<b>On the Analyses of Subcategories</b> .....	20
<b>On Displaying the Count of Frequencies and Anonymizing the Countries</b> .....	23
<b>On the Categorisation of Skills and Values – A Significant Alternative</b> .....	23
<b>Final Remarks</b> .....	25
<b>Structure and Content of the Analysis to Follow</b> .....	26

## Introduction

The following are suggestions and advice on selecting and processing relevant data from UNESCO MGIEP's data files on key references to SDG 4.7 as found in national education documents. The way this report is written has the purpose of informing the reader of the possibilities but also the limits of the underlying database. It is important to understand the limitations as they influence why certain countries have been considered, while others have been left out, and why certain display methods need to be applied and explained.

Thus, the proposal opens with many details about the problems and workarounds, which leads into outlining the available documents and subjects for analysis, before it dives into the preliminary analysis of the data with selected examples. It furthermore makes suggestions on the display and anonymization requirements, and also outlines a significant alternative in the categorisation process, before concluding with some final remarks.

## Summary

The chosen base countries for analysis are Cambodia, Indonesia, Kazakhstan<sup>1</sup>, Malaysia, Nepal, Philippines, Thailand and Viet Nam, with the addition of Bangladesh in which case an exception must be made for its social science subject that is only taught at primary levels. Further to these countries, it would be highly beneficial to have a completed and corrected data set from Pakistan, India, Uzbekistan and Japan. China might be considered in certain cases.

These countries have the following subjects in common at the secondary education level usable for analysis: Math, Natural Sciences, Social Sciences, National Language and Foreign Language (English). Not all subjects are 8<sup>th</sup> grade specific due to way curricula have been written or have been coded but in certain cases span a secondary education level range with great variation from country to country and subject to subject, such as grade 6 to 8. Differences like these will be annotated in the analysis for transparency as far as possible.

The elements that are going to be constructed for analysis are ‘knowledge’, ‘skills’ and ‘values’. The knowledge element is composed of these categories as currently labelled:

- 1. Economic sustainability
- 2. Environmental sustainability
- 3. Good health and well-being
- 4. Human rights
- 5. Gender equality
- 6. Culture of peace and non-violence
- 7. Justification and general orientation about global citizenship
- 8. Global systems, structures and processes
- 9. Global issues
- 10. Interconnectedness

The skills element is composed of these categories as currently labelled:

- 11. Cognitive skills/critical & systemic thinking
- 13i. Behaviour and action (Transversal/Cross-cutting skills)
- 13ii. Behaviour and action (Responsible lifestyles)
- 13iii. Behaviour and action (Activism)

The values element currently consists of only one category, currently labelled:

- Values 12. Attitudes, values, and dispositions

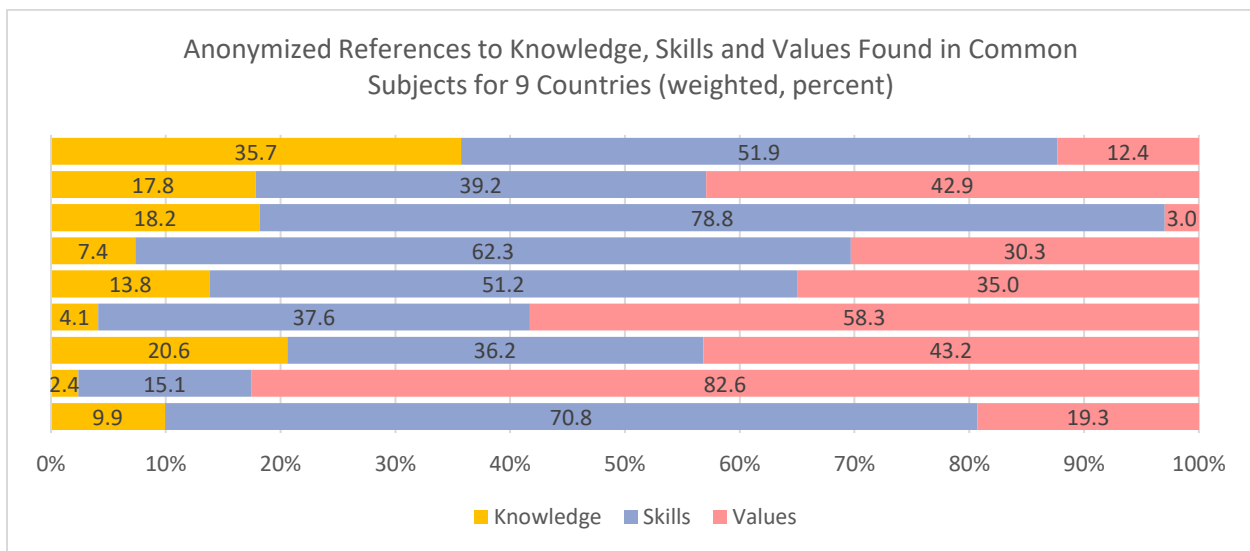
When taking a closer look at the ‘values’ and ‘skills’ categories, one will notice that 13ii and 13iii do not fit well the ‘skills’ element, but rather ‘values’. Transversal skills (13i), can also not be considered a behaviour. Behaviour is triggered by values, whether someone is capable (skilled) of exercising that behaviour is a different question. Alternatively, only category 11 and 13i should compose the ‘skills’ element and 13ii and 13iii should fall under ‘values’ together with category 12. The significant and intelligible effect shifts the focus on ‘skills’.

---

<sup>1</sup> Kazakhstan has been found to contain frequency discrepancies and will need a correction if appropriate or be excluded in certain cases.

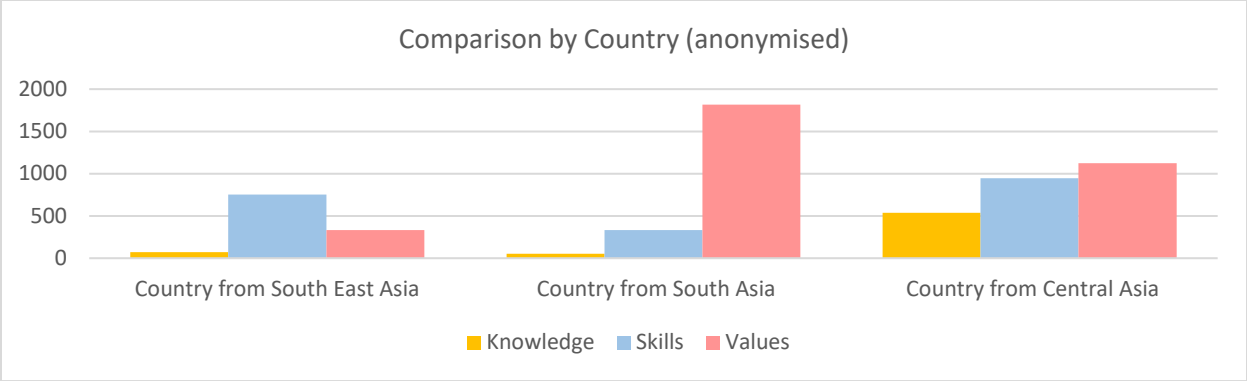
Currently, the ‘knowledge’ element as well as the ‘skills’ element outnumber the ‘values’ element, which would not allow for a comparison. The three elements will be comparable with one another when applying a weighing mechanism. Making a comparison within the three elements equally requires a weighing mechanism as the categories within the elements are composed of different amounts of subcategories. Thus, there is no way around applying a weighing mechanism.

To add more mathematics, the real frequency count will need be avoided displaying where possible, as for once the frequencies have been exaggerated by the 100-page standardisation, but again because differences are too huge among the countries as to display the true relationships between the individual elements and within the elements. Whenever possible, the frequencies require to be converted into percentages to indicate a ‘truer’ image of the relationship with which the elements compare with one another. Moreover, displaying the frequencies will be misleading as it might suggest that some countries have to include as many references (e.g. 1000 references in 500 pages) as other countries do – which does not necessarily mean that education content becomes richer.



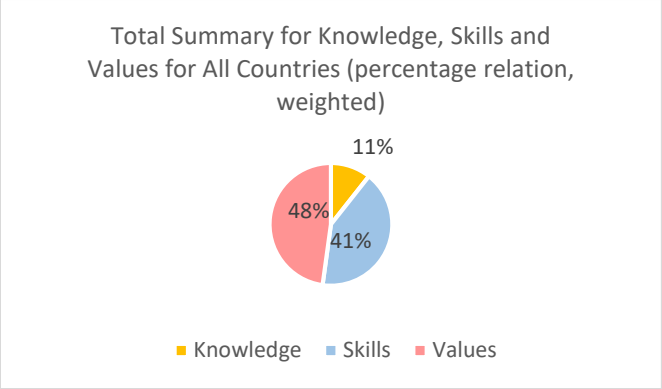
The anonymization of countries has consequences for the value of the present information. Not displaying the countries is advised against, as it would essentially say that different countries have different preferences. It is undeniably valuable to see the country behind the numbers.

It may be suggested to rename the countries into ‘Country from South East Asia’ and similar, but many countries are from South East Asia, while there is only one country from Central Asia, none from East Asia and none from West Asia – yet. However, interesting examples can be chosen at this stage and anonymized as ‘Country from ‘Subregion’’: One of the countries is an interesting case as there is almost no ‘values’, while another country is all about ‘values’.

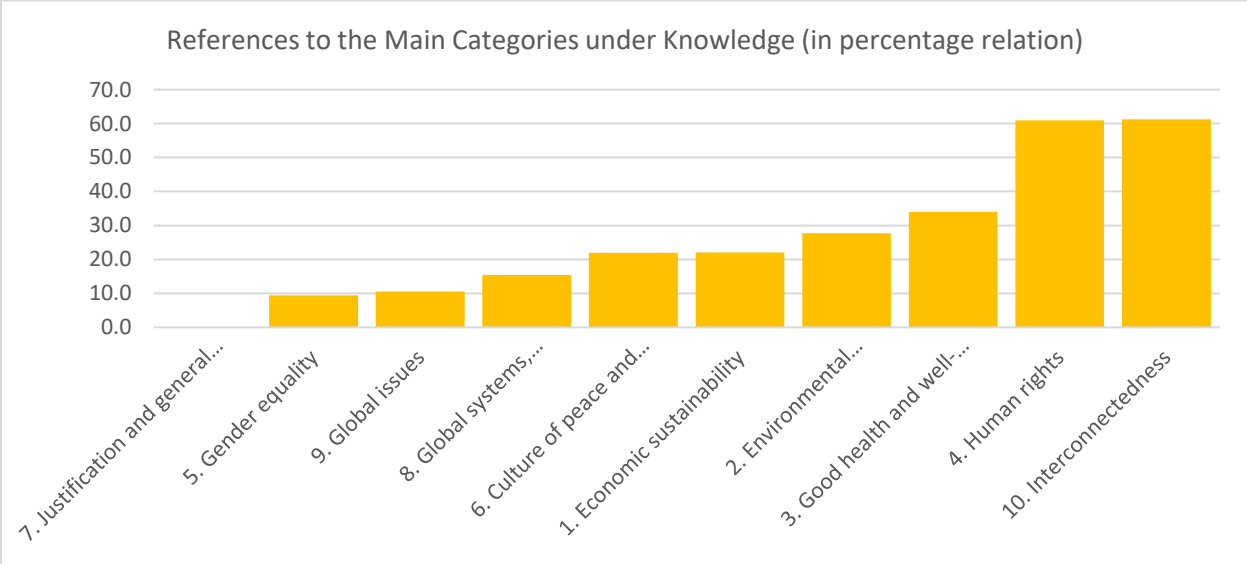


(This chart will be converted into displaying stacked percentages.)

Overall, with the necessary weighing mechanism and percentage conversions charts can be displayed by remaining within the three elements (below) as well as by displaying the three elements in relation to one another (right). This does not require mentioning any countries, yet it leaves out relevant information. Nevertheless, country examples can be made to highlight the variability among their references, while renaming the countries as previously suggested.



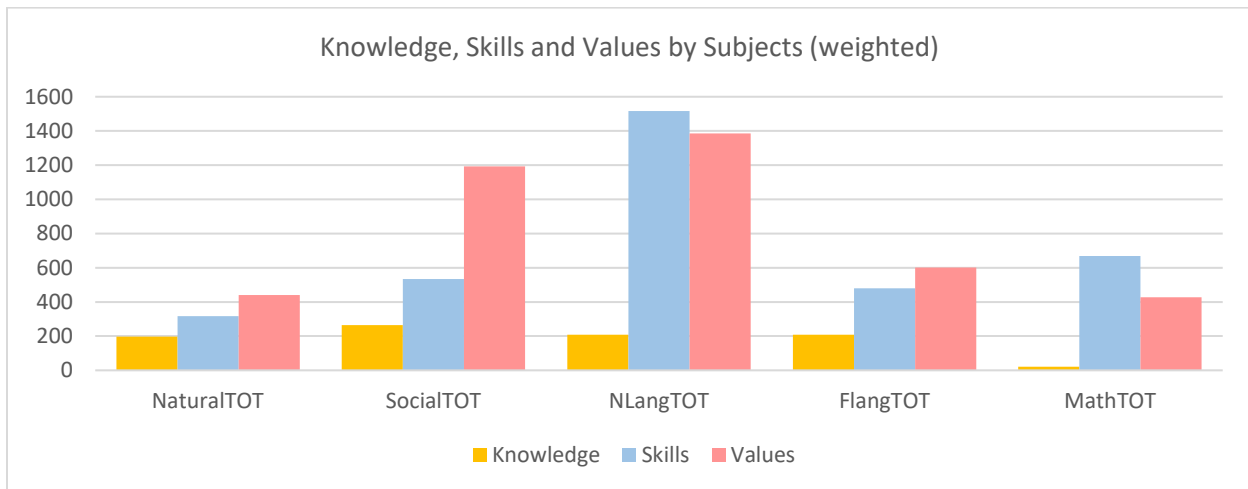
The 'knowledge' element can be displayed by its main categories 1 to 10. It can also be displayed by splitting up the individual subcategories of 1 to 6, while 8 to 10 find a combined display (category 7 is virtually absent in references). The 'skills' element can be displayed by all the relevant subcategories combined, while limiting the display to the most frequent references. In addition, the most absent skills can find mention in the text. 'Values' needs to be displayed by its subcategories as currently it is composed of only one main category.



The analysis still requires extracting great amount of data for the subcategories – a slow and tedious effort due to the fractionation of the data into numerous files. Before continuing this, the data folders and files need a complete update to ensure the latest data is locally present. A later alignment would leave no time.

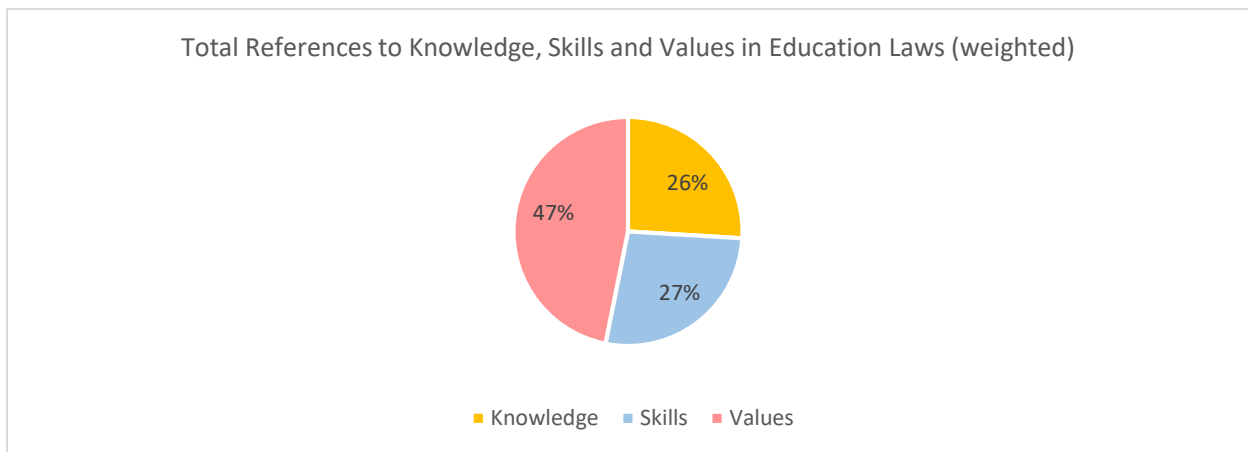
Due to the time it takes to extract the data, splitting the ‘knowledge’ element into its subcategories may be left for last, provided there is enough time left. Displaying knowledge by its main categories already offers relevant information (see above), in addition to splitting up ‘skills’ and ‘values’.

It may also be worthwhile to present the data by the chosen subjects. Based on the current category definitions, only Mathematics and National Language have a higher indication for ‘skills’, while for all ‘knowledge’ is comparatively low – although one might expect greater variations.



(This chart will be converted into displaying stacked percentages.)

In addition to subject curriculum analyses, there are many education laws that are usable for analysis. Here, more countries are available: Cambodia, China, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Malaysia, Philippines, Thailand, Uzbekistan and Viet Nam. This can be kept relatively short, as to keep the main focus on subject curricula. However, this addition proves valuable as it can display different emphases – or the same as it is again on ‘values’.



The question that results out of this preliminary analysis is what message shall be conveyed in the following analysis. Should ‘knowledge’, ‘skills’ and ‘values’ find equal distribution? One message at hand is that no

matter how the data is twisted and turned, *knowledge* for SDG 4.7 always falls short in the curricula – and also in the laws. It does not mean students learn nothing, but they most likely do not learn for sustainable development. This message could serve as the major outcome of the analysis to follow. If there has been evidence in the past that progress in social, environmental and economic development has been slow or absent, well, it should be no surprise anymore.

In addition, my first work on citizenship indicated that gender equality does not trickle down to the individual level in education. Going through the collected data, even the exaggerations from the 100-page standardisation leave a gaping hole in the knowledge category of Gender Equality in education. In short, it barely exist – according to the data.

At last, it remains questionable only to consider grade 8 school level for analysis. It would make more sense to consider all school levels, e.g. 1 to 8, for analysis as education is not limited to either 4<sup>th</sup> or 8<sup>th</sup> grade while all other grades would not contribute. Taking the entirety of a subject curriculum from the earliest grade to the last is more likely to reflect a true image of the learning content.<sup>2</sup> The school grade and level is likely to influence whether there is a focus on knowledge, skills or values. Thus, for now remaining in the secondary level, it would be complimentary to repeat the same analysis for primary levels and, subsequently, contrast the two analyses for an overall picture – even though the countries will vary. It may also be done in a yet separate analysis for those countries where there are only combined curricula data available.

---

<sup>2</sup> Personally, most of environmentally friendly behaviour I learnt in primary school. Analysing 8<sup>th</sup> grade would have shown that I never learnt about this topic.

## Clarifications on the Data – Its Possibilities and Limits

The countries from which data have been gathered are: Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Iran, Japan, Kazakhstan, Korea, Kyrgyzstan, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Uzbekistan and Vietnam. The selected countries have been limited due to the following issues:

The current state of the database is incomplete as the raw data are yet being processed by MGIEP to correct errors and to create individual data files for each document that was analysed. Not all countries have been completed yet, leaving some coded data missing and/or unrevised. Analysing the data blind by disregarding the following issues would produce an unrepresentable output that would not stand any criticism.

Having the correct - or at least approximately correct - page count is crucial for this analysis as everything is based on these. It was particularly noticeable that the individual subject matrices, containing the coded frequencies, oftentimes stated the wrong page count or sometimes no page count at all. Those matrices that contain page counts often appear as if the page count for entire document was given, instead of the relevant section. This becomes obvious when for instance the curriculum page count states 766 (Viet Nam), which is too much for one single school grade and/or subject, while the frequencies are relatively low. Looking into reference documents (where possible) shows that the section for one particular grade consist of only e.g. 44 pages instead. The low amount of key references then correspond to this shorter amount of pages, as one can clearly recognise by reading through the reference document. Despite correcting the page count, they may need a verification to ensure their reliability.

The way subject curricula were written influences the way they are coded and pages counted, making this work difficult without a doubt. By looking into present reference documents and other collection tables, page discrepancies could be adjusted to my best knowledge, but not for every coded subject nor country. The grades that the curricula cover vary not only by country but within a country depending on the subject, which means that the coding for grade 8 can contain coding for grades 7 to 9 and other variations, as in the case for Cambodia's English subject. This is also the case – as far as noticed - for Malaysia, Pakistan, Thailand and Viet Nam. In Kazakhstan, grade 9 instead of grade 8 was coded. In other instances it was entirely unclear whether there is a primary and secondary level distinction. In short, few countries would allow for a specific 8th grade distinction. At least not based on the available data files. Making further distinctions within the secondary education level would eliminate any comparison option. Thus, it is advised to take all secondary education levels as available and revised, while noting in the analysis that there are variations by school grade within secondary levels due to the way the curricula have been designed.

The format of a document influences the page count due to different margins, line-spacing, gaps, font size, and especially the alphabet or phonetic characters (Japanese or Arabic) etc. The stretching of text by using bigger fonts or allowing for more space in between paragraphs extends the text over more pages than a similar document would without this formatting. Though there does not seem to be a way around at this stage anymore, the total word count would have been more appropriate in comparison to the key terms (for example 30 key terms out of 3000 words).

To this aligns the problem with texts being taken from websites in a copy-paste manner, such as laws. A website does not offer a page count, which technically can be solved by inserting its content into a word document and counting the pages. This may be the presently only solution.

To even out differences in writing and formatting of source documents to some degree, a standardisation has been made to attribute each document with 100 pages. Thereby, the coded key term references are recalculated based on a 100-page document. This method allows for a comparison of different documents

with different page lengths within and across countries. Nonetheless, it should be noted that this method cannot even out all differences, such as wide spacing of paragraphs or the alphabet/characters used. This standardisation method has its problems too as it exaggerates frequencies of key term references. This has consequences for displaying the count of frequencies.

The data is also subject to subjective interpretation. As with the example of a country from East Asia, references were coded where the mention of 'rights' appeared. Checking the document, however, showed there was no mention of the term 'rights'. While the coder gave 6 indications, I personally would have given at best 2 by *interpreting* a reference to 'right to education'. While in some cases the coding person may have given too many indications, in other cases relevant references were not coded. In a country from South West Asia the secondary level English curriculum is such an example in which 'critical skills' was overlooked at least twice (page 121 and 122). An example of a different kind is from Central Asia that displays outstanding high amounts of coded values that exceed most if not all other countries. If those coded values are indeed 100% correct, this country can already be said to be the winner in the competition for mainstreaming SDG 4.7 relevant content – if there was a competition.

The collected data could be compared by document: by education law, strategic education plans/education policies, curricula and/or textbooks. The data from these documents can be compared to retrieve a picture on the promoted content in each country. However, not all coded documents are available yet for every country and not within a country, judging by the local data files. Mostly available are curricula, then education laws, policies and strategic plans.

Moreover, education policies or strategic education plans often have different dimensions, for example primary education or secondary education or both, or non-formal education, or basic standard education etc. Similar documents that are present for each country should be considered only – unless a specific country shall receive attention. However, due to their variability it may not be advised to carry out an analysis for policies and plans at this stage, but only for education laws.

This triggers the next problem that at least should find mention. Education laws tend to be very dated, those dates vary from country to country, and with the date varies the up-to-date content. Recent education laws, or updated education laws, are more likely to mainstream relevant key terms than older laws. In addition, countries that did not update their education laws may have complemented their laws through policy/strategic plans instead in order to mainstream the relevant terms. This is why, technically, laws and policies and plans should be taken together.

### Available Data by Document

As far as the reference documents were included in the main data folder on the locally shared drive or were retrieved through online search, the page count has been corrected or inserted to my best knowledge. Without these corrections, at best three countries might have provided reliable data based on the available files.

The following is an overview of the type of country documents that have been coded. The national education policy documents vary, depending on what kind of education they address. This makes a comparative analysis of these documents unlikely. The available documents for common subjects are displayed in a separate table in the next section.

For the national curriculum frameworks, it remains unclear if the evaluation refers to one whole document that is composed of individual subject curricula, or to individual documents by subject, or to a section within

one document, also making unclear if there is level distinction at times. This is likely due to the way national curricula have been written, which varies with each country.

	Available Documents			
	Education Law	National Curriculum Framework	Strategic Plan	National Education Policy
Afghanistan				
Bangladesh				
Bhutan				
Cambodia		primary level only		
China				
India (Assam)				
India (Gujarat)				
India (Maharashtra)				
India (NCERT)				
India (Tamil)				
Indonesia				
Iran				
Japan				
Kazakhstan				
Korea				
Kyrgyzstan				
Lao				
Malaysia				
Mongolia				
Nepal				
Pakistan				
Philippines				
Sri Lanka				
Thailand				
Uzbekistan				
Vietnam				

### Available Data by Subject

As with above documents, the page count has been adjusted or completed for the relevant subject curricula by looking into the reference documents as available but also by double-checking the page range that found reference in the coded matrices to get a better - although possibly still approximate - picture of the correct page amount. This method was especially essential when considering that only grade 8 was to be selected. Due to this method it became obvious that not all coded matrices that meant to represent grade 8 exclusively included curriculum sections/pages from this grade but for grades spanning, for example, grade 6 to 8 instead, if not the entire secondary grade curriculum. Because of this circumstance, grade 8 only cannot be compared at this point, as there are too many variations and not all variations can be clearly identified as belonging to which grade.

In summary, most countries have certain subjects in common at secondary education levels that are available for comparison. These subjects have been identified as:

- Math
- National Language
- Foreign Language/English
- Natural Sciences
- Social Sciences

Natural Sciences on the one hand experiences to be taught as individual subjects in some countries, such as Physics, Chemistry, Biology, Geography, while in other countries there is no such distinction. The same applies to subjects related to Social Sciences. Here, the subjects vary greatly with subjects like World History, Moral and Civic Education or Ethics among others. To allow for an analysis, the individual subjects need to be summarised to create for each country one subject on Natural Sciences, Social Sciences, Math or on languages respectively to align it with those countries that did not split up their subjects.

Each subject displays addressing different educational concepts - or 'categories' as referred to in the database. Intelligibly, Social Sciences commonly references 'human rights' or 'culture of peace and non-violence', while it does not necessarily focus on other categories - say skills. Math addresses primarily the category for transversal skills, but it does not address, for example, 'human rights'. In essence, different subjects address different concepts/categories. Leaving one of these subjects aside has implications on analysing which concepts are being mainstreamed in education.

The following is an overview of the subjects that are available by country for secondary education levels. 'Secondary education levels' means that there is a variability among the school grades that the curricula aim at, which will need to be indicated in the analysis, even though not all subjects are clearly identifiable as to which grade within secondary education they belong. This is also influenced by the way the curricula have been written.

	Available Subjects for Secondary Education Levels					
	Natural Sciences	Social Sciences	National Language	English/ Foreign Language	Math	Remarks
Afghanistan						All missing
Bangladesh		Only primary			not coded but available	Not completed
Bhutan						
Cambodia						
China		Combined				
India (Assam)						
India (Gujarat)						All missing
India (Maharashtra)						
India (NCERT)						
India (Tamil)						
Indonesia						
Iran						All missing
Japan						not completed
Kazakhstan	Combined	Combined	Combined		Combined	
Korea		Combined				some pages missing
Kyrgyzstan						
Lao						All missing
Malaysia		Combined				
Mongolia						All missing
Nepal		Combined				
Pakistan		Combined	Only primary			
Philippines		Combined				
Sri Lanka						All missing
Thailand		Combined				
Uzbekistan	Combined	Combined				pages wrong, not completed
Vietnam	Combined	Combined				

	Not available or not coded
	Available
	No education level distinction

The absolute most countries that at this point can be considered for evaluation by taking into account the adjusted page counts, summarised subjects and the secondary education level are: Cambodia, Indonesia, Kazakhstan<sup>3</sup>, Malaysia, Nepal, Philippines, Thailand and Viet Nam.

In addition, Bangladesh has been integrated accepting that its social sciences subject (Bangladesh and Global Studies) is only available for primary grade 1 to 4, while the remaining subjects for Bangladesh apply for grade 6 onwards. This exception will be indicated in the analysis.

It would be highly beneficial to have a completed and corrected data set for Japan, India (NCERT) and Pakistan, as they would insert a much-needed diversity; perhaps also Uzbekistan. China may also find integration if and when it is restricted to certain subjects only.

## Outlining the Elements to Analyse

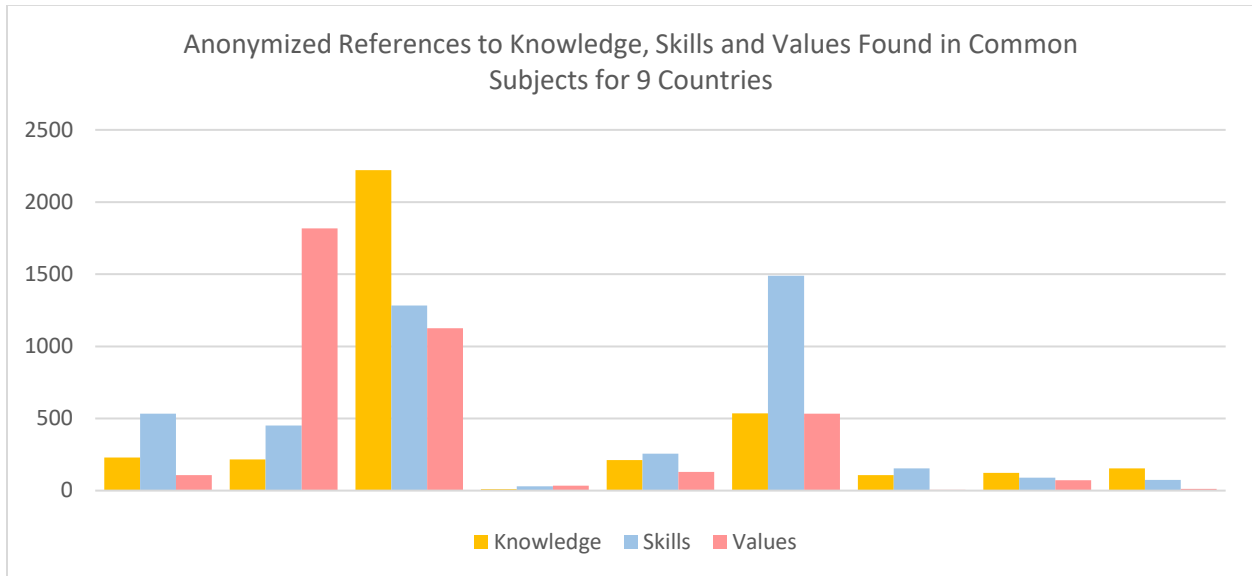
Following is an overview of the main categories that are to comprise the elements ‘knowledge’, ‘skills’ and ‘values’ respectively.

Element	Main Category	Subcategory (in amount)
Knowledge	1. Economic sustainability	7
	2. Environmental sustainability	7
	3. Good health and well-being	7
	4. Human rights	6
	5. Gender equality	5
	6. Culture of peace and non-violence	7
	7. Justification and general orientation about global citizenship	3
	8. Global systems, structures and processes	4
	9. Global issues	4
	10. Interconnectedness	8
Skills	11. Cognitive skills/critical & systemic thinking	8
	13i. Behaviour and action (Transversal/Cross-cutting skills)	6
	13ii. Behaviour and action (Responsible lifestyles)	4
	13iii. Behaviour and action (Activism)	4
Values	12. Attitudes, values, and dispositions	14

It becomes apparent that ‘knowledge’ contains the most main categories, while ‘values’ contains only one. This circumstance repeats within the subcategories of each main category. In the column ‘subcategory’ it is stated how many subcategories in turn comprise a main category. Each subcategory is defined by a different amount of items. Within ‘knowledge’ the items vary from as low as 3 to as high as 8; and in ‘skills’ from 4 to 8. This has consequences for displaying and comparing the elements ‘knowledge’, ‘skills’ and ‘values’ with one another as it has consequences for making comparisons among the main categories.

<sup>3</sup> On the basis that it can be corrected

The following displays the references to the elements of ‘knowledge’, ‘skills’ and ‘values’ among common subjects. In this chart, a comparison across the three elements cannot be drawn due to the different amount of main categories comprising these elements. As can be seen, ‘knowledge’ is very high for one country, which is influenced by its high amount of definitions.



This chart example provides little to no value. It may be advised not to compare ‘knowledge’, ‘skills’ and ‘values’ with one another due to their unequal amount of main categories, but that would also mean that the main categories cannot be compared with one another as they likewise have unequal amounts of subcategories.

Instead, it is advised to weigh the main categories, as well as the created elements in order to adjust the item count accurately.<sup>4</sup> This is a standard procedure and does not reduce nor eliminate frequencies but evens out the relationship between the categories. In this case, it is advised to weigh down ‘knowledge’ and ‘skills’ so that:

- a) the 58 ‘knowledge’ subcategories correspond to 14 values subcategories (58/14=4.14), and the amount of references in each main category under ‘knowledge’ is divided by 4.14. This means that 4.14 references in each main category under ‘knowledge’ correspond to 1 reference under ‘values’.
- b) the 19 ‘skills’ subcategories correspond to 14 values subcategories (19/14=1.36), and the amount references in each main category under ‘skills’ is divided by 1.36. This means that 1.36 references in each main category under ‘skills’ corresponds to 1 reference under ‘values’.<sup>5</sup>

<sup>4</sup>  $Weighted\ Count\ of\ Codings = \frac{Total\ Count\ of\ Frequencies\ in\ A}{(Total\ Count\ of\ Subcategories\ of\ A / Total\ Count\ of\ Subcategories\ of\ B)}$

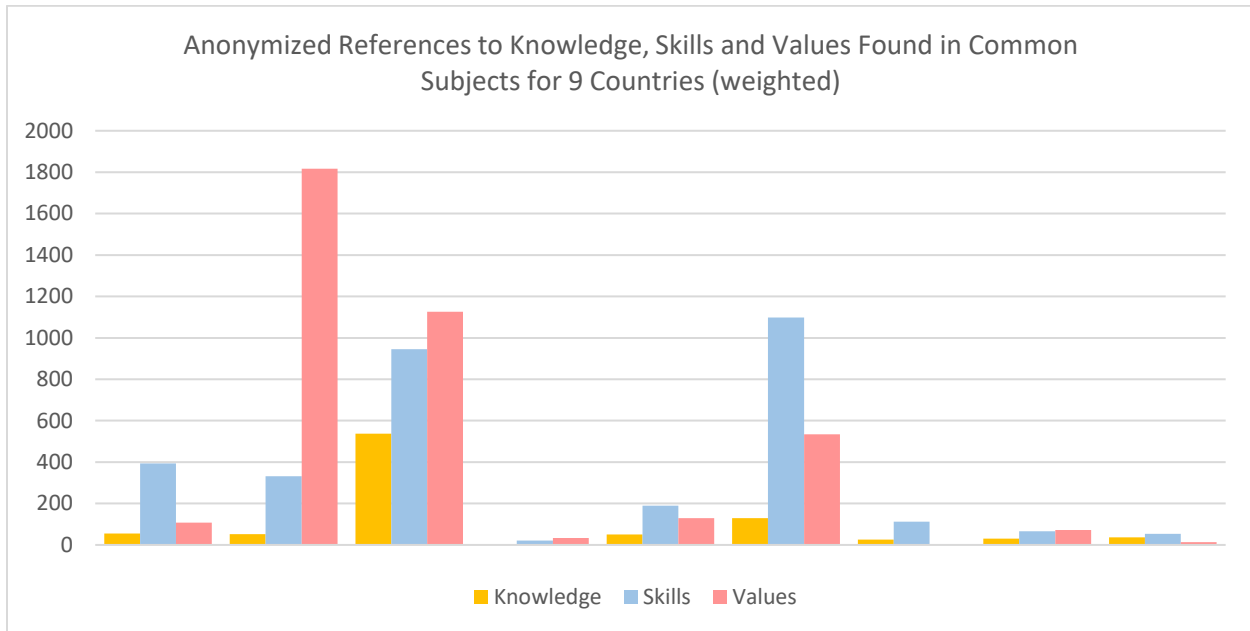
A: the category with more subcategories

B: the category with less subcategories

<sup>5</sup> This means that 4.14 references in ‘knowledge’ and 1.36 references in ‘skills’ correspond to 1 reference in ‘values’.

## On the Analysis for Subject Curricula

The next chart contains the weighted knowledge and skills elements. This chart allows for a comparison across the elements.

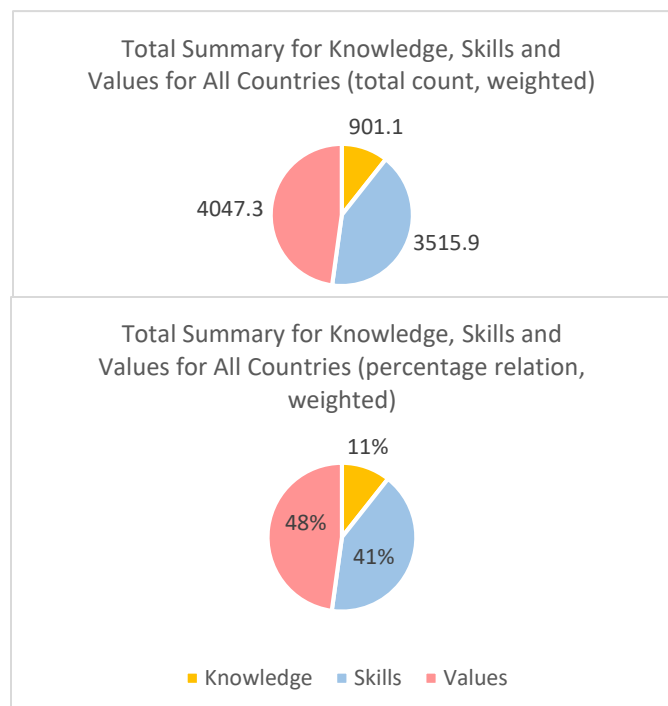


From the chart above can be recognised which element is referenced the most/the least as each item now carries the same weight regardless of which element it belongs to. However, this chart becomes ‘without value’ when considering that countries are to be anonymized.

Additionally, and based on the weighted categories, the total summary for all countries could be displayed to compare the total knowledge, skills and values elements as seen in the pie charts below.

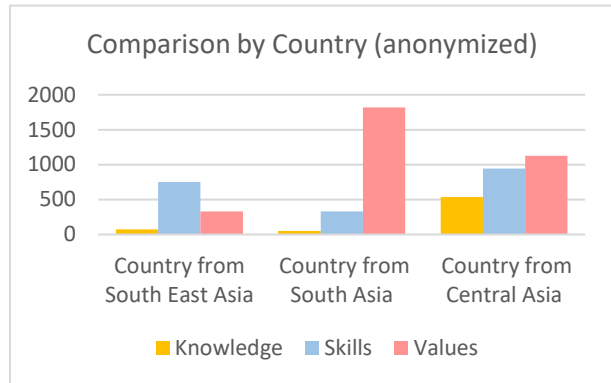
The problem with this all-in-one chart, which is an inherent problem for all charts that summarise information, is that very high frequencies overshadow low frequencies.

Merging one country that mainstreams a certain concept with a country that does not mainstream the same concept neutralises the mainstreaming frequency or misleads to indicating that mainstreaming is taking place although it does not. The pie chart is distorted by the extreme values from two countries. Nevertheless, it does offer insights into the relationship that these elements have with one another. The pie chart indicates correctly that there is a greater emphasis on values and skills in the countries except on knowledge. This chart is, therefore, suggested to be displayed based on the



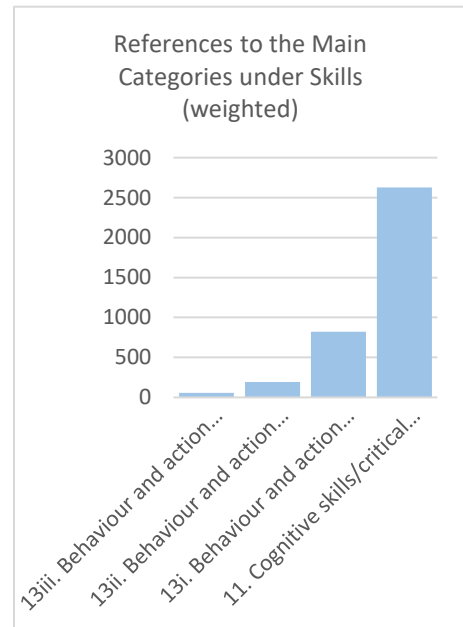
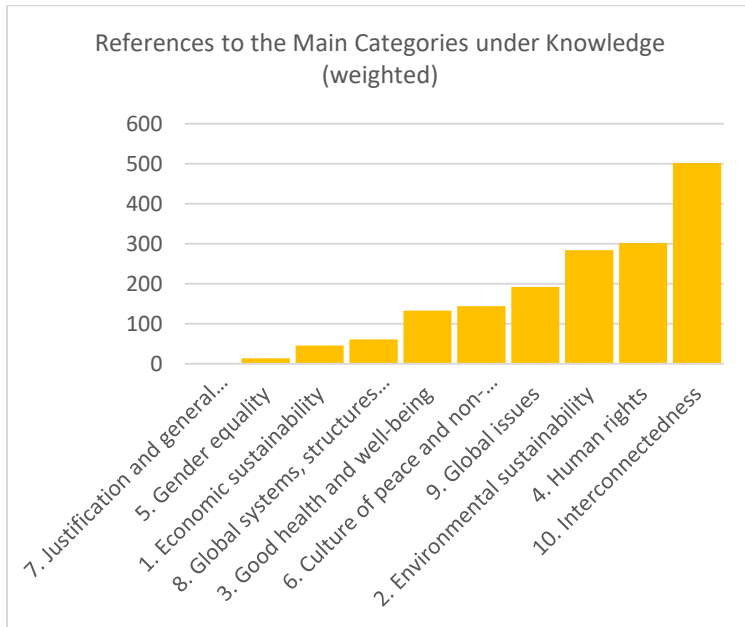
percentages with which the elements compare to one another in order to avoid displaying the misleading frequency count (see the second pie chart).

But even this method requires pointing out that there are significant differences from country to country ('skills' is generally higher than 'knowledge' in every country, but 'values' are not always higher than 'skills'). To demonstrate the difference, the following anonymized chart can be displayed.

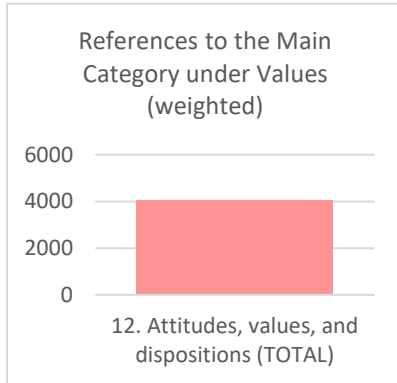


A chart of this kind can be used to outline the variability from country to country in terms of the amount of frequencies that appear or the differences in preferences values or skills.

Next is suggested to display the main categories in comparison with one another by each of the three elements. In order to allow for comparability, similar to the above weighing procedure, the amount of items in each subcategory has been divided by the amount of items in the smallest subcategory.<sup>6</sup>



<sup>6</sup> For example, 'interconnectedness' accounts for 8 items (the most) and 'justification and general orientation about global citizenship' accounts for 3 items (the least) – that is 8 divided by 3 (equals 2.67). Subsequently, the amount of references in 'interconnectedness' is divided by the dividend (2.67) to allow for equal weight of each item.



It becomes obvious that ‘values’ cannot be displayed as it is because it is composed of only one main category. To analyse this element, it needs to be displayed by its composing subcategories. The same can be done for ‘knowledge’ and ‘skills’. This requires further extraction of large amounts of data.

It should be noted that the same problem with summarising information applies for the above charts in which all countries have been taken together. Just as with the comparison for above pie charts, these charts based on plain frequencies for all countries are misleading and, therefore, not suggested.

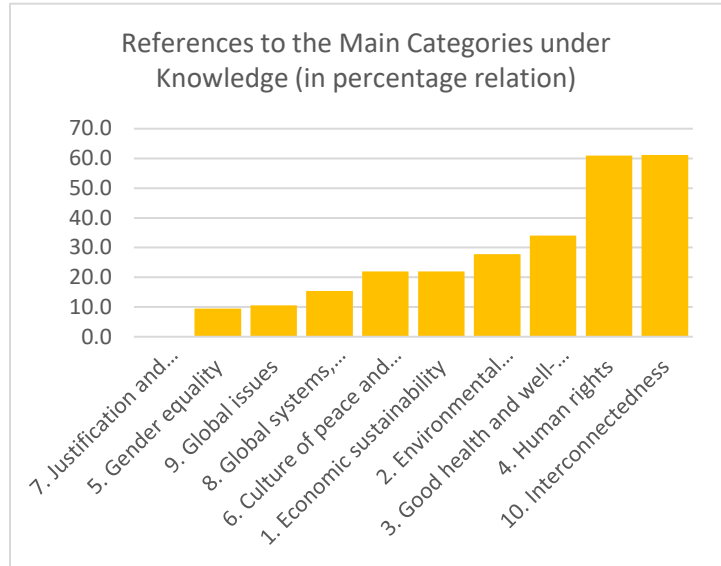
A better approach is to construct the average percentage for all countries, whereas the category with the highest frequencies is attributed as 100% and the remaining categories are measured against these 100%. See the following example.

	In Frequencies							Total Frequencies	In Percent							Total Percentage Average
	Cambodia	Indonesia	Kazakhstan	Malaysia	Nepal	Philippines	Thailand		Cambodia	Indonesia	Kazakhstan	Malaysia	Nepal	Philippines	Thailand	
7. Justification and general orientation about global citizenship	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Gender equality	0.0	0.0	4.2	0.0	3.5	0.0	2.5	10.2	0.0	0.0	3.7	0.0	6.6	0.0	11.9	3.2
8. Global systems, structures and processes	12.2	6.1	5.9	0.0	12.6	0.9	0.0	37.8	34.3	56.3	5.2	0.0	23.6	5.7	0.0	9.9
6. Culture of peace and non-violence	4.1	0.0	24.1	0.0	5.6	2.8	1.8	38.4	11.6	0.0	21.5	0.0	10.4	17.3	8.5	13.8
3. Good health and well-being	4.8	0.0	26.5	2.3	10.6	0.3	0.0	44.6	13.6	0.0	23.7	100.0	19.9	1.6	0.0	16.5
1. Economic sustainability	0.0	0.0	7.0	0.0	46.0	0.7	0.0	53.7	0.0	0.0	6.2	0.0	86.0	4.3	0.0	17.9
9. Global issues	0.0	0.0	83.6	0.0	4.4	4.4	1.1	93.5	0.0	0.0	74.8	0.0	8.3	27.1	5.2	22.7
4. Human rights	35.7	0.0	73.5	0.0	17.6	0.3	0.7	127.9	100.0	0.0	65.8	0.0	33.0	1.9	3.4	29.2
2. Environmental sustainability	0.0	10.9	61.1	0.8	53.5	2.4	21.0	149.7	0.0	100.0	54.6	33.3	100.0	15.1	100.0	57.6
10. Interconnectedness	2.5	9.5	111.7	1.0	19.9	16.2	9.7	170.5	6.9	87.5	100.0	44.1	37.1	100.0	45.9	60.2

By attributing 100% to the highest frequency within each country and measuring the remaining categories against it, the unevenly high frequencies receive the same weight. For example, This country has 35.7 references for Human Rights (based on 100 pages) and is attributed with 100%, while another country has 73.5. For the first country, 35.7 is the highest frequency across its categories, although it is lower than than the second country.

Following, the average percentage is calculated for each category, which then functions like a ranking scale. This method evens out incomparable high frequencies *to some extent* (but not fully), aligns the average preferences among the countries and outlines to what extent countries focus on even though they have different frequencies. The result can be seen in the next chart.

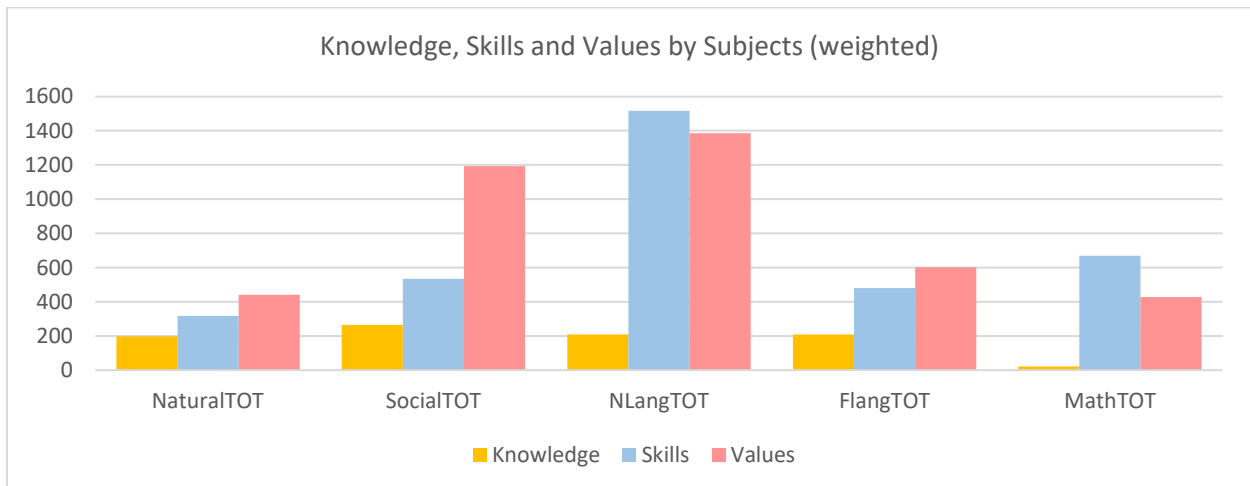
Comparing with the earlier chart on ‘knowledge’, the first two and the last two categories remain in the same position. More importantly however, the relationships between the categories have changed as seen for example with the decreased gap between Interconnectedness and Human Rights. This method depicts a ‘truer’ relationship between these categories. While one country mainstreams human rights concepts more than any other country, this depiction correctly states that other countries also contribute to an overall mainstreaming effort, even though the frequencies, or amount of key references, vary significantly by country. Still, interpreting of the percentage remains to be done with caution. The same method can be applied for ‘skills’, but not for ‘values’ as it is composed of only one main category.



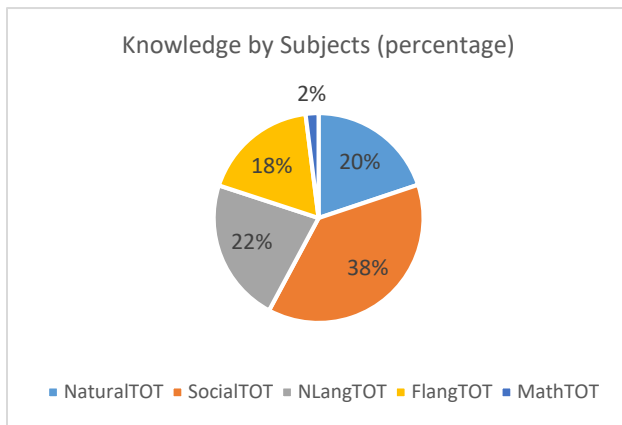
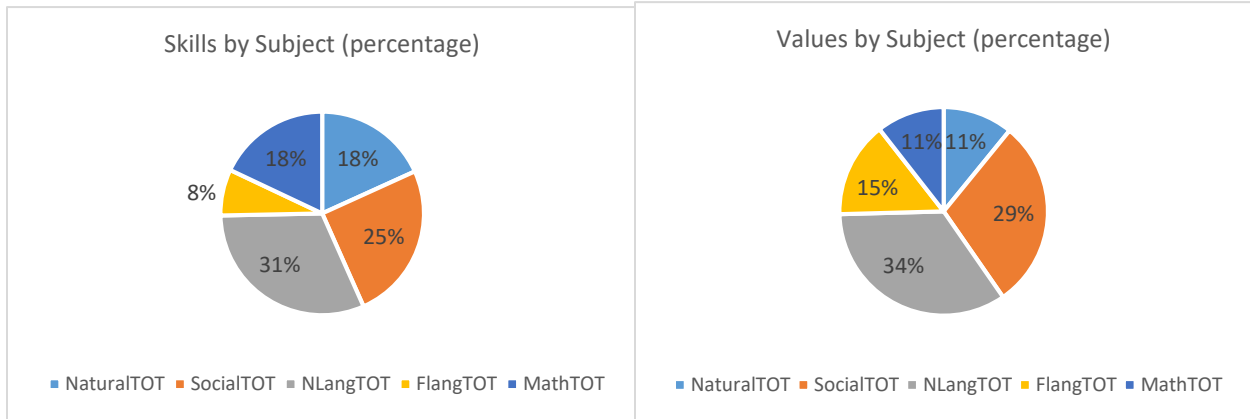
The same method can subsequently be employed to display the frequencies among the subcategories in percent for all three elements of ‘knowledge’, ‘skills’ and ‘values’.

### On the Analysis for Subjects

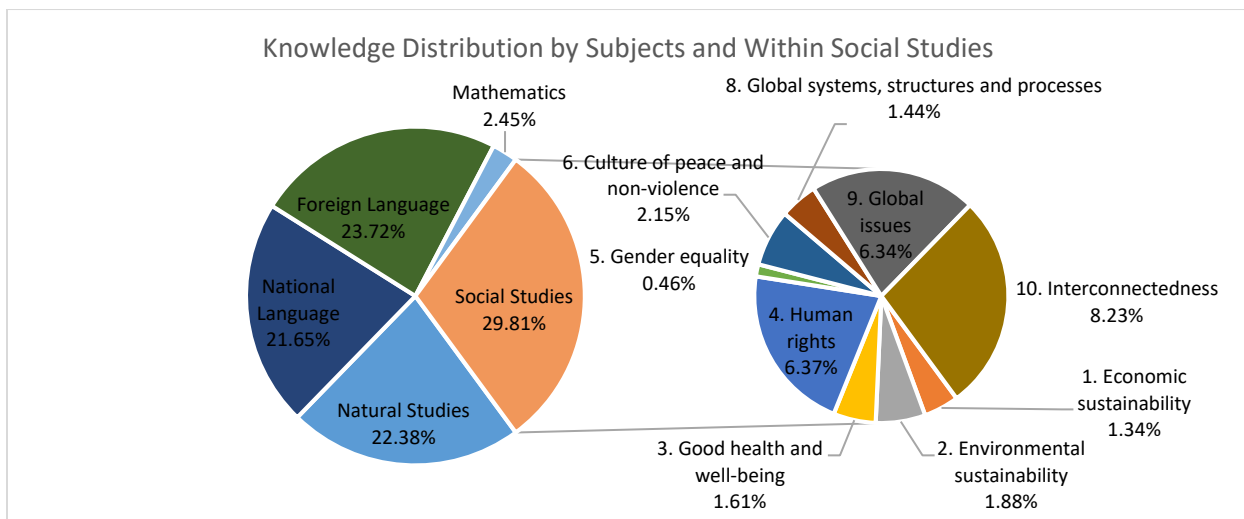
An additional display method is by subjects. The following chart displays the total amount of frequencies across the same subjects. Because they have been weighted, they can be compared with one another. At a first glance, it becomes visible that Math and National Language is about ‘skills’, followed by ‘values’ and Social Sciences is noticeably about ‘values’, while ‘knowledge’ receives no preference in any subject. A very interesting because repeating phenomenon.



The following three pie charts display how the subjects distribute by element. They provide the same information as the chart above, but are easier to understand. For example, ‘knowledge’ is mostly present in Social Sciences, and ‘skills’ in National Language.

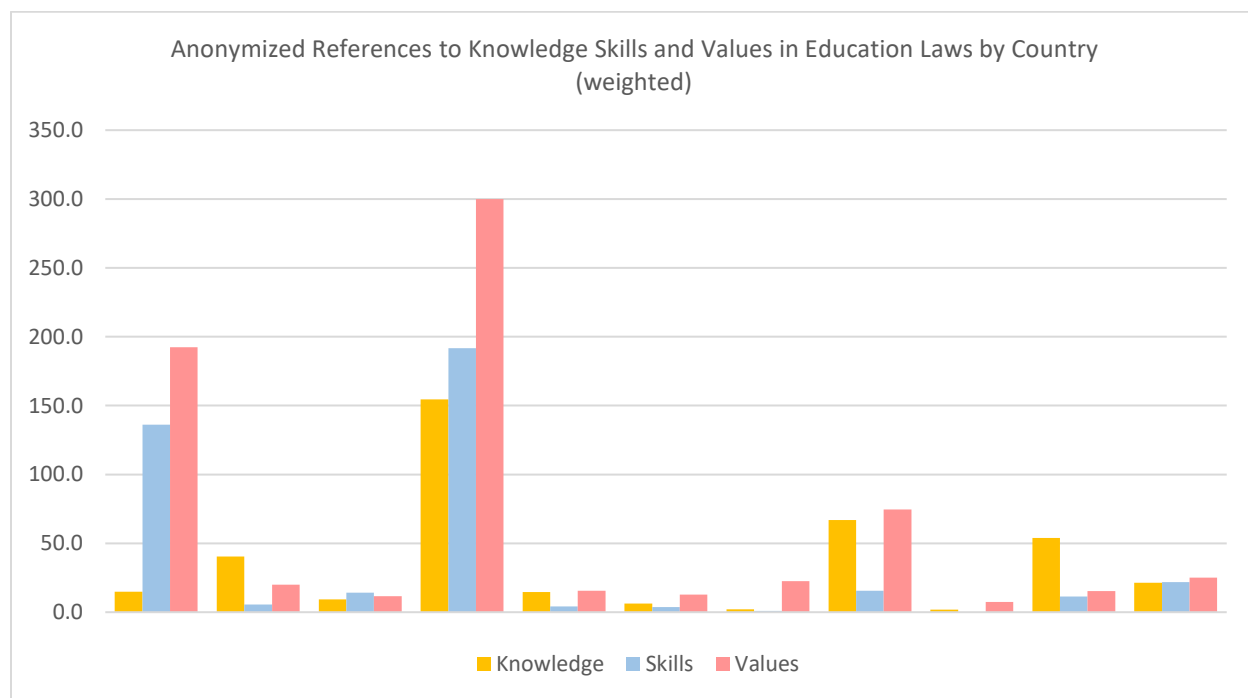


Additionally, country examples can be displayed to visualise how the individual main categories distribute within a subjects as shown in the following chart:

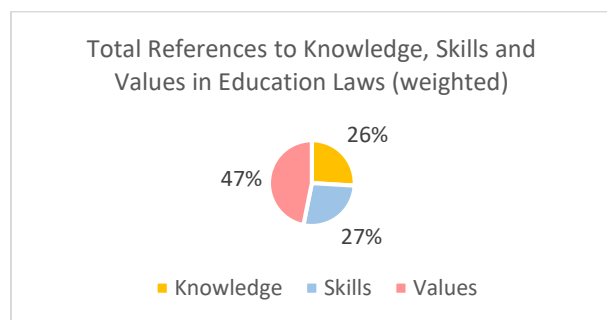


## On the Analysis for Education Laws

The mentioned analysis for Education Laws is displayed in the chart below. It follows the same weighing and 100-page standardisation procedure as the curricula analysis. It can be seen that here more countries are available. The asterisk indicates that for these countries several education laws were taken together. Due to the noticed discrepancies, one of the countries from East Asia may need to be taken out if no updated correction is available.



Just like for subjects, a total for all references can be displayed in a pie chart stating the percentages with which the elements compare to one another, while always bearing mind that large frequencies overshadow smaller ones.



Subsequently, just like for the subject curricula, the analysis for education laws can be carried out by comparing the subcategories to one another.

## On the Analyses of Subcategories

Further to the above charts, the individual subcategories need to be looked into and displayed in a similar manner. In order to display and analyse the distributions for subcategories, more data needs to be extracted from the available database. Since this means to lift and move large amounts of data, it is necessary to have at last update of all data files and folders on the local drive.

Further analysing the subcategories reveals some minor problems with the title and definition of the main categories. The main category ‘Human Rights’ is defined by the same term ‘human rights’. Technically, this is wrong because it is a tautological definition. In this case, however, it suits the purpose of finding references to the very term ‘Human Rights’. Nevertheless, and because this is a category referring to ‘concepts’ from Human Rights, for accuracy’s sake it is advised to rename the main category 4 as ‘Human Rights Concepts’ or ‘Concepts of Human Rights’ for better distinction and readability. The same applies for category 5 on ‘Gender Equality’, which is defined by one of its subcategories ‘gender equality’. Thus, it is advised to rename it as ‘Concepts of Gender Equality’.

To stay in line with adding ‘concepts’, it should be applied to all the categories under ‘knowledge’. Although not every main category is defined by its same title, renaming all categories offers similarity for better understanding. Category 6 ‘Culture of Peace and Non-Violence’ becomes ‘Concepts of Culture of Peace and Non-Violence’. The same applies to category 3 on ‘Good Health and Well-Being’, which should be renamed as ‘Concepts of Good Health and Well-Being’. Adding ‘Concepts of’ also allows for accepting that only some concepts have been considered while others have been neglected.

As with other categories, ‘Economic Sustainability’ and ‘Environmental Sustainability’ are tautologically defined by their own terms and need a distinction. In addition to adding ‘concepts of’, it is advised to rename these categories into ‘economic development’ and ‘environmental development’. Last but not least, all education content for SDG 4.7 is about sustainability, whether this is about the environment or behaviour.

The categories 8, 9 and 10 refer to global phenomena. Essentially, they are all about ‘interconnectedness’, and can be combined into one category for itemised display. Thereby, and in line with above titles, it is advised to call it ‘Concepts of Global Interconnectedness’.<sup>7</sup>

Following is a listing with the subcategories that can be displayed in charts, for which the further data extraction is needed at this point.

Concepts of Good Health and Well-Being						
a) good health and well-being	b) physical health/activity/fitness	c) mental, emotional health; psychological health	d) healthy lifestyle	e) awareness of addictions (smoking, drugs, alcohol)	f) sexual and/or reproductive health	g) other (specify)

Concepts of Human Rights					
a) human rights	b) rights and responsibilities	c) freedom (of speech, association etc.); civil liberties	d) social justice; social equity	e) democracy/ democratic rule; democratic values/ principles	f) other (specify)

<sup>7</sup> Category 7 is neglected here as there are barely any references among the countries, causing this category presently to account for 0%.

Concepts of Gender equality					
a) gender equality	b) gender equity	c) gender parity; sex ratio; gender balance	d) gender roles, gender norms, gender socialization	e) empower (-ment of) women/ girls (female empowerment, encouraging female participation)	f) other (specify)

Concepts of Culture of Peace and Non-Violence						
a) peace, peaceful	b) peace-building	c) conflict resolution, reconciliation, mediation	d) non-violence	e) human security	f) awareness of forms of abuse/ harassment/ violence	g) other (specify)

Concepts of Global Interconnectedness		
8. Global systems, structures and processes	9. Global issues	10. Interconnectedness
a) global governance system, structures/institutions and processes	a) globalization (globalisation)(socio-economic, political, cultural)	a) global/international citizen(ship); global culture/identity/community
b) rule of international law	b) global poverty; global inequality/disparity; colonization, colonialism, colonial legacy (total)	b) global-local thinking; local-global; think global act local; glocal
c) trans-national corporations	c) genocide, terrorism, war, refugees	c) multicultural(ism)/intercultural(ism)
d) other (specify)	d) other (specify)	d) north-south relationships, south-south relationships, developed-developing interconnections, interdependence (total)
		e) migration; immigration; mobility; movement of people
		f) global competition/ competitiveness/international competitiveness
		g) culture and heritage
		h) other (specify)

Concepts of Economic Development						
a) economic sustainability	b) limits to growth; planetary boundaries	c) sustainable growth; sustainable production/consumption	d) human resource development; human capital; skills; knowledge-based economy; career, job, employment	e) green economy	f) welfare, well-being, re-distribution	g) other (specify)

Concepts of Environmental Development						
a) environmental sustainability	b) conservation, protection, restoration, stewardship	c) climate change	d) renewable energy, alternative energy (sources)	e) ecology; ecological sustainability	f) waste management; recycling; dematerialization; resource management	g) other (specify)

The element of ‘skills’ can be displayed in one chart based on its subcategories 11 and 13, as it makes little sense to distinguish between e.g. cognitive and transversal skills. All items in their respective subcategory would appear in one chart, whereas only the most frequent skills will be displayed. The exact range for the most frequent skills, whether those are 5, 10 or 15, will be determined upon establishing the database on these subcategories, which requires further in-depths data extraction.

Skills			
11. Cognitive skills/critical & systemic thinking	13i. Transversal/Cross-cutting skills	13ii. Responsible lifestyles	13iii. Activism
a) critical thinking	a) problem solving	g) environmentally sustainable lifestyles	k) current and future participation in civic protest
b) systems thinking; holistic thinking	b) conflict resolution/management; negotiation; conflict transformation	h) socially/ethically responsible/engaged; responsible consumers	l) engagement in debates on socio-political issues
c) creative thinking	c) collaboration/ working well with others/ social/ sociable; co-operation	i) participation/skills to participate at the local, national, global levels; active citizenship; civic engagement; constructive participation, serving the community, volunteering	m) direct action on issues of global reach
d) future-oriented thinking, futures thinking	d) life skills	j) other (specify)	n) other (specify)
e) other (specify)	e) 21st century		
	f) other (specify)		

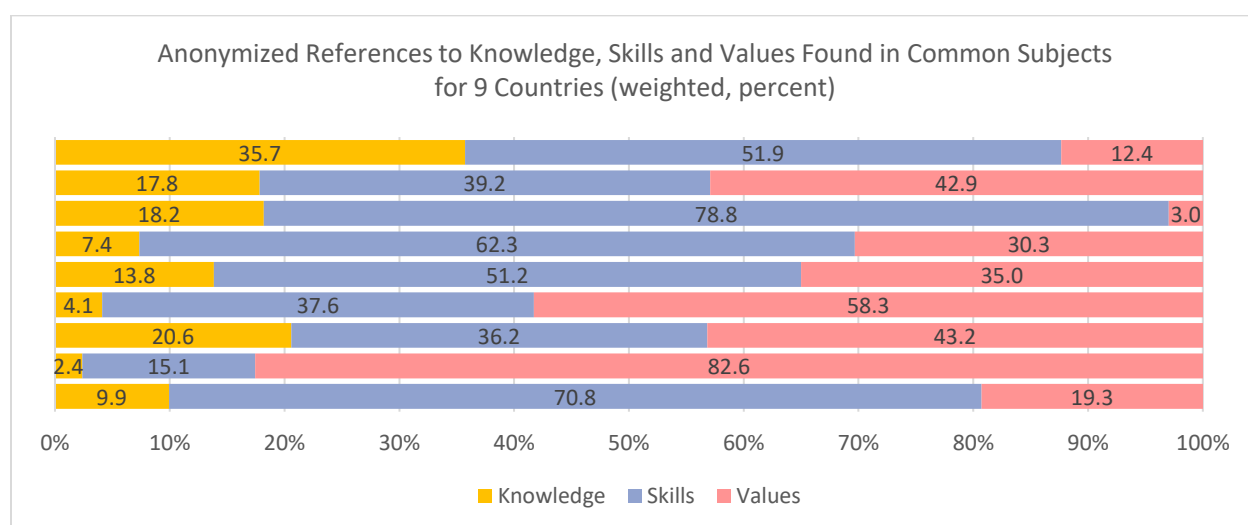
The ‘values’ element can finally be displayed by its composing subcategories. This is the only means to display ‘values’ as it is composed of one main category only.

Values (Dispositions)													
					f) attitudes of care, empathy, dialogue, respect and compassion (for others and the environment)					j) embedded identities: local, national, regional (supra-national) and global			
a) self-awareness	b) justice, responsibility	c) democratic participation	d) respect/appreciation for diversity	e) tolerant/values of tolerance		g) solidarity; global solidarity; common humanity (cosmopolitanism)	h) humanity as privileged referent of identity	i) nation as privileged referent of identity			k) anti-discrimination, anti-racism	l) curiosity	m) resilience; coping with change

Due to the tremendous time consuming effort that extracting and merging the data on the subcategories requires, it is important to have the latest data for all files and folders updated to ensure their integrity as changing it at a later stage may not be possible due to missing time.

## On Displaying the Count of Frequencies and Anonymizing the Countries

Displaying the real count carries the notion of countries being expected to make as many references in certain categories as other countries make. Reading that one of the countries is considered as ‘mainstreaming concepts’ because it makes e.g. 1000 references in 500 pages (5 subject curricula x 100 pages) will trigger other countries to think that they must make the same amount of references. This becomes especially important because the 100-page standardisation process has exaggerated the amount of references, which would further influence the reader’s perception. The end game is certainly not to create a competition for which country manages to include the most references in a predefined amount of pages, nor to set the bar with high frequencies on which other countries are to orientate on. Last but not least, just because a country includes several hundred references to SDG 4.7 relevant content, it does not mean they are all meaningful. Instead of displaying the frequencies, it is advised to display the relationship in percentage, whenever possible, that the categories or elements have with one another. See the following example chart.



While it is still recognisable that ‘knowledge’ fares low, the value from this chart is the deriving relationship among the elements with one another. One country, for instance, would focus primarily on skills development, with almost no ‘values’ reference relevant for SDG 4.7. The opposite is the case in another country, which heavily focuses on ‘values’, with almost no references to ‘knowledge’.

Since most available and comparable data is from countries of South East Asia, this does not even allow for considering countries to be attributed with their subregion. Adding more countries like Japan, Uzbekistan and Pakistan would bring in some needed diversity, provided they are comparable after completion of the coding and revision. This might offer the option of naming countries by their subregion. Then, one country from South East Asia, one from Central Asia, one from South Asia, one from East Asia and one from West Asia could be displayed for exemplification while remaining anonymous. However, interesting examples can be chosen at this stage and anonymized as ‘Country from ‘Subregion’’.

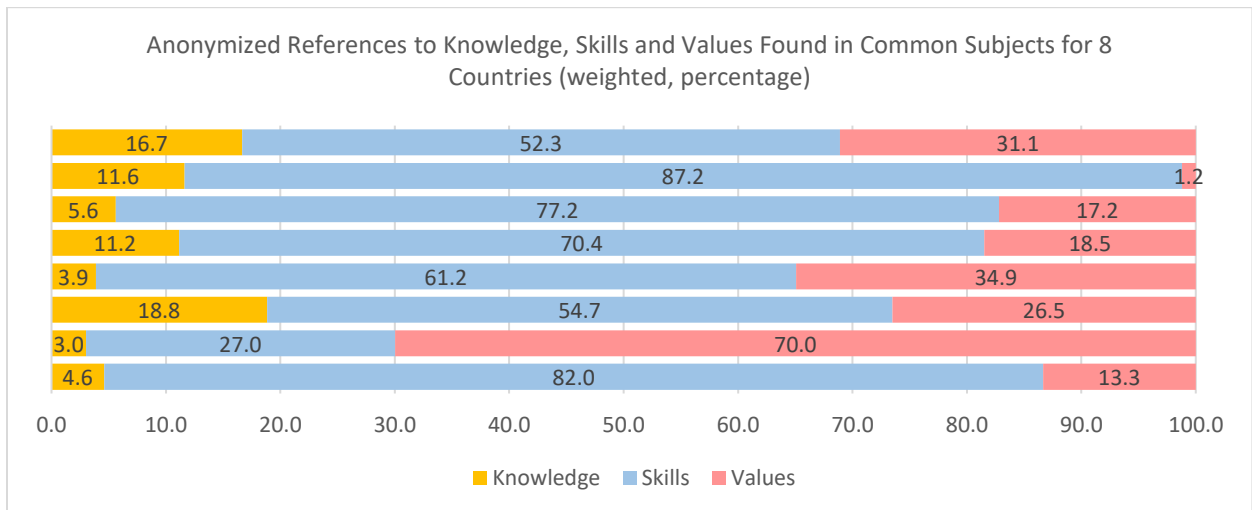
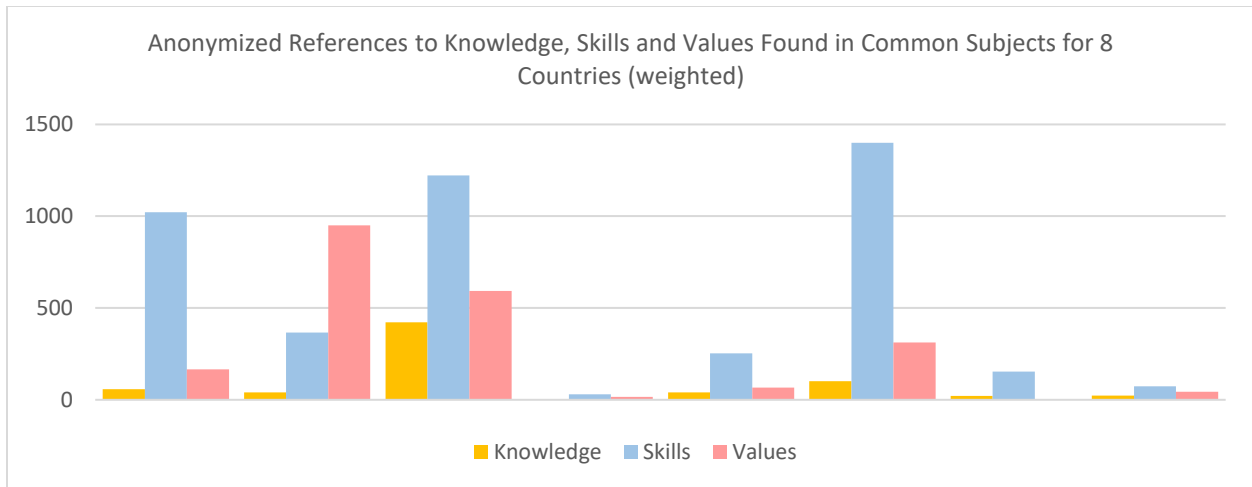
## On the Categorisation of Skills and Values – A Significant Alternative

At latest by viewing the defining items in the ‘skills’ element, it should become obvious that category 13iii (Behaviour/Responsible Lifestyles) and 13iii (Behaviour/Activism) are not about skills but about values,

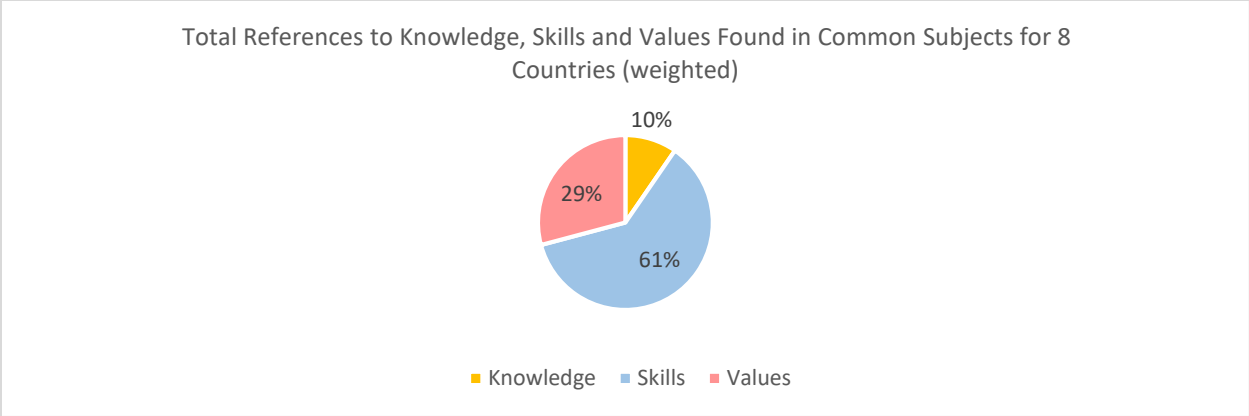
disposition or attitudes. More precisely, these two subcategories reflect dispositions for environmentally sustainable lifestyles, for social engagement, for active citizenship, for volunteering, for participation in protests or public debates, etc. These subcategories, which are also tellingly defined as behaviour, do not fit well under ‘skills’ but under ‘values’ instead. One must consider, learning critical thinking skills or problem-solving skills are to enable a learner to exercise sustainable lifestyles or public participation. It is not suggested to label these subcategories as skills.

Arguing from another perspective, for some unclear reason ‘transversal skills’ has been labelled with ‘Behaviour and Action’ in the original database; it is a contradiction in itself to label a skill a behaviour.

Subsequently, and most importantly, changing the elements’ definitions changes all the results from above – and arguably for the better. See the following three charts and compare with the charts from earlier:<sup>8</sup>



<sup>8</sup> The elements have been weighted accordingly to adjust to ‘skills’ now representing the smallest element due to its amount of subcategories.



(These charts have not included Bangladesh yet.)

As can be seen, ‘skills’ has become the dominant element that countries focus on. Now the previous high frequencies for a certain country appear much more in line with other countries. This display method appears instinctively more accurate when considering that countries have an inherent interest in forming citizens for their labour market. Functioning on a labour market requires skills. Yes, this also requires knowledge, but the knowledge that is tested with this database is on SDG 4.7 if not on bits and pieces from all SDGs, but not on labour essential knowledge, while most of the mentioned skills are generically necessary for employment too.

### Final Remarks

A great value that comes out of this analysis is to remain on the country level and to display the variations for each country. However, anonymizing the countries almost eliminates that possibility risking it as informative as saying different countries have different preferences.

The question that results out of this preliminary analysis is what message shall be conveyed in the following analysis. Should ‘knowledge’, ‘skills’ and ‘values’ find equal distribution? If so, two countries indeed display a tendency for this.

One message at hand is that no matter how the data is twisted and turned, knowledge for SDG 4.7 always falls short. It does not mean students learn nothing, but they most likely do not learn for sustainable development. This message could serve as the major outcome of the analysis to follow. If there has been evidence in the past that progress in social, environmental and economic development has been slow or absent, well, it should be no surprise anymore.

As a personal remark in this context, my first work on citizenship-crafting through the education systems indicated that education for gender equality does not trickle down to the individual level but is treated from a systemic perspective (e.g. only means to allow boys and girls to attend schools are referenced, but not making gender a learning topic). Even the exaggerated data from the 100-page standardisation leaves a gaping hole in the knowledge category of Gender Equality in education. In short, it does not exist – according to the data.

At last, it remains questionable only to consider grade 8 school level for analysis, or any other particular grade for that matter. It would make much more sense to consider all school levels, e.g. 1 to 8, for analysis as education is not to limited to either 4<sup>th</sup> or 8<sup>th</sup> grade while all other grade do not contribute. Going through

education is a process of development with stages in which different or complimentary concepts are to be internalised. In theory at least. Thus, taking the entirety of a subject curriculum from the earliest grade to the last is more likely to reflect a true image of the learning content.<sup>9</sup> The education level is likely to influence whether there is a focus on knowledge, skills or values. Thus, remaining in the secondary level, it will be complimentary to repeat the same analysis for primary levels and, subsequently, contrast the two analyses for an overall picture – even though the countries will vary. It may also be done for those countries where there is only combined curriculum data available in a yet separate analysis.

## Structure and Content of the Analysis to Follow

The analysis to follow orients on the structure of the paper “Global Monitoring of Target 4.7: Themes in National Curriculum Frameworks” by International Bureau of Education (IBE). However, the analysis will expand on the IBE paper by creating knowledge, skills and values elements based on the underlying database-integrated terms on sustainable development and global citizenship. Pedagogical approaches and learning assessment categories will not find attention. Also, while the IBE paper outlined the *presence* of key concepts that refer to education for sustainable development and global citizenship, and therewith Sustainable Development Goal 4.7, the analysis will shine a light on *an indicative extent* to which SDG 4.7 relevant key terms find mainstreaming in national education curricula from countries of Asia-Pacific.

In more detail, the analysis will look into how the created knowledge, skills and values elements (KSV) compare to one another in total for all countries, as well as it will look into how the items distribute within each of the elements. Judging by the preliminary analysis, ‘knowledge’ for sustainable development will become an outstanding find due to its underwhelming presence.

Subsequently, the analysis will look into the most and the least referenced items for each element. Already noteworthy examples under knowledge are ‘gender equality’ that is noticeably underrepresented, while ‘interconnectedness’ and ‘human rights’ find most references.

Due to the found variability from country to country, the analysis to follow will exemplify individual KSV differences for selected countries (whose names can be anonymized). Judging by the current data, noteworthy examples can be Thailand, Indonesia and Bangladesh due to their very distinguishable KSV distributions. This part has the purpose of specifying that there are significant differences from country to country, despite an overall common trend.

Furthermore, the KSV distributions will be displayed and described by subjects. This offers insights into which of the common main subjects focus on which element. Even a subject distinction displays ‘knowledge’ to be underrepresented in every subject. For a more reliable representation of the subject distinction, Kazakhstan and/or Bangladesh offer a more even KSV distribution, and therefore can serve to contrast in which subjects these countries mainstream which element. In addition, the National Language subject contains most skills and values references, and can be analysed regarding which of the key terms find most reference here. This is worth noticing because the Social Sciences subject(s) have been expected to contain most relevant references. A closer look into this phenomenon is needed.

In addition, education laws will find a brief analysis, as to compare the law contents with the subject curricula contents. Education laws can already be stated as to focus on values, which is similar to curricula.

---

<sup>9</sup> Personally, most of environmentally friendly behaviour I learnt in primary school. Analysing 8<sup>th</sup> grade would have shown that I never learnt about this topic.

More interestingly, it seems that even education laws have a *relatively* higher content on knowledge than curricula have – a phenomenon that needs a closer look.

The analysis to follow will result in this structure:

**I. Introduction**

**II. Brief Description on Selected Countries and Subjects**

- A rough summary on the data collected by MGIEP
- Brief outline of the selection criteria for the countries flowing into the curriculum analysis, for subjects flowing into the curriculum analysis, and for the countries flowing into the education law analysis

**III. Analysis of KSV**

*For Knowledge:*

- Displaying and describing the distributions of categories 1-10 (one chart)
  - o Displaying and describing the distributions for each subcategory in the main categories 1-6 separately (six charts)\*
  - o Displaying and describing the distributions for all the subcategories within the main categories 7-10 together (one chart)\*

*For Skills:*

- Displaying and describing the distributions for the subcategories within the main categories 11 and 13i-13iii (one chart)

*For Values:*

- Displaying and describing the distributions for the subcategories within the main category 12 (one chart)

Element	Main Category	Subcategory (in amount)
Knowledge	1. Economic sustainability	7
	2. Environmental sustainability	7
	3. Good health and well-being	7
	4. Human rights	6
	5. Gender equality	5
	6. Culture of peace and non-violence	7
	7. Justification and general orientation about global citizenship	3
	8. Global systems, structures and processes	4
	9. Global issues	4
	10. Interconnectedness	8
Skills	11. Cognitive skills/critical & systemic thinking	8
	13i. Behaviour and action (Transversal/Cross-cutting skills)	6
	13ii. Behaviour and action (Responsible lifestyles)	4
	13iii. Behaviour and action (Activism)	4
Values	12. Attitudes, values, and dispositions	14

\*Due to the time intensive nature of selecting and converting subcategory individual data, this analysis will be left for last and will find incorporation provided enough time remains after analysing all other data. Displaying and describing the main categories (1-10) of ‘knowledge’ is already very insightful.

#### **IV. Analysis of KSV by Countries**

- Displaying and describing the total KSV distribution for all the countries (one pie chart)
- Displaying and describing the KSV distributions by countries (one chart with the 9 countries listed)\*
- Displaying and describing the KSV distributions for selected countries, anonymized as belonging to a certain subregion

\*The incorporation of this chart requires displaying the country names. By anonymizing the countries, this chart will become negligible.

#### **V. Analysis of KSV by Subjects**

- Displaying and describing the KSV distributions by subjects (either one bar chart contrasting KSV by subjects, or three pie charts for each KSV contrasting the subjects)
- Displaying and describing which skills and values are referenced most in National Language subject (this subject contains most total references)

#### **VI. Supplementary Analysis of KSV for Education Laws**

- Displaying and describing a summary of KSV distributions for education laws
- Outlining the differences and similarities with KSV distributions from national education curricula

#### **VII. Key Findings**

- To be analysed: Which terms are most and least referenced under skills and respectively values
- Already known: Within ‘knowledge’, the global dimension through the category ‘Interconnectedness’ finds most acknowledgement; second is the category ‘Human Rights’
- Already known: Within ‘knowledge’, ‘Gender Equality’ is barely present
- Already known: National Language contains most skills and values references – not Social Sciences (TBC)
- Already known: Knowledge relevant for sustainable development fares very low in every regard
  - o Elaborating on the reasons and implications of this finding

#### **VIII. Recommendations (TBD)**

- *on subsequent research/analysis*
- *on re-defining the category definitions and expanding on the defining terms*

#### **IX. Annexe**

##### *Outline of the Limitations of the Data*

- Stating the limitations that derive from the underlying database

##### *Outline of the Methodological Details on Processing the Data*

- Elaborating on the workarounds for the above limitations:
  - o On the mathematical converting procedures to harmonise the uneven item numbers for knowledge, skills and values
  - o On the 100-page standardisation procedure for the uneven page numbers

##### *Providing the Coding Matrix Template*