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Analysis of Sustainability Activities in Spanish Elementary Education Textbooks

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Abstract: The 2030 Agenda for Sustainable Development sets up education as a fundamental tool to educate and raise awareness of the importance of sustainable development; thus, education in schools must fulfill this purpose. Regarding to Primary Education in Spain, legislation establishes that sustainability must be addressed in a transversal manner, although it is explicitly mentioned in the curriculum as content to be addressed by the social sciences subject. Given that, in practice, textbooks are one of the most used tools by teachers, in this paper, we analyse the treatment given to sustainability by the activities of the textbooks of social sciences in Primary Education of the main Spanish publishers, from two perspectives: analysis of cognitive complexity and study of the subtopic regarding sustainability addressed in each activity. For the analysis of cognitive complexity of activities, Bloom's taxonomy (six cognitive categories) and Costa's questioning levels (three levels of questioning) were used. The results reveal an abundance of cognitively simple activities, along with a shortage of cognitively complex activities. The most addressed subtopics are environmental problems and recycling.

Keywords: education for sustainability; primary education; textbooks; Bloom's taxonomy; Costa's levels of questioning

1. Introduction

Since the Industrial Revolution, technological development has led to an obvious improvement in the quality of life, mainly in developed countries. However, this development has also caused multiple environmental problems; so evident is this global impact due to human actions that the scientific community has proposed a new geological epoch, known as Anthropocene [1]. Fortunately, this environmental deterioration aroused some consciousness as early as the mid-20th century, when the concern for sustainability began to emerge [2].

As a result of the growing concern for environmental issues, various summits have been held since the middle of the last century, including the first Climate Summit in Stockholm (1972) [3], the Río de Janeiro Summit (1992) [4], and the Summit of the United Nations, held in New York in 2015 [5]. In this latest event, the 2030 Agenda was adopted, which led to a global action plan for the period 2015–2030 that aims to guide decisions of governments and society towards sustainable development. The plan includes 17 objectives, with the fourth promising quality in education. Therefore, education is a key tool for improving the quality of people's life and achieve sustainable development, giving people innovative tools to solve the main problems of the world. In addition, the seventh target of this objective explicitly mentions the importance of ensuring that students acquire the theoretical and practical knowledge to promote sustainable development. Thus, Education for sustainability (EDS), from a formal [6–13], teaching training [14–16], and non-formal [17–19] perspective, is essential for

instilling in students not only content and concepts, but also the fundamental values that make them sensitive in matters of sustainability.

In the case of the Spanish curriculum, issues that are related to sustainability in Primary Education did not address them until 1990 with the appearance of the General Organic Educational System Law (LOGSE) [20]. It is true that the curricular development of this law does not explicitly include any content that is related to the environment, although a subject objective refers to the manifestations of human interventions, their scope, possible solutions, the ecological balance, and the conservation of natural heritage. Later, in 2006, with the appearance of the new Organic Law of Education (LOE) [21], the concepts of sustainability explicitly appeared. Recently, in 2013, a new education law was introduced; the third educational law to be applied in Spain in less than 25 years: the so-called Law for the Improvement of Educational Quality (LOMCE) [22]. Sustainability is addressed from two different subjects: Nature Sciences and Social Sciences. In the first case, it treats the concept of responsible consumption of energy, renewable and non-renewable energy sources, or problems that are derived from the latter. In Social Sciences, "sustainability" is a concept addressed to be learned. Its teaching is focused on the intervention of man in the environment, environmental problems, possible requests, or the sustainable use of resources.

The Spanish curriculum establishes two types of evaluation items to assess student learning: evaluation criteria (EC) and evaluation learning standards (ELS), a concretion of the EC. In the case of those contents approached from Natural Sciences, basically referring to the renewable or non-renewable nature of energy, its EC reads as follows: "to plan and carry out simple investigations to study the behavior of luminous bodies, electricity, magnetism, heat or sound", while the applicable ELS states: "the student identifies and explains the risks and benefits that are associated with the use of energy: depletion, acid rain, radioactivity, explaining possible actions for sustainable development". In the case of Social Sciences, where sustainability is addressed more broadly, its EC declares "to explain the influence of human behavior on the environment, identifying the ethical consumerism of natural resources by proposing some measures necessary to the human development, specifying its positive effects", while the ELS states: "the student explains the sustainable use of natural resources, proposing measures and actions for leading to the improvement of the environmental conditions on Earth". EC and ELS are both not only indicators for evaluation, these also indicate the complexity of the concepts related to sustainability that can be addressed by the students to the educator.

Several activities have been reported to promote learning among primary school children regarding sustainable development. The use of the school garden dates to the 19th century, with the ecological one being a frequent educational resource for ESD [23–25]. Other varied activities for teaching sustainability in Primary Education are also reported in the literature, such as pedagogical itineraries, including field or virtual modalities [26,27], role-playing games on ecological factories [28], gamification strategies using new technologies [29], or the use of storytelling [30]. Educational experiences of service-learning can also be cited, such as that carried out in a school in Madrid (Spain) [31] with Primary School students, where a solidarity crowdfunding campaign was mobilized for the construction of a well in a village in Senegal. Not only did it obtain enough money for such construction, but also more competent learning was achieved, and more importantly, it was possible to involve and raise awareness of the student towards other realities. On the other hand, it is noteworthy that concepts that are related to sustainability, such as 'Sustainable City' [32], or statements, such as the 'Earth Charter' [33,34], have been proposed as innovative elements for learning about sustainability issues.

As can be seen, there are multiple and varied educational resources to learn and teach about sustainability. Textbooks are another one of them, being, in the case of Spain, a widely used resource. Therefore, it is essential to analyze their strengths and weaknesses. In any case, the educator must be aware about the fact that textbooks are another resource, and they must know their shortcomings, in addition to using skillfully other resources to promote meaningful learning. Here lies the reason for this work.

It is interesting to have a look at the literature, as this article aims to analyse the treatment given to sustainability by the activities of the main publishers' textbooks in Spain. Several researches analyse the treatment given to sustainability by textbooks from different perspectives. Thus, some studies, such as that of Larkins et al. [35], analyse several United States (US) textbooks that were published between 2005 and 2015, reporting the little attention paid to the ways in which people, groups, or institutions can participate in the pursuit of a sustainable society as a general idea. On the other hand, Muthukrishnan and Kelley [36] analyse the representations of sustainability in a set of books for children that can be acquired through Amazon, concluding the insufficiency of these books to describe sustainability, representing eco-sustainable practices only in post-consumption scenarios, without describing the effects of consumerism, such as the depletion of natural resources or pollution. Andersen [37] conducted a study of textbooks in Primary Education in Luxembourg, concluding that sustainability is only addressed indirectly, and that action-based and task-based learning is undervalued. Other studies that analyse textbooks report results, such as not considering the environment as a place with humans or the economic aspects in the definition of sustainable development [38], and not considering the problem of water scarcity in a country like Jordan [39]. In another study that was carried out by Vera and de Lázaro (2010) with High School Geography textbooks, in Spain, it is revealed a diverse and disorderly treatment given to natural resources and environmental problems, with little attention being paid to the physical environment [40].

2. Materials and Methods

The objective of this paper is to analyse the complexity of the activities regarding the sustainable development of Spanish manuals for Primary Education. Later, the subtopic addressed related to sustainability is also examined.

Bloom's taxonomy is used to carry out this analysis, which, as mentioned in the previous section, categorises cognitive processes according to complexity. Additionally, the subtopic of the activities is also examined.

In our case, an analysis of the activities is performed by examining the type of questions addressed, the complexity of the cognitive processes that are involved in their performance, and the skills that are required for their resolution. After this exam, activities are categorised in each of the six levels of Bloom's taxonomy: remember, understand, apply, analyse, evaluate, and create.

In the analysis of the cognitive complexity that is addressed in this work and prior to comment the relevant aspects of Bloom's taxonomy, Figure 1, it is interesting to look at the bibliography and observe some of the classifications and categories of existing activities [41–45]. Normally, the teaching and learning activities are structured in different types of cognitive demand, as they lead, at the same time, to the creation of a thought of a different order, from the simplest to the most superior [46].

Bloom's taxonomy in the cognitive domain (1956) remains the most used framework by teachers. Taxonomy is related to learning, to the domain of knowledge. Bloom's taxonomy aims at different objectives: it involves the acquisition of new knowledge, intellectual development, skill, and attitudes; it recognises specific facts, procedures, standards, and concepts that constantly stimulate intellectual development. These objectives are grouped into six categories, ordered hierarchically according to complexity and dependence, from simple to more complex. The promotion to a new category implies having achieved an adequate performance in the previous one, since each uses capacities acquired in the previous levels. Knowledge, understanding, application, analysis, synthesis, and evaluation are the categories of this domain [47] (see Table 1).

Figure 1. Scheme of Bloom's Taxonomy with icons related to sustainability. Own elaboration from images of Microsoft Office.

Table 1. Structure of Bloom's taxonomy in the cognitive domain.

Category	Description
1. Knowledge	**Definition:** Ability to remember information and contents previously addressed as facts, dates, words, theories, methods, classifications, places, rules, criteria, procedures, etc. The skill may involve remembering a significant amount of information or specific facts. The main objective of this level category is to bring to consciousness that knowledge.
	Subcategories: 1.1 specific knowledge: knowledge of terminology; knowledge of trends and sequences; 1.2 knowledge of forms and meanings related to the specificities of the content: knowledge of the convention; knowledge of trend and sequence; knowledge of classification and category; criterion knowledge; knowledge of methodology; and 1.3 universal knowledge and abstraction related to a certain field of knowledge: knowledge of principles and generalisations; knowledge of theories and structures.
	Examples of verbs: Enumerate, define, describe, identify, list, name, combine, highlight, remember, link, declare, distinguish, memorise, order, recognise.
2. Understanding	**Definition:** Ability to understand and give meaning to content. This ability can be demonstrated through the translation of the content understood for a new form (oral, written, diagrams, etc.) or context. This category contains the ability to understand the information or the fact, to grasp its meaning, and to use it in different contexts.
	Subcategories: 2.1 translation; 2.2 interpretation; and 2.3 extrapolation.
	Examples of verbs: change, build, convert, defend, define, describe, distinguish, discriminate, estimate, explain, generalise, give examples, illustrate, infer, reformulate, foresee, rewrite, solve, summarise, classify, discuss, identify, interpret, recognise, redefine, select, place, translate.

Table 1. *Cont.*

Category	Description
3. Application	**Definition:** Ability to use information, methods, and content learned in new concrete situations. This may include applications of rules, methods, models, concepts, principles, laws and theories.
	Examples of verbs: apply, prove, develop, find out, use, exemplify, interpret, handle, modify, arrange, create, tell, report, solve, transfer, use, build, sketch out, write, operate, practice.
4. Analysis	**Definition:** Ability to subdivide the content into smaller parts in order to understand the final structure. This ability may include the identification of the parties, the analysis of the relationship between the parties, and the recognition of the organisational principles involved. Identify parts and their interrelations. At this point, it is necessary to have understood not only the content, but also the structure of the object of study.
	Subcategories: analysis of elements; analysis of relationships; and analysis of organisational principles.
	Examples of verbs: analyse, reduce, classify, compare, contrast, determinate, deduct, diagram, distinguish, differentiate, identify, exemplify, infer, tie in, select, separate, subdivide, calculate, discriminate, examine, prove, schematise, dispute.
5. Evaluation	**Definition:** Ability to judge the value of the material (proposal, research, project) for a specific purpose. The judgment is based on well-defined criteria that can be external (relevance) or internal (organisation) and can be supplied or jointly identified. Judging the value of knowledge.
	Subcategories: 6.1 evaluation in terms of internal evidence; and 6.2 judgment in terms of external criteria.
	Examples of verbs: evaluate, find out, choose, compare, conclude, contrast, review, decide, defend, discriminate, explain, interpret, justify, relate, solve, summarise, validate, write a comment about, detect, estimate, judge, select.
6. Create	**Definition:** Ability to add and join parts in order to create a new whole. This ability implies the production of a single communication (subject or discourse), an operations plan (research proposals), or a set of abstract relationships (scheme to classify information). Combine unorganised parts to form an 'all'.
	Subcategories: 5.1 production of the original communication; 5.2 production of a plan or proposals for a set of operations; and 5.3 derivation of a set of abstract relationships.
	Examples of verbs: categorise, combine, compile, compose, design, build, create, develop, establish, formulate, generalise, devise, modify, organise, originate, plan, propose, reorganise, relate, revise, rewrite, summarise, systematise, write, structure, set up, project.

Source: partially modified from Ferraz and Belhot (2010) [47].

Concomitantly, the analysis is deepened by examining the level of questioning of each activity, for which we resort to the three levels of questioning that was proposed by Arthur Costa. Based on Bloom's taxonomy, Costa [48–50] grouped the six categories into three levels of questionings according to intellectual complexity. This simplification makes analysis easier, focused on a new aspect: the importance of communication sources and how they intersect to generate their own knowledge [44]. The three degrees that were described by Costa are information collection, which coincides with categories 1 and 2 of Bloom (knowledge and understanding); information processing (categories 3 application and 4 analysis); and, application of information (categories 5 and 6, evaluation ad creation). Accordingly, the three Costa's levels are: level 1, introduction to knowledge; level 2, implementation of the learned knowledge, and, level 3, demonstration of a certain mastery of the knowledge learned.

In sum, the analysis that was carried out combines both Bloom's taxonomy and Costa's Levels of Questioning, establishing six categories of analysis.

The methodology used has been an exploratory case study. The analysis of frequency content when evaluating the activities (both by Bloom and Costa) has been carried out by completing the activities and reflecting on the type of cognitive process that took place in each of them. With the idea of shedding more light on how the definitions of each category of analysis were used (both Bloom and Costa), below (Table 2), is presented with some examples of activities.

Table 2. Example of activities categorized (according to Bloom and Costa) and explanation of the pertinent reason.

Activity	Bloom's Tax/Costa's Lev	Explanation
At what point in history does the deterioration of the environment become important?	Knowledge/1	Simple activity, consisting only of remembering a datum collected a few pages earlier in the textbook.
Explain in your own words why pollution is harmful.	Understanding/1	This activity involves understanding the phenomenon of pollution to explain its danger.
How can you apply what you have learned about the rule of the three R's?	Application/2	This activity involves the use of what has been learned to apply it in real life to new situations.
Check a water bill you have at home and analyse your data; In month have you consumed more water? And less? Analyse possible reasons.	Analysis/2	This activity involves the analysis of graphs or data, recognizing a data, the one with the highest /lowest consumption, and analyzing the possible reason.
Find out what are the 3 most populated cities in the world and in which countries are; Make a list of environmental advantages and disadvantages of living in a big city.	Evaluate/3	The activity implies the ability to judge a material for a specific purpose. In this case, environmental pros and cons of the cities investigated are evaluated.
Make a presentation on sustainable development, developing a script that responds to what sustainable development is, what elements make a city sustainable and what do you think about sustainable development.	Creation/3	It is a complex activity, since a series of ideas are used to create the presentation; The student demonstrates how to use the ideas learned, draw conclusions and give founded opinion.

On the other hand, the type of content on sustainability addressed in each activity is also examined. These categories were inductively determined, from an initial survey of the contents of all books. Thus, these are the aspects of sustainability under the focus of research, and thus their borders. The categories are mentioned and described below:

Human modification of the environment. These are activities to study how human actions have influenced the environment, its power to transform ecosystems, or how it has humanised the natural space. An example would be activities for which images as ploughing the land is commented, or to reflect on how the landscape is modified by the construction of a ski resort or a seaport.

Energy. Activities regarding energy are mainly focused on the distinction of renewable and non-renewable energies. Examples of activities in this case are to point out the types of energies (renewable or non-renewable), reflecting on the use of fossil fuels in everyday life, or the search for information regarding types of fuel other than fossil fuels.

Recycling. Activities that address recycling from different points of view: concept, to promote recycling as a measure that contributes to sustainable development, the 3Rs rule (reduce, reuse, recycle), or activities in which the student is proposed to build something with recycled products.

Ethical consumerism. This content can be treated in different ways by the activities: energy consumption, water . . . and all kinds of products in general. A concrete example of an activity is to ask the student to analyse the household water bill, determining in which months the consumption was greater and the possible causes.

Environmental issues. Activities where the main environmental problems are addressed: overpopulation, overexploitation of resources, pollution, etc. Examples of activities of this type could be the identification of different types of pollution (acoustic, luminous, of water, etc.) in a set of images or to have the student reflect on possible consequences of deforestation.

General. This last category encompasses activities that address the concept of or are related to sustainability and/or the environment, but it does not specifically refer to any of the items mentioned above, although they do require a reflection in which several of them must be considered.

Sample description. The sample consisted of different textbooks for sixth grade Primary Education in the subject of Social Sciences. This course is the only one examined, because, as established in the Spanish legislative framework (RD 126/2014) [51], this is the only course with contents that are related to sustainability. In total, seven textbooks from different publishers were analysed. These books have been chosen because most of these publishing houses are members of the National Association of Book Editors and Teaching Material (ANELE) and they have a majority market share in Spain. In addition, a notebook of activities, which were also analysed, accompanies some of the books analysed. Table 3 shows the main identifying data of each textbook.

Table 3. Main identifying data of the textbooks analyzed.

Publisher	Anaya	Edelvives	SM	Edebé	Santillana	Edebé Bil.	Vicens vivens
Title	Aprender es crecer en conexión	Superpixépolis SPX	Savia	Proyecto Global interactivo	Proyecto saber hacer	Global interactice project	Active class
Year	2015	2015	2015	2015	2015	2015	2015
ISBN	978-84-678-3401-7	978-84-263-9659-4	978-84-675-7568-2	978-84-683-2415-9	978-84-9305-558-8	978-84-683-2051-9	978-84-682-3034-4
Acronym	An6	Edlv6	SM6	Ed6	Sa6	EdBi6	VV6
UD about sustainab	1	1	1	1	1	1	1
UD total	6	6	7	8	8	6	9
%	16	16	14	13	13	16	11
Pages	127	135	159	151	147	133	176
Notebook *	Yes	Yes	No	No	No	No	Yes

All the textbooks belong to 6th course of Primary Education under LOMCE legal framework. All publisher belongs to ANELE. * Only considered notebooks with activities about sustainability.

3. Results

3.1. Analysis of Activities According to Bloom's Taxonomy and Costa's Levels of Questioning

As explained above, the different manuals were analysed following Bloom's taxonomy. The activities that were collected in the different textbooks were categorised according to the complexity of cognitive processes: 1A (remember), 1B (understand), 2A (apply), 2B (analyse), 3A (evaluate), and 3B (create). Simultaneously, the three levels of questioning of Arthur Costa were taken into consideration, so that activities 1A and 1B belong to the activities of introduction to knowledge; 2A and 2B are of the application type of knowledge; and, 3A and 3B are the domain and mastery of the treated knowledge. Table 4 shows the number of activities according to Bloom's taxonomy in each textbook. In addition, for each manual, the percentage of activities in each category in relation to the total is included in parentheses.

The values that are shown in this table allow for us to evaluate the quantity and cognitive complexity of the activities of each manual. In the case of manuals with notebooks of activities, it should be mentioned that the discussion of the analysis is jointly carried out (when considering both the activities of the book and the activities booklet).

Table 4. Number of each activity according to the Bloom's Taxonomy.

Publisher	1A	1B	2A	2B	3A	3B	Total
Anaya	2	0	3	0	0	0	5
Anaya Nb	1	2	1	1	0	0	5
Total Anaya	3 (30%)	2 (20%)	4 (40%)	1 (10%)	0 (0%)	0 (0%)	10
Edlv	3.5	0.5	1.5	1.5	0	0	7
Edlv Nb	2	2	1	0	0	0	5
TotalEdlv	5.5 (46%)	2.5 (21%)	2.5 (21%)	1.5 (12%)	0 (0%)	0 (0%)	12
SM	2 (20%)	0.66 (7%)	0.33 (3%)	4 (40%)	2 (20%)	1 (10%)	10
Edebé	2 12%)	5.5 (32%)	3.5 (21%)	2 (12%)	1 (6%)	3 (18%)	17
Santillana	3 (12%)	9 (37%)	3 (12%)	4 (17%)	5 (21%)	0 (0%)	24
Edebé Bil	4 (13%)	17 (55%)	7 (23%)	1 (3%)	2 (6%)	0 (0%)	31
VV	11	12	4.5	5.5	4	0	37
VV Nb	2	3	3	1	0	0	9
Total VV	13 (28%)	15 (33%)	7.5 (16%)	6.5 (14%)	4 (9%)	0 (0%)	46

Decimal figures of some data are since some activities are divided in several parts, with a different Bloom's Taxonomy each part.

Three groups with different tendencies can be established, according to the data that were observed in the table. In the first place, there is a group of manuals (Anaya and Edelvives) in which the number of activities is low, and which also has a low variety in terms of the categories established by Bloom's taxonomy. In addition, the low proportion of activities of low cognitive level in both cases is noteworthy. In the case of Anaya, the activities of low cognitive level (1A, 1B, 2A) represent 90% as compared to 10% of activities of a higher cognitive level (2B, 3A, 3B). The case of the Edelvives manual is similar in regard to values.

The books of SM and Edebé form a second group, also with a low number of activities, but with the widest variety of activities regarding Bloom's taxonomy. Although they have few activities, they are, at least varied in complexity. Of all the series analysed, the two manuals of this group are the only ones that present activities in category 3B (activities that involve the most complex cognitive processes). In addition, the high proportion of cognitively more complicated activities is noteworthy in the case of the SM textbook, with 70% of activities in 2B, 3A, and 3B.

The textbooks Santillana, Edebé Bilingual, and Vicens Vives form the third group. They present a high number of activities; the variety in terms of Bloom's taxonomy is between those in the first and second groups, with no activity in category 3B.

On the other hand, regarding the analysis of Arthur Costa's Levels of Questioning of the activities, Table 5, similarly to the previous one, sheds light on the number of activities and proportion in levels 1, 2, and 3. It is remarkable that, except in the case of SM, the textbooks have a high proportion of activities of introduction to knowledge (level 1). Three of the seven textbooks present a value higher than 60% for this category. As for the proportion of level 2 activities (implementation of learned knowledge), the analysis shows a proportion between 26% and 50%. For the level 3 activities, in which a mastery and understanding of the knowledge learned must be demonstrated, it should be noted that, with the exception of the SM textbook, in general, the proportion of these activities is not very high,

with less than 10% for the textbooks of Edebé Bilingual, Vicens Vives, Anaya, and Edelvives (the latter two do not present category 3 activities). Finally, and overall, if the total number of activities in all of the textbooks is considered, the proportion of level 1 activities (introduction to knowledge) is close to 56%, when compared to 32% of the application of knowledge and only 12% of domain and mastery of knowledge. This denotes the excessive presence of simple activities and, in turn, the scarcity of cognitively complex activities.

Table 5. Number of each activity according to the Level of Questioning of Costa.

Publisher	Level 1	Level 2	Level 3
Total Anaya	5 (50%)	5 (50%)	0 (0%)
Total Edlv	8 (67%)	4 (33%)	0 (0%)
SM	2.66 (27%)	4.33 (43%)	3 (30%)
Edebé	7.5 (44%)	5.5 (32%)	4 (24%)
Santillana	12 (50%)	7 (29%)	5 (21%)
EdebéBil	21 (68%)	8 (26%)	2 (6%)
Total VV	28 (61%)	14 (30%)	4 (9%)
TOTAL	84.16 (56%)	47.83 (32%)	18 (12%)

Decimal figures of some data are since some activities are divided in several parts, with a different Costa's Level of Questioning each part.

3.2. Analysis of Activities According to the Subtopic Addressed

As for the analysis of activities that are related to the subtopic of sustainability addressed, Table 6 illustrates the number of activities and the proportion in which they are found in each textbook. As previously mentioned, these contents are human modification of the environment, energy, recycling, ethical consumerism, environmental issues, and general activities on sustainability and the environment. The human modification of the environment, as can be seen, it is a subtopic that is hardly approached in the activities; in two of the seven books analysed, this topic is not present, while in the rest it never encompasses more than 10% of the total activities. Similarly, more than half of the analysed books do not address energy through activities, and, except for the case of SM, its presence is not very high. The case of recycling is very different: this content is present in almost all textbooks (except for SM) and, in some cases, such as Edebé, Edebé Bilingual, Anaya, and VV, its proportion is close to 30%, or even higher. Ethical consumerism is present in almost all books, although its presence is not very high, except in Edelvives (42%). As far as environmental issues are concerned, observing the percentages for each book in the table, this content is (except for the SM textbook) the most repeated and worked on in the different textbooks. Observing the last row of the table confirms this, which shows the total number of activities of each content and its percentage with respect to the total. As can be seen, the activities on environmental issues represent 35%, more than one-third. Finally, general activities on sustainability are unevenly addressed according to the book analysed: they are not addressed in Anaya; they are found in less than 15% of activities in SM, Edebé, and Edebé Bilingual; and, they are found in more than 20% of activities in Edelvives, Santillana, and Vicens Vives. In the global calculation, it is the third most addressed subtopic, behind environmental issues and recycling.

Table 6. Number of each activity according with the subtopic addressed.

Publisher	Human Modif.	Energy	Recycling	Ethical Consum.	Environment. Issues	General	Total
Anaya			3 (30%)		7 (70%)		10
Edlv		1 (8%)	2 (17%)	5 (42%)	1 (8%)	3 (25%)	12
SM	1 (10%)	3 (30%)	0	0	5 (50%)	1 (10%)	10
Edebé	0 (0%)	0 (0%)	7 (41%)	1 (6%)	7 (41%)	2 (12%)	17
Santillana	2 (8%)	0	5 (21%)	3 (13%)	6 (25%)	8 (33%)	24
Edebé Bil.	1 (3%)	0	12 (39%)	1 (3%)	13 (42%)	4 (13%)	31
Total VV	4 (9%)	3.5 (8%)	13 (28%)	1.5 (3%)	14 (30%)	10 (22%)	46
TOTAL	8 (5%)	7.5 (5%)	42 (28%)	11.5 (8%)	53 (35%)	28 (19%)	150 (100%)

4. Discussion

The research presented in this article intends to evaluate the treatment given to sustainability's related contents by the activities of the textbooks of the main publishers of Primary Education in Spain. Having presented the results, it is important to discuss how is this treatment, highlight the deficiencies, and discuss the possible implications of using these textbooks for the educator.

The analysis of the cognitive complexity of the activities, which has been addressed while considering both Bloom's taxonomy and Costa's levels of questioning, shows a high presence of cognitively simple activities (except for the case of MS, simple activities (1A, 1B, 2A) represent 63–90% of the total). This trend is also reflected in the analysis of Costa's questioning levels.

The high presence of little demanding activities for students (such as those that are mentioned in these examples: "Explain with your words what the environment is"/"Say what pollution is and give an example of each type"/"What are renewable energy sources? What are they?"), which, in addition, are sometimes presented in an atomized way, does not force students to deeper cognitive processes (such as an analysis of a certain depth or an evaluation process), and represent an impediment to reach an adequate competence level. It seems that most of the activities that are included in the mostly used textbooks are similar to the classic activities proposed years ago.

Regarding cognitively complex activities, they are generally broad, and allow the student a closer approach to reality and more meaningful learning. Activities like the one listed below: "Prepare a presentation on sustainable development, developing a script that responds to what is sustainable development, what elements make a city sustainable and what do you think about sustainable development", allow for greater maturation of ideas in students, as several concepts must be taken into account, in addition to requiring further elaboration. Regrettably, they are a minority. It would be interesting a greater presence of this type of activities.

On the other hand, regarding the analysis of the type of content addressed by these activities, an unequal treatment was found, depending on the subtopic or the chosen book. As a general trend, it was verified that the items with greater specific weight are environmental issues (35%) and recycling (28%).

Obviously, the educator must know the resources at his disposal well. It is true that, in some cases, there is certain dependence on the textbook [52], but it is important to overcome this. If an educator depended solely and exclusively on textbooks, like most of those analyzed, with a high presence of simple activities, and did not use any additional resources, we believe that students would have serious difficulties in learning these issues. But even more. It would be especially complicated to make the students aware of the importance of sustainability and also cause an impact on behaviors and attitudes that would favor it. Consequently, the teacher must overcome the deficiencies that the textbook may

present, promoting additional cognitively demanding activities, with issues and problems in which knowledge is significantly used, and as far as possible, covering a wide variety of contents that are related to sustainability and with a more globalized vision, including not only the ecological dimension, but also the human and economic ones. In this sense, we consider the use of resources, such as the ecological garden, the storytelling, role-playing games in which different situations are simulated, or the development of models on sustainable cities at small scale interesting, with which more contents and with greater depth could be covered.

In short, it can be concluded that, with such a high proportion of activities at a low cognitive level and mainly focused on aspects, such as environmental problems and recycling, textbooks might be insufficient for a broad treatment of sustainability. This is in line with the reports of other authors [35–39]. Therefore, the work of the teacher is fundamental to make up for possible deficiencies.

5. Limitations

In this study, it has taken as sample textbooks of 6th grade of Social Sciences in Spain. The study has been limited to seven publishers. Although they are not all, the selected publishers account for most of the Spanish market share.

The analysis of activities has referred to its complexity (having as reference the Bloom's taxonomy and Costa's levels of questioning) and to the topics that are related to sustainability addressed. The content categories (human modification of the environment, energy, recycling, ethical consumerism, environmental issues, and general aspects related to sustainability) under the focus of research (and therefore, the research borders) have been inductively established after an initial survey of all books.

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