

SUSTAINABILITY IN PRIMARY EDUCATION IN SPAIN: AN APPROACH THROUGH TEXTBOOKS

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Abstract

The great development of the last decades, especially in developed countries, has led to the emergence of environmental problems that have made essential to promote sustainable development. Proof of it is the emphasis placed on Education for Sustainability by the United Nations and the increase of the specific weight of these issues in national educational curricula, as reflected in recent educational reforms, as it has happened in Spain. In this paper it is studied how the Spanish textbooks of Primary Education approach sustainable development, also performing an analysis of the activities related to this concept that are included in them. To carry out the relevant analysis it has been adapted an instrument in which three categories have been established for each textbook 'identification, characterization and how sustainability is treated'. The results suggest that there is no ideal book, and that the suitability would depend on the teacher's criterion.

Keywords: *Education for Sustainability, textbook analysis, Primary Education*

1. INTRODUCTION

Thanks to the development reached in the last decades, the quality of life of a large proportion of society, especially in developed countries, has improved: higher access to education, electricity and water supply, access to health system... However, this development has brought with it a huge number of environmental problems, not only of ecological kind (increased levels of pollution, deforestation, loss of biodiversity...) but also social ones: energy dependency, increasing difference between developed and developing countries... So important is the global impact caused by the human actions that a new geologic epoch has been proposed: Anthropocene (Waters et al 2016).

Fortunately, human being has begun to become aware of this problem, something essential to start undertaking measures in this regard. Nevertheless, much remains to be done in both senses: awareness of society and implementation of effective measures. To this regard, governments of countries have their share responsibility, but not 100%. It is a moral duty of every citizen and multiple institutions to contribute effectively to the solution. Every one of us would must contribute with our actions, because, although they could seem insignificant to get a sustainable development, in fact, they are essential. (Vilches et al., 2008).

2. BACKGROUND

2.1 Sustainable Development: a brief look at the history

Concern for sustainability is not new. In the second half of the 20th century, the scientific community started to notice the impact of human actions on the nature, as the loss of biodiversity (WWF, 2016). However, it is not until 1987 when the concept ‘sustainable development’ is born, in the so-called ‘Brundtland Report’. It would be not, however, until the 80’s of the last century that the term ‘sustainable development’ was coined for the first time. Specifically, in 1987, in the so-called ‘Brundtland Report’ (Brundtland Commission, 1987) This report defines sustainable development as the ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’.

A few years later, in 1992, The United Nations Conference on Environment and Development (UNCED), also known as Rio Summit, was held. One of the results of the summit was the creation of the well-known Local Agenda 21 (LA21 hereinafter), a voluntarily and not binding action plan to promote the sustainable development. This LA21 constituted a reference guide at local level for addressing sustainability from the 90's until nowadays (Valdes, 1994; Voisey et. al., 1996; Freeman et al., 1996; Evans and Theobald, 2003; Kern et al., 2007; Trenc et al., 2015; Wittmayer et. al., 2016). The idea of translating these actions at local level lies in the fact that many of the problems and solutions addressed in the LA21 had their root in local activities (United Nations, 1992). However, more than twenty years later, some authors have reported the existence of a gap between the ideal approaches outlined in LA21 and reality (Barrutia et al., 2015).

More recently, in 2015, the 193 Member States of the UN General Assembly unanimously adopted in New York summit the 2030 Agenda for sustainable development (United Nations, 2015^a): an action plan to carry out in the 2016-2030 period, in order to reach the 17 global sustainable goals (see Table 1) and 169 targets, spanning economic, social and environmental aspects. These 17 objectives expand in quantity and ambition the so-called 8 Millennium Development Goals (United Nations, 2015^b; see Table 1) proposed in 2000 and whose agreement was to achieve these goals in 2015. Coming back to the 2030 Agenda, it is stated that the main challenge is eradicating all forms of poverty, indispensable condition for sustainable development.

Table 1. 17 goals of 2030 Agenda (UN, 2015^a) and 8 Millennium Development Goals (UN, 2015^b)

17 Goals for Sustainable Development – 2030 Agenda	8 Millennium Development Goals
1-To end poverty in all its forms everywhere	1-To eradicate extreme poverty and hunger
2-To end hunger, achieve food security and improved nutrition and promote sustainable agriculture	2-To achieve universal primary education
3-To ensure healthy lives and promote well-being for all at all ages	3-To promote gender equality and empower women
4-To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4-To reduce child mortality
5-To achieve gender equality and empower all woman and girls	5-To improve maternal health
6-To ensure availability and sustainable management of water and sanitation for all	6-To combat HIV/AIDS, malaria and other diseases
7-To ensure access to affordable, reliable, sustainable and modern energy for all	7-To ensure environmental sustainability
8-To promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8-To develop a global partnership for development

- 9-To build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
 - 10-To reduce inequality within and among countries
 - 11-To make cities and human settlements inclusive, safe, resilient and sustainable
 - 12-To ensure sustainable consumption and production patterns
 - 13-To take urgent action to combat climate change and its impacts
 - 14-To conserve and sustainably use the oceans, seas and marine resources for sustainable development
 - 15-To protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
 - 16-To promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
 - 17-To strengthen the means of implementation and revitalize the global partnership for sustainable development
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Source: United Nations

As for 2030 Agenda, analysing the recent literature about it, it can be found different perspectives. There are those who extol the advantages that the objectives of the mentioned agenda can offer, as for example in the case of the prevention of violence (Lee et. al., 2015; Kjaerulf et. al., 2016) or education (OCDE, 2016). However, other authors are less optimistic, and they are suspicious about the chances of success, being critical or, at least, skeptical with these goals, especially with those related to the gender equality (Razavi, 2016; Bidegain and Rodríguez, 2016).

2.2 Education for Sustainability

Education for Sustainability is essential to inculcate in citizenship the importance of sustainability. This concept is not only referred to the acquisition of knowledge, but also competences, attitudes and values to promote it.

The Agenda 21, previously mentioned, was the first document in addressing the education as vital importance element to promote and reach a sustainable development, as can be found in its chapter 36. To highlight this idea, UN proclaimed the 2005-2014 period as The Decade of Education for Sustainable Development, appointing The United Nations Educational, Scientific and Cultural Organization (UNESCO) to lead and coordinate it. On the other hand, as far as the 2030 Agenda is concerned, the 4th goal (of ‘the 17 goals to transform our world’) is the one referred to the educational tool to improve the people’s lives and sustainable development.

In the literature several analyses about the Education for Sustainability can be found. It must be distinguished formal (Huckle, 2009, 2012; Berglund and Gericke, 2016; Mogren and Gericke, 2017; Brkić-Vejmelka et al., 2018) and non-formal education (Duke and Hinzen, 2014; Gómez-Martín et al., 2014; Casey and Asamoah, 2016).

As for the formal education, in this context, Huckle (2009) reports that the transmissive model is the most habitual in the teaching of Education for Sustainability. On the other hand, interesting are the researches carried out by Mogren and Gericke (2017a & 2017b) about the implementation of Education for Sustainable Development in Swedish Secondary schools. The authors concluded that transformative educational perspectives are habitual and essential strategies for maintaining high standards of Education for Sustainable Development. Another study (Berglund and Gericke, 2016) carried out also in Sweden with Secondary students reveals how change their perspectives of problems and situations on sustainability, depending if they considerate environmental, economic or social dimensions separately or integrally. Under a

global perspective, the study by Jahn et al. (2011) can be mentioned. In it, it is shown the use of cartography and geography information systems (GIS) for students of 10-16 years old in Germany. De Miguel (2012) shows another possibility of using the GIS focused in the context of sustainability, also with secondary students, in this case in Spain, with the aim of enhance the comprehension of the urban sprawl. Other works have analysed the treatment given to sustainability in school textbooks (Boehn and Hamann, 2011; Andersen, 2017).

The perspective of Education for Sustainability in the Initial Teacher Training in Primary Education has been subject of study. Some of these research have been focused on the curriculum (Sureda-Negre et al., 2014), on the ideas of future teachers about sustainability ((Buchanan, 2012; Kennelly, Taylor and Serow, 2012; Wilson, 2012; Effeney and Davis, 2013; Cebrián and Pubill, 2014), among others. On the other hand, regarding the training of teachers for secondary school, Skou Grinsted (2013) shows how education for sustainability has been incorporated in the last years in Denmark in Geography.

2.3 The Sustainability and the Environment in the Spanish Primary Education Curriculum

The teaching of the environment and sustainability in the Spanish educational system has come a long way to the present. The General Organic Law of the Educational System (LOGSE Spanish acronym) approved in 1990, and developed at curricular level in 1991, was the first law in Spain that introduced the concern about the impact of the human transformations of the environment. This law entailed a change in the teaching of Social and Natural Sciences because these disciplines were integrated into a single subject, named 'Knowledge of the Natural, Social and Cultural Environment'. In it, the environment is understood not only where life takes place and human activity occurs, but also as a conditioning and determinant factor for these, and where undergoing continuous transformations because of this activity. Although it is true that there is not specific instruction on the environment, it is verifiable through one of the objectives of the subject, that it is expected in the same to teach some of the manifestation of human interventions in the environment, evaluate the scope of the same and adopt a defensive posture, recovering the ecological balance and conserving the natural heritage.

However, it is not until fifteen years later when the concepts of environment and sustainability appeared in the legislation of the Spanish Primary Education. In 2006, the adoption of the new Organic Law on Education (LOE Spanish acronym) introduced some modifications to the previous legislation (LOGSE), such as the basic competencies, the updating the curriculum, or the sequencing of learning during the three cycles in which this educational stage was divided.

The term 'Environment' appears as a educational content to work transversally in one of the eight basic competences established: 'Competence in knowledge and interaction with the physical world', which enables specifically to interact with the physical world, both in its natural and social aspects. In this way, this competence makes possible the understanding of events, the prediction of consequences and the activity aimed to the improvement and preservation of life conditions and the environment. Inside the 'Knowledge of the Natural, Social and Cultural Environment' subject, the environment appears as content to teach in second (8-9 years) and third (10-11 years) cycle, within Block 1: 'Milieu and its conservation', see Table 2. It addresses aspects related to the conservation and improvement of the environment, as well as to analyse the direct influence of human activities on the environment and its harmful effects, trying to reach the balance of ecosystems using sustainable resources.

Table 2. Environment and sustainability in LOE

	Cycle	Contents	Evaluation Criteria
Knowledge of the Natural, Social and Cultural Environment	2 nd (8-9 years old)	Block 1. Milieu and its conservation Respect, defence and improvement of the environment	To recognize the importance of the sustainability of the ecological balance and the need to adopt respectful attitudes to the environment, the need to conserve these resources, especially with respect to the use of water
	3 rd (10-11 years old)	Block 1. Milieu and its conservation Humans as components of the environment and their capacity to act on nature	To specify examples in which human behaviour influences positively or negatively on the environment; To describe some effects of pollution on people, animals, plants and their environments, indicating alternatives to prevent or reduce it, as well as examples of waste of resources such as water with explanations of conservationist attitudes

Source: LOE Legislation

More recently, in 2013, a new educative law was adopted: The Law for the Improvement of Educational Quality (LOMCE Spanish acronym), which has substantially modified the Spanish educational system. The main changes in Primary Education affect to the teaching and learning process: the educational objectives of each subject disappear, and, as far as the field of evaluation is concerned, the so-named 'Evaluable Learning Standards', have appeared. They are specifications of the evaluation criteria that allow to define the results of learning, and that specify what the student must know, to understand and to know-how in each subject; they must be observable, measurable and evaluable. Furthermore, they allow graduate the achievement reached.

In addition, this new legislation has separated the disciplines of Social Science and Natural Science in two different subjects (as in the past), but maintaining the same number of class hours of the previous law (LOE) for the unified subject. Another relevant aspect is also the disappearance of the cycles, so, now the Autonomous Communities and the Educational Centres are who should organize the learning progressions and the contents to be taught in each course.

The relevant legislative document (RD 126/2014) which establishes the contents, evaluation criteria and evaluable learning standards, specifically addresses the concept sustainability in two different areas of knowledge (see Table 3). Firstly, in the case of Natural Science, within the block 4: Matter and energy. In it, sustainability is linked to the responsible use and consumption of both renewable and non-renewable energy sources and the problems caused by the latter. As far as the Social Science is concerned, the term 'sustainability' appears in the block 2 'The world we live in'. It explicitly mentions sustainable development as content to be taught. Its teaching is linked to human intervention in the environment, the environmental problems arising from it and its possible solutions, and the sustainable use of resources in the territory.

Table 3. Environment and sustainability in LOMCE

	Contents	Evaluation Criteria	Evaluable Standards	Learning
Natural Science	Block 4. Matter and energy Sources of renewable and non-renewable energy. Sustainable and equitable energy development	4. To plan and conduct simple research to study the behaviour of bodies in light, electricity, magnetism, heat or sound	4.4. The student identifies and explains the benefits and risks associated with the use of energy: depletion, acid rain, radioactivity, explaining possible actions for sustainable development	
Social Science	Block 2. The world we live in Human Intervention in the environment. Sustainable development	17. To explain the influence of human behaviour on the natural environment, identifying the sustainable use of natural resources by proposing a series of measures necessary for the sustainable development of humanity, specifying their positive effects	17.1. The student explains the sustainable use of natural resources by proposing and adopting a series of measures and actions that lead to the improvement of the environmental conditions of our planet	

Source: LOMCE Legislation

3. ANALYSIS

3.1 Methodology

Once mentioned the curricular elements that must be considered in the teaching-learning process of sustainability in Primary Education, it can be addressed the purposes of this work. The main objective is to know how the school textbooks -the most frequently educational resource used by primary school teachers in Spain- work the sustainability in the Spanish educational system. Specifically, it is intended to analyse the teaching of this concept in the Social Science textbooks of the sixth year of Primary Education for 11-years-old students, through the analysis of contents, images, photographs and type of activities used in the learning process.

To analyse the textbooks, an instrument has been used under the definition of categories. The analysis grid has been adapted and constructed from the one used by Cristina Maia (2010) in her doctoral thesis titled ‘Guerra Fria e Manuais Escolares - Distanciamentos e Aproximações’, (can be translated as ‘Cold War and School Textbooks - Distances and Approaches’), defended at the University of Porto (Portugal), establishing three main categories: ‘identification of school textbook’, ‘characterization of the school textbook’ and ‘the studied concept (sustainability) in the school textbook’.

The first category, ‘identification of the school textbook’, aims to present the general identification data of the school textbook, especially those referring to the publisher, year of publication, grade and level of education to which they belong. In the second category of analysis, ‘characterization of the school textbook’, it is intended to analyse the technical quality of the same and the internal organization. The first parameter focuses on aspects related to design, and the second on the structure of the textbook. They allow us to know the internal

consistency of the same, checking the following elements: number of pages, DU, textbook presentation, index, initial evaluation, bibliography, etc.

The third category is referred to the concept studied in the pertinent textbook, in this case it is referred to the concept of sustainability. In it, it is intended to perform and interpretate the analysis of this content, through the ideas that are transmitted and the degree of deepening in the teaching-learning process. For this intention the following elements have been considered:

- a) Number of lessons that includes the sustainability concept and proportion respect to the total
- b) Main ideas related to the author's text
- c) Concepts that are worked
- d) The type of activities selected for sustainability learning

As for the type of activities, in this part of the study, typology previously used and validated by other authors (Claudino, 2010; Martinha 2010, 2011; Martínez 2016; Martínez and Arrebola, 2016) have been used in this work.

This is the classification established in the project 'Manuais, e-mauais e actividades do alunos' (can be translated as 'textbooks, e-textbooks and student activities'), a research carried out for several school disciplines, as Geography among others, and carried out by the University Lusofona (Portugal) and CEIEF (Centre for Interdisciplinary Studies in Education and Development) (Duarte et al., 2009; Martinha, 2011). This project tries to evaluate portuguese textbooks to know if they are useful didactic resources for a learning based on competences. To do this, they establish four typologies of activities (table 4): rote learning and interpretative type activities (type 1 and 2 respectively, simpler from the cognitive point of view), concept reformulation activities (type 3) and activities that contribute to the development of basic skills in students, the most complex ones (type 4).

Table 4. *Typology of activities in the textbooks*

Typology of activities	Descriptors
1.- Rote learning or transposition activities	To indicate To enumerate To copy To distinguish To list To locate To point To transcribe
2.- Document exploration and production (Interpretation of graphs, sentences, diagrams and problem solving based on a model shown)	To describe To characterize To Identify To exemplify To compare To classify To interpret tables, schemes, images
3.- Reformulation activities	To tell

(Definition of concepts, syntheses, summaries, paraphrasing, others)	To narrate To comment To explain To enlarge To summarize To reconstruct To synthesize To transform
4.- Problematic situations/ Experimental activities/ Projects/ Production of knowledge	To debate To evaluate To participate in projects To research

Source: 'Manuais, e-mauais e actividades dos alunos' (Duarte et al., 2009; Martinha, 2011)

3.2 Description of the samples, results and discussion

Once the instrument was defined, it has been established the sample: 9 school textbooks (belonging to 6 Spanish publishers: Anaya, Edebé, Edelvives, Santillana, SM and Vicens Vives). Anaya, Edebé, Santillana and SM are integrated into ANELE (National Association of Book Publishers and Teaching Material). The sample represents almost the entire textbooks market of sixth grade of Social Sciences of Primary Education in Spain. All textbooks belong to the sixth course of Primary Education, belonging Social Sciences subject. All the books analysed have been published in 2015, according to LOMCE legislation. Six of these textbooks are written in Spanish, and the other three, in English, suitable for bilingual courses.

In our work, a comparative of the different textbooks is carried out to evaluate the differences with respect to the treatment of the sustainability concept is given by each publisher.

Table 5 lists different aspects of each textbook, which allows identifying them (category 1 of the grid analysis mentioned above) and characterizing them (category 2). These aspects are, for category 1 (identification of the textbook): title of textbook, year, school year, subject, ISBN and acronym (given to facilitate its mention throughout this analysis). The existence of an activities notebook (with ISBN) is also shown. As for the aspects that characterize the school textbook (category 2) are also listed: pages number, number of didactic units (DUs), textbook presentation, index, initial evaluation and bibliography. Additionally, two aspects referred to the category 3 (sustainability in the school textbook) as number of DUs referred to sustainability and percent respect to the total can be also seen.

Table 5. Description and identification data of the textbooks analysed

Cat	Publisher	Anaya	Anaya Bil.	Edebé	EdebéBil.	Edelvives	Santillana	SM	Vicens Vives	VicensVives Bil.
1	Title	Aprender es crecer en conexión	In focus	Proyecto global interactivo	Global interactive project	Superpixé polis SPX	Proyecto saberhac er	Savia	Aula activa	Active class
1	Year	2015	2015	2015	2015	2015	2015	2015	2015	2015
1	School year	6 th	6 th	6 th	6 th	6 th	6 th	6 th	6 th	6 th
1	Subject	Social Science	Social Science	Social Science	Social Science	Social Science	Social Science	Social Science	Social Science	Social Science
1	ISBN	978-84- 678- 3401-7	978-84- 678- 8221-6	978-84- 683-2415-9	978-84- 683-2051- 9	978-84- 263-9659- 4	978-84- 9305- 558-8	978-84- 675- 7568-2	978-84- 682- 3084-9	978-84-682- 3034-4
1	Acronym	An6	An6Bi	Ed6	Ed6Bi	Edlv6	Sa6	SM6	VV6	VV6Bi
1-2	Activities notebook	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes
1-2	ISBN Act- Notebook	978-84- 678- 8211-7				978-84- 263-9660- 0	Same ISBN	878-84- 675- 7580-4	978-84- 682- 2808-2	978-84-682- 2808-2
2	Pages number	127	71	151	133	135	147	159	169	176
2	DUs total	6	6	8	6	6	8	7	9	9
2	Textbookpresentation	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
2	Index	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Initialevaluation	No	No	No	No	No	No	No	No	No
2	Bibliography	No	No	No	No	No	No	No	No	No
3	DU sustainability	1	1	1	1	1	1	1	0	1
3	%	16	16	13	16	16	13	14	0	11

As mentioned before, all the textbooks analysed belong to the sixth course. The corresponding activity books were also analysed (in those textbooks that had one). All books deal with the concept of sustainability in one lesson, except for VV6, which do not deal it. Therefore, this book has been discarded for the remaining analysis.

Continuing with the analysis of the remaining textbooks, it is important to highlight the fact that the concept of sustainability was integrated into lessons related to relief, landscape or the environment, depending on each publisher (see Table 6).

Table 6. Original titles and topics of the lessons which deal sustainability

Textbook	Original title of the lesson (DU) that deals the concept of 'sustainability'	'Topic of lesson'
An6	El medio físico de Europa. Medio ambiente	Relief & environment
An6Bi	Landforms and territories of Europe	Lanscapes
Ed6	El medio ambiente	Environment
Ed6Bi	The environment	Environment
Edlv6	Los paisajes de España y Europa	Landscapes
Sa6	El impacto humano en el medio ambiente	Human impact on environment
SM6	Los paisajes de Europa	Landscapes
VV6	*	*
VV6Bi	Human intervention in the environment	Human impact on environment

Continuing with the analysis of the treatment given to sustainability, below there is a description of the ideas and concepts worked in each textbook, and how are they structured:

An6 → In this case, the DU is structured in 2 parts without apparent connection. On the one hand, it is about the European relief, and on the other, it deals with global environmental problems, addressing climate change, the ozone layer, the greenhouse effect, environmental pollution and the overexploitation of resources. As a closing of the lesson, it addresses the protection and conservation of the environment, introducing aspects related to sustainability, such as waste hierarchy.

An6Bi → Idem An6

Ed6 → This textbook contains a specific DU about the environment. The subject begins with a brief analysis of the human alteration to the environment along history, linking it with the main environmental problems (environmental pollution, resource depletion, climate change...). Once addressed the environmental issues, it deals with the environment protection, through the analysis of protected natural spaces and recycling. The lessons finishes with a specific epigraph on sustainable territorial development, in which measures are addressed to reach it from the economic, environmental and social perspectives.

Ed6Bi → The book firstly deals with the environment, to continue with environmental problems such as pollution and its effects: ozone hole, greenhouse effect, acid rain and smog... among others. Later, it addresses the protected areas, and finally, a specific section on sustainability. It also includes government measures to protect the environment and the waste hierarchy.

Edlv6 → The corresponding DU addresses general environmental problems from the perspective of the landscapes of Spain and Europe. After working the types and changes of landscape, it addresses the main environmental problems and the measures to be taken to protect the environment from the point of view of sustainable development.

Sa6 → In this case, the DU speaks about the human alterations to the environment and the problems derived from these actions, such as deforestation or overexploitation of natural resources. It then addresses the environment protection from both individual and governmental perspectives; as for the second case, it is highlighted the landscapes and natural spaces protection. The lesson finishes with the elaboration of a small project on sustainable development.

SM6 → This textbook addresses the study of the environment linked to the landscape of Europe. The relevant DU first deals with relief, rivers, climates, landscape and vegetation, and finally, conservation of the environment. This section places special emphasis on aspects related to climate change and the implementation of sustainable development, trying to combine economic, social and environmental perspectives. In any case, the epigraph that deals with the environment is not contextualized with the rest of the lesson.

VV6Bi → The corresponding lesson starts by addressing the topic from the human impact under the environment perspective. It deals, firstly, with environmental problems, followed by the need to protect the environment. After it explains how protect it, introducing the concept of sustainability in this way. In any case, the treatment of sustainability in this textbook is always from an ecological point of view.

To sum up, as can be observed, in most of the books sustainability is dealt from an ecological and environmental perspective, but hardly under social or economic optic. Only the Ed6 and SM6 textbooks offer a globalized vision of sustainability, in which this concept is approached from the ecological, economic and social dimensions.

3.2.1 Analysis of activities

Once analysed the contents of the DUs working on sustainability, within category 3, the analysis of the typology of activities in each textbook is presented beneath. Table 7 shows the number and typologies of activities about sustainability. As previously have been mentioned, it has considered 4 types for the analysis (see Table 3). Type 1 is referred to activities of rote learning; Type 2 is referred to exploration and production of documents; type 3 are reformulation activities and finally, type 4 is about to those activities referred to problematic situations and research works. As can be seen, the textbooks with more activities about sustainability are those of Vicens Vives and Edebé publishers, VV6Bi and Ed6Bi, whereas An6, An6Bi and SM6 hardly have activities related to this subject (only 3, 0 and 2, respectively). The remaining textbooks have an intermediate number with a range of 10-12 activities.

Table 7. Number and type of activities in each of the textbooks analysed

Type of activity	An6		An6Bi		Ed6		Ed6Bi		Edlv6		Sa6		SM6		VV6Bi	
1	0	0%	0	0%	2	20%	4	26%	5	41%	0	0%	2	100%	12	52%
2	0	0%	0	0%	2	20%	0	0%	3	25%	3	27%	0	0%	1	4%
3	3	100%	0	0%	3	30%	9	60%	3	25%	4	36%	0	0%	6	26%
4	0	0%	0	0%	3	30%	2	13%	1	8%	4	36%	0	0%	4	17%
Total activities about sustainability	3		0		10		15		12		11		2		23	

*For each sample, left column represents number of activities of each category; right column shows percent of total activities about sustainability

As for the activity typology analysis (excluding of the same to the sample An6Bi) the samples An6 and SM6 show a low variety of activities: only activities with typologies 3 and 1, respectively. In contrast, the textbooks Ed6, Ed6Bi, Edlv6, Sa6 and VV6Bi show a wider variety of activities on this subject as can be visualized in the Figure 1. Of all samples analysed,

the Ed6 book shows the most equilibrated ratio between activities. Similarly, the books Edlv6 and VV6Bi contain at least one activity of each typology. However, in these samples there is a slight tendency to rote learning activities, slightly more marked in the VV6Bi sample. Finally, as for Ed6Bi and Sa6 books, they show three different typologies of activities (but nothing for type 2 (Ed6Bi) and type 1 (Sa6)). It is remarkable for these two samples the fact that they show the highest proportion of the most complex activities (type 3 + type 4), with 73% (60%+13%) and 72% (36%+36%), respectively. (It has been excluded An6 sample, with a 100% of activities typology 3 but with only 3 activities and 0 of others type).

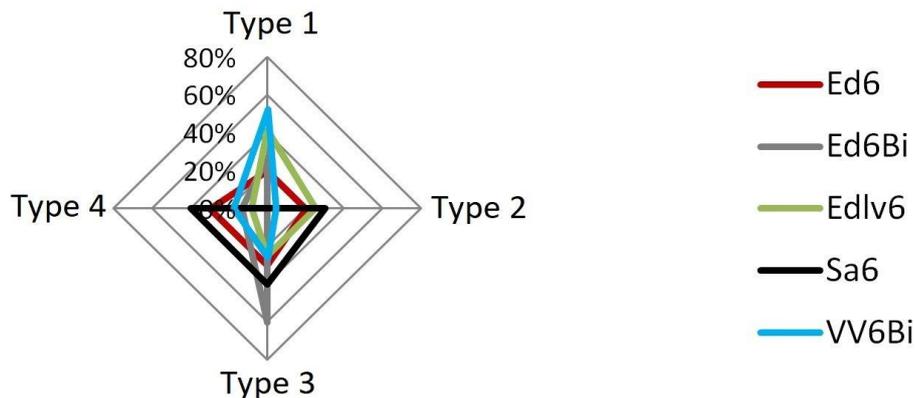


Figure 1. Graphic distribution of activities typology for each textbook

In summary, it cannot be stated that there is an ideal book in terms of the number and type of activities related with sustainability. Depending on the criteria, it could be considered suitability in terms of quantity (choosing in this case Ed6Bi & VV6Bi), in terms of variety (Ed6 is the textbook with the best balance between the 4 types of activities) or, in terms of a greater proportion of complex activities (type 3 + 4; Ed6Bi and Sa6 are the best ranked in this way).

4. CONCLUSIONS

To conclude, at the present work it has been analysed how the concept of sustainability is focused in different textbooks in Spain, using Social Science textbooks of sixth grade primary school under LOMCE law frame. Of all books analysed, only one does not deal with sustainability. Considering the remaining, firstly, it is remarkable the fact that there is not a lesson exclusively dedicated to this concept, and it always appears located in DUs whose thematic is 1) the environment, 2) the human impact on the environment or 3) landscapes. In addition, regardless of the DU where it is located, the most common sustainability approach is from an ecological perspective. Only two of the books analysed (Ed6 and SM6) offer an integrated view of sustainability, considering an economic, ecological and social perspective.

As far as the analysis of activities is concerned, no books stand out absolutely in terms of quantity, wide variety and complexity of activities. However, trying to have a greater vision in terms of quantity, variety and complexity of activities, Ed6Bi textbook could be the best positioned, because it is the second one in terms of quantity of activities, with a wide variety (although not the largest), and is also one of the textbooks with higher proportion of complex activities (typologies 3 + 4).

Finally, if all aspects analysed about the treatment given to sustainability in each textbook are considered together, including structure, quantity and variety of activities... the choice of an ideal book becomes ever more complex. In this sense, for instance, the one that offer the

most integrated vision of sustainability are not the most prominent in the activities analysis. Thus, the decision of the most complete depends on the criterion considered as the more relevant, being this a less objective question.

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