



EQUALITY IN GREK PRIMARY EDUCATION TEXTBOOKS: A QUANTITATIVE CONTENT ANALYSIS WITHIN THE FRAMEWORK OF EDUCATION FOR SUSTAINABLE DEVELOPMENT

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Abstract:

This study examines the extent to which the principle of equality is embedded in primary education students' books within the framework of Education for Sustainable Development. Positioned within the social dimension of sustainability and aligned with the European Union Charter of Fundamental Rights, the research investigates how key equality-related themes, namely ethnic, cultural, linguistic, and religious diversity, children's rights, and inclusion of people with disabilities, are represented in Greek primary school textbooks. A quantitative content analysis was conducted on students' study books and workbooks used in the "Study of the Environment" course across grades 1 to 4. The unit of analysis was the textbook page, and a structured coding scheme was applied to identify and categorize equality-related content. The findings reveal that references to equality are limited (26.3% of total pages) and unevenly distributed across grades, textbook types, and thematic axes. Children's rights emerge as the most frequently represented dimension, while religious and linguistic diversity remain marginal. Additionally, equality-related content appears more often in activities than in core explanatory text, raising concerns about conceptual depth and coherence. The study highlights significant gaps and inconsistencies in the progression of equality-related content across grades, suggesting a fragmented approach to fostering social sustainability competencies. These findings point to the need for more coherent curriculum design and systematic integration of equality principles in textbook development. By providing empirical evidence from a national case, the study contributes to broader discussions on the role of textbooks as policy instruments in advancing inclusive and sustainable education systems.

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Keywords: the principle of equality; Charter of Fundamental Rights of the European Union; primary school textbooks, quantitative content analysis

1. Introduction

Nowadays, critical thinking, creativity, and social-emotional learning (SEL) are considered essential skills for navigating future uncertainties (Smart, 2020). Focusing on the SEL dimension, Maurice J. Elias et al. (1997, p.5) defined it as *“the process of acquiring core competencies to recognize and manage emotions, set and achieve goals, appreciate the perspectives of others, establish and maintain positive relationships, make responsible decisions, and handle interpersonal situations constructively”*.

Such an approach towards learning is aligned with the Sustainable Goals of United Nations Agenda 2030 (UN, 2015), according to which sustainable development (SD) needs to be understood in multidimensional terms across the ecological, economic, and social dimensions. Although these dimensions differ qualitatively, each constitutes an equally important regulatory factor towards sustainability (WCED, 1987).

The environmental dimension aims to protect the environment through protection of ecosystems and biodiversity. It aims to reduce pollution, using natural resources wisely and using sustainable ways of consumption and production. It is based on respect for all parts of the system and in its operation. Concepts are embedded in this ecological approach related to the ability to adapt and self-renew, the natural capital, the consumerism, the correct use of technology, population growth, etc. Through the economic dimension, economic thinking is studied in relation to environmental, social and economic conditions of each era. The economic dimension sets the natural environment as a background for the development of production relations, focusing on the rational way of exploiting natural resources. It studies environmental degradation because of pollution and considers it necessary to limit the state intervention. To achieve economic development, according to this dimension, its preservation should be considered natural environment. The goal is always sustainability, development and growth. Finally, the social dimension is the third dimension, and it contributes to the interpretation of many complex problems as well in finding solutions in places with similar economic and physical characteristics, in different socio-political contexts. This dimension of sustainability concerns issues of human rights, peace, political expression, overpopulation, promotion of education, tackling poverty, health, etc. It is related to the principles of equity, equality and justice and examines the social problems of the entire planet as consequence of the economic policy of the world's powers (UNESCO, 2005; UNESCO, 2014).

According to Education for Sustainable Development Target 4.7 (UN, 2015), *“by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-*

violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development''.

Within this framework, principle of equality is understood as the condition in which all individuals enjoy equal rights and freedoms regardless of gender, age, nationality, income, their social class, religion, language, ideology and health status (Fragkoudaki, 2001).

In particular, focusing on the society dimension, the issue of equality can be approached through the Charter of Fundamental Rights of the European Union (EU), declared in Nice by the European Parliament in 2000, which presupposes acceptance and respect for diversity (ethnic, cultural, linguistic, religious), in the rights of the child and in the integration of people with disabilities. This Charter establishes in EU legislation a series of political, civil, personal, economic and social rights of EU citizens. The purpose of the Charter is to strengthen the protection of the rights, in the light of social progress, of technological and scientific developments (Akrivopoulou & Anthopoulos, 2015). In the EU Charter of Fundamental Rights (2000) the issue of equality is defined and analyzed in chapter 3, and consists of the articles 20-26 (Equality before the law (20), Non-discrimination (21), Cultural/religious/ linguistic diversity (22), Equality between men and women (23), The rights of the child (24), The rights of the elderly (25) and Integration of persons with disabilities (26), respectively). EU, aware of its moral and spiritual heritage, establishes the universal value of equality creating an area of safety, justice and freedom for humankind. In this way it promotes sustainable and balanced development. The Treaty of Lisbon of 2009 refers to this Charter giving it legal force thus it is now being enforced by EU courts.

Embedding SEL, particularly the value of equality, into classroom practice remains challenging. Textbooks, however, can play a crucial role, as they convey not only knowledge but also social values, political identities, understanding of history and the world. Despite the increasing role of technology, textbooks continue to structure teaching content and pedagogy. At the same time, they may limit innovation through static representations and uniform perspectives (Smart et al., 2020).

From the above perspective, textbooks can be seen in the classroom as possible carriers of efforts to infuse education with this perspective of learning, within the dynamic processes that take place in the classroom, revealing the potentiality of the textbooks to function as social instruments towards a social end (Wineburg, 1991). Focusing on the existing textbooks, it is evident that they reflect an already established approach to the content. Analysis of their content, from a point of interest, may reveal if the textbook is a strong carrier of the concepts of interest (strong content) that helps the teacher implement pedagogical approaches to guide the students towards the envisioned skills (strong pedagogy) (Smart et al., 2020). On the other hand, in the case of weak content detection, content analysis can make explicit to the teacher the parsimonious information and thus support the potentiality to be extended upon strong pedagogy.

To address these issues, this study focuses on the Greek primary education context, specifically the "Study of the Environment" (SE) course. It aims to explore how

the principle of equality is represented in students' books, addressing a notable research gap. This study contributes to the field in three ways. First, it provides a systematic and comprehensive mapping of equality-related content across primary education textbooks, addressing a gap in literature where such analyses are often limited to single dimensions (e.g., gender or human rights). Second, it operationalizes the principle of equality through a multi-axis framework grounded in the European Union Charter of Fundamental Rights, offering a structured approach for textbook evaluation. Third, it generates empirical evidence from the Greek context that can inform broader European and international discussions on the role of textbooks as policy instruments for advancing Education for Sustainable Development. Although the analysis focuses on the Greek context, the findings are relevant beyond national boundaries. Similar concerns regarding the limited and uneven representation of equality and diversity have been identified in textbook studies across different countries, suggesting a broader systemic challenge in aligning curricular materials with the goals of inclusive and sustainable education. Therefore, this study contributes to an international dialogue on how education systems operationalize equality within formal curricula and learning materials.

The study is guided by the following research questions (RQs).

- **RQ1:** What is the dispersion of the detected information per axis and book/grade/across the grades?
- **RQ2:** What is the dispersion of the detected information per function of the text and grade/across the grades?

2. Literature review

Research on textbook content analysis has extensively examined how educational materials represent social values, identities, and power relations. Textbooks are not neutral carriers of knowledge; rather, they reflect dominant ideologies and cultural norms, shaping students' understanding of society and their role within it (Wineburg, 1991; Smart et al., 2020). Within this context, the concept of equality has attracted increasing scholarly attention, although often through fragmented perspectives.

A significant body of research has focused on gender equality in textbooks. Studies such as Aydin-Ceran (2023) highlight persistent gender imbalances in primary education materials, while Cobano-Delgado and Llorent-Bedmar (2019) explore how gender identities are constructed during childhood through educational content. Similarly, Ahmad and Shah (2019) and Shallaita, Nawawi, and Amin (2021) demonstrate that stereotypical representations continue to dominate, often reinforcing traditional gender roles rather than promoting inclusive perspectives. These studies reveal that, despite policy advances, textbook content frequently focuses on reflecting gender equity.

Beyond gender, research has also addressed children's rights and broader social dimensions of equality. For instance, Akcan and Bakir (2023) analyzed life studies textbooks and found that while references to children's rights are present, they are often limited in depth and lack critical engagement. This indicates a tendency for textbooks to

include normative statements without fostering deeper understanding or critical thinking.

In the Greek context, studies have examined specific aspects of equality and sustainability in educational materials. Kamaretsou and Kitsiou (2019) investigated environmental education and gender inequalities in primary school textbooks, identifying both progress and persistent gaps. Tsekou (2016) explored human rights in secondary religious education textbooks, emphasizing the role of education in promoting a pedagogy of peace. Additionally, Katopodi (2019) analyzed representations of democracy and politics in civic education textbooks, highlighting how sociopolitical concepts are framed within the curriculum.

Despite these contributions, the literature reveals some important limitations. Most studies adopt a single-axis approach, focusing on one dimension of equality (e.g., gender, human rights), thereby overlooking the multidimensional nature of the concept. Also, there is a notable lack of research in early primary education, particularly regarding integrated subjects such as the “Study of the Environment” in the Greek context. Moreover, limited attention has been given to aligning textbook analysis with broader policy frameworks such as the Charter of Fundamental Rights of the European Union or the goals of Education for Sustainable Development. This creates a gap between curricular intentions and the actual content delivered through educational materials.

Therefore, there is a clear need for a content analysis to detect the principle of equality in primary education textbooks, grounded in an integrated theoretical framework. Addressing this gap, the present study focuses on the Greek “Study of the Environment” students’ books, aiming to answer the RQs. Such findings may set the basis for critical thinking on the contribution of the students’ books towards the cultivation of SEL competencies within the broader context of Education for Sustainable Development.

3. Method

A quantitative content analysis approach was performed (Bryman, 2017) upon the following methodological framework.

3.1 Sample material

The research material was extracted from the textbooks of the course SE. This course was chosen, among other, as it is the basic candidate to promote the sustainable development mindset to young students. The textbooks in this course include, per grade, the student’s study book (SB) and workbook (WB) and the teacher’s textbook, which are organized in chapters and sections.

The SBs share of common structure with some minor differences per grade (e.g., in small grades the texts are smaller). They are organized in broad sections around a theme, which include chapters. At the top of each section and chapter there is the title. Each section is introduced by a preliminary organizer consisting of images and text and

can be in the form of a concept map. Each chapter introduces a sub-concept of the section, in running text, accompanied with visualizations (images, figures, graphs, sketches and/or tables), questions and/or comments and a box with the key vocabulary that is introduced and acts as a summary to the sub-topic. Moreover, each section ends with a summary page, to organize the knowledge as a whole and highlights the main points and activities are proposed that aim to enable students to understand, judge and interpret the world around them. Finally, at the end of the book there is a glossary with the main concepts and their definitions.

The WBs are organized in chapters entitled as the relevant ones to the respective SBs. Their content extends the content of the SBs chapters through individual and collaborative in classroom and homework activities. Different teaching techniques are proposed for individual and/or collaborative work per section and chapter.

For the content analysis, only the textual parts from SBs and WBs were used. In particular, the following texts were considered upon their function in the books: the *titles* of the sections and chapters, the *running text*, the *captions* that accompany all the visualizations, the *glossary*, the introductory *questions* and the textual prompts for *activities*.

The teacher's textbooks were excluded from the content analysis, as, from a rough examination of their content, there was not information enough to proceed. However, the existing one is commented in the discussion section below.

3.2 Coding procedure

The study material for the course SE was developed upon a curriculum that refers to rights and needs of the members of a community, in respect of the cultural diversity and gender equality and national understanding. Indicatively, concepts and attitudes that are included are needs and rights (1st grade, 1G), needs and rights, everyone equal- all different (2G), people and needs, human rights, men and women equal in life and work, everyone different -all equal (3G), equality at work, similarities and differences in communication between people, the culture of the Greeks and culture of other people (4G).

To construct the coding scheme for the content analysis upon the Charter of Fundamental Rights of EU, the following axes were selected: *ethnic, cultural, linguistic, and religious diversity, rights of the child and inclusion of people with disabilities and other people*. The selection of the specific axes of reference was made upon a) the age and the cognitive level of the students, and b) the cognitive boundaries that are set by the content of the curriculum and hence the content of the SBs and NBs. Finally, the information that was registered was either the exact wording of an axis and/or content related to it as presented in Table 1.

Table 1: The coding scheme (grade (G), study book (SB))

Axes of analysis	Codes	Examples
Ethnic diversity	References to concepts related to ethnic diversity descent, race, colour are registered	2G_SB (page 14): "...John, Annouka and Ermal we are classmates" [comment by the authors: the names are of different nationalities]
Cultural diversity	References to concepts related to respect for cultural diversity is registered	4G_SB (page 49): "We compare towers: the tower of Pisa, with the White Tower" [comment by the authors: the White Tower is in Thessaloniki, a Greek city]
Linguistic diversity	References to concepts related to linguistic diversity are registered	4G_SB (page 134): "...the students met with a group of children from Finland. How did they manage to communicate?"
Religious diversity	References to concepts related to respect for religion diversity are registered	4G_SB (page 46): "Mosque in Thrace" [comment by the authors: Thrace is a region in Greece with Muslim minority]
Rights of the child	References to concepts related to human needs and children's rights to protection and care	3G_SB (page 134): "We are children we have rights"
Inclusion of people with disabilities and other people.	References to concepts related to the right of persons with disabilities to benefit meters autonomy, social and professional inclusion and participation in community life	3G_SB (page 127): "In Paralympian races athletes with disabilities take part"

The page was chosen as the unit of analysis. More specifically, the number of the pages where information relevant to each code was registered for each book. By dividing these pages with the total pages (tp) of a book the percentage and the relevant frequency of the presence of the information per code were calculated.

The quantitative content analysis was facilitated by the coding scheme that was developed and presented in Table 1. The examples facilitate the coding procedure by different coders. The coding took place independently by the two co-authors with the very satisfactory value of Cohen's Kappa $k=0,8566$.

While quantitative content analysis enables the systematic identification and comparison of patterns across a large corpus of material, it does not capture the depth, context, or potential implicit meanings of the representations. Nevertheless, it constitutes a necessary first step in mapping the presence and distribution of equality-related content, providing a baseline for future qualitative and interpretive analyses.

4. Results

In this section the results per RQ are presented.

RQ1: What is the dispersion of the detected information per axis and book/grade/across the grades?

Concerning the dispersion of the detected information per axis and book, Table 2 presents the percentage and the relevant frequency of the detected information per axis and pages (p) per book.

Table 2: Dispersion of detected information per axis, across grades (G), study book (SB) and workbook WB (percentage/frequency per book pages (p))

Axes	1G_SB (153p)	1G_WB (51p)	2G_SB (150p)	2G_WB (48p)	3G_SB (151p)	3G_WB (51p)	4G_SB (150p)	4G_WB (53p)
Ethnic diversity	5,2% 8/153	1,9% 1/51	2% 3/150	-	0,6% 1/151	1,9% 1/51	1,3% 2/150	11,3% 6/53
Cultural diversity	0,6% 1/153	-	-	-	1,3% 2/151	-	16% 24/150	9,4% 5/53
Linguistic diversity	-	-	-	-	2,6% 4/151	-	6,6% 10/150	7,5% 4/53
Religious diversity	-	-	2% 3/150	-	0,6% 1/151	-	2,6% 4/150	3,7% 2/53
Rights of the child	11,1% 17/153	15,6% 8/51	9,3% 14/150	4% 2/48	29,8% 45/151	5,8% 3/51	-	-
Inclusion of people with disabilities and other people.	7,1% 11/153	-	2,6% 4/150	-	14,5% 22/151	9,8% 5/51	-	-
Total	24,1% 37/153	17,6% 9/51	16% 24/150	4% 2/48	49,6% 75/151	17,6% 9/51	26,6% 40/150	32% 17/53

Table 2 makes explicit the dispersion of the information and particular the presence of the information of the axes of interest, per book. From the axes perspective it is interesting to notice in Table 2 the following:

- **Ethnic diversity:** The highest frequency is found in the 4G_WB (11.3%) followed by the 1G_SB (5.25%). The frequencies of this axis in the other textbooks do not exceed 2%, while in the 2G_WB it is not detected at all.
- **Cultural diversity:** It is found only in four of the eight school textbooks with a higher frequency in the 4G_SB (16%).
- **Linguistic diversity:** The highest incidence occurs in the 4G_WB (7.5%).
- **Religious diversity:** The highest frequency of occurrence is found in the 4G_WB (3.7%), while there is no mention of it in the 1G.
- **Children's rights:** Information in this axis is detected in all grades; books, except for the 4G. The highest frequency appears in the 3D_SB book (29.8%).
- **Inclusion of people with disabilities:** The highest frequency appears in the 3D_SB (14.5%), while it is completely absent from the 4G.

Concerning the dispersion of the detected information per axis and grade, from Table 2 and from each grade and each book perspective, in the 1G, the most frequently appearing axis in SB and in WB is the *rights of the child* (11.1% and 15.6%, respectively). In 2G, the most frequently appearing axis in SB is also the *rights of the child* (9.3%), whereas in the WB it is the only right that appears (4%). In the 3G, the SB is the only book that contains all the axes, with greater frequency again on the *rights of the child* (29.8%), whereas, in the WB *the integration of people with disabilities* axis has the highest frequency of occurrence (9.8%). In the 4G, the axis *cultural diversity* appears most often in SB (16%), whereas in WB the axis *ethnic diversity* shows a greater frequency (11.3%). From the last row of Table 2, it is evident that the maximum frequency appears in the SB of the 3G grade (49.6%), while the lowest frequency occurs in the WB of the 2G with a percentage (only 4%). Moreover, Table 3, presents the percentage and the relevant frequency of the detected information per axis and total pages (tp) of grade's books (SB plus WB).

Table 3: Dispersion of detected information per axis, across grades (G)
 (percentage/frequency per total pages (tp) of study book (SB) and workbook (WB))

Axes	1G SB & WB (204)	2G SB & WB (198)	3G SB & WB (202)	4G SB & WB (203)	Total (807)
Ethnic diversity	4,4% 9/204	1,5% 3/198	0,9% 2/202	3,9% 8/203	2,7% 22/807
Cultural diversity	0,4% 1/204	-	0,9% 2/202	14,2% 29/203	3,9% 32/807
Linguistic diversity	-	-	1,9% 4/202	6,8% 14/203	2,2% 18/807
Religious diversity	-	1,5% 3/198	0,4% 1/202	2,9% 6/203	1,2% 10/807
Rights of the child	12,2% 25/204	8% 16/198	23,7% 48/202	-	11% 89/807
Inclusion of people with disabilities and other people	5,3% 11/204	2% 4/198	13,3% 27/202	-	5,2% 42/807
Total	22,5% 46/204	13,1% 26/198	41,5% 84/202	28% 57/203	26,3% 213/807

From the grouping shown in Table 3, and specifically from the last row, it follows that the largest percentage of the information of interest across the axes is in the 3G (41, 5%). Moreover, upon the last column of Table 3, where the frequencies of per axis appear in all books, it is observed that the largest percentage is found in the axis of the *child rights* (11%), while the lowest percentage is in *religious diversity* (1.2 %). Finally, the total percentage of the information of interest across all the grades and books is 26,3%.

Considering the dispersion of the detected information per axis across the grades, Table 4 presents the dispersion of the detected information of reference per type of book across all grades.

Table 4: Dispersion of detected information per axis, across all grades (G), (a) per type of book (student book (SB), workbook (WB)), and (b) per total (percentage/frequency per total pages (tp))

Axes	1G-4G SB (604 tp)	1G-4G WB (203tp)	1G-4G SB & WB (807tp)
Ethnic diversity	2,3% 14/604	3,9% 8/203	2,7% 22/807
Cultural diversity	4,4% 27/604	2,4% 5/203	3,9% 32/807
Linguistic diversity	2,3% 14/604	1,9% 4/203	2,2% 18/807
Religious diversity	1,3% 8/604	0,9% 2/203	1,2% 10/807
Rights of the child	12,5% 76/604	6,4% 13/203	11% 89/807
Inclusion of people with disabilities and other people.	6,1% 37/604	2,4% 5/203	5,2% 42/807
Total	29,1% 176/604	18,2% 37/203	26,3% 213/807

As seen from Table 4, most of the detected information is presented in the SBs (29.1%) as compared to the WBs (18.2%) across all the grades.

RQ2: What is the dispersion of the detected information per function of the text and grade/across the grades?

Considering the dispersion of the detected information per function of text and grade, Table 5 presents the dispersion of the detected information per text function in both SB and WB across all the grades.

As shown in Table 5, the highest frequency of information appears in *questions/activities* in the 1G (12.7%), in the 3G (20.7%) and in the 4G (10.3%), whereas in the 2G it appears in the *running text* (7%). It is noteworthy that in the 1G and 4G there is no information at all in the *vocabulary/glossary*.

Finally, considering the dispersion of the detected information per function of text across the grades, Table 6 presents the dispersion of the detected information of reference per function of the text and per type of book across all grades.

Table 5: Dispersion of detected information by function of text and grade (G) (percentage/frequency per total pages (tp) of study book (SB) and workbook (WB))

Axes	1G SB & WB (204)	2G SB & WB (198)	3G SB & WB (202)	4G SB & WB (203)
Title	8/204 3,9%	4/198 2%	4/202 1,9%	6/203 2,9%
Text	4/204 1,9%	14/198 7%	25/202 12,3%	14/203 6,8%

Caption	8/204 3,9%	3/198 1,5%	7/202 3,4%	15/203 7,3%
Glossary	-	2/198 1%	6/202 2,9%	-
Questions/ activities	26/204 12,7%	3/198 1,5%	42/202 20,7%	21/203 10,3%

Table 6: Dispersion of detected information per function of text across the grades (G)
 (percentage/frequency per total pages (tp) of study book (SB) and workbook (WB))

Axes	1G-4G SB (604 tp)	1G-4G WB (203tp)
Title	17/604 2,8%	5/203 2,4%
Text	52/604 8,6%	5/203 2,4%
Caption	32/604 5,2%	1/203 0,4%
Glossary	8/604 1,3%	-
Questions/ activities	67/604 11%	25/203 12,3%

As it is shown in Table 6, in the SBs and WBs across all grades, it appears that the highest frequency of information is found in the *questions/activities* in both the SBs (11%) and the WBs (4.1%).

Overall, the findings indicate that the representation of equality is not only limited but also structurally fragmented across grades, textbook types, and textual functions. The concentration of relevant content in specific grades and predominantly within activities rather than core text suggests a lack of systematic curriculum design. This uneven distribution raises concerns about whether students are provided with coherent and cumulative opportunities to develop an understanding of equality as a core component of sustainable development.

5. Discussion

In this work, the authors focused on the concept of equality and performed a quantitative content analysis of the textual part of the student study material for the course SE that is offered in the first four grades in the Greek primary school up today.

Concerning the RQ1 and particularly the dispersion of the detected information per axis and book, it is shown (Table 2) that concerning the axes about diversities, apart from the *ethnic diversity*, there is lack of relevant information in all the WBs of the first three grades, revealing the fact that the students only in the 4G work out these concepts. Moreover, this lack of information in the WBs is also detected in the axis *inclusion of people with disabilities* which is worked out only in the 3G. Finally, the higher presence of the

information of interest is detected in the *axis rights of the child*, which is supported by both books, yet only in the first three grades. From the above it is evident that there is a focus mainly on the *axis rights of the child* and less the *inclusion of people with disabilities*, in the first three grades and then in the 4th grade there is a complete lack of them, perhaps upon their elaboration in the 1G-3G. In the 4G there is a transition of the detected information to the axes related to *diversity (ethnic, cultural, linguistic and religious)*. Moreover, concerning the dispersion of the detected information per axis and grade, the findings in the last row of Table 3 lead us to the conclusion that the largest percentage of all axes in total is located in the 3G (41.5%), followed by the 4G with almost half the percentage, then by the 1G and finally the 2G. The large difference between the occurrence rates from 3G to 4G grade raises concerns, if we consider that 4G students have the appropriate mental background to encounter issues of equality due to age and maturity. Table 3 also makes explicit, the clear lack of information in specific axes across the grades, reaching six cases of both SB and WB with missing information, thus leaving silenced axes in the relevant grades. In the cases of *linguistic diversity* and *religious diversity* with missing information in 1G-2G and 1G respectively, it might be considered as strategy for these issues to be introduced in the next grades. Yet, in the case of *cultural diversity, rights of the child* and *inclusion of people with disabilities* it seems that there is a gap in the elaboration of these issues in specific grades across the first four grades of the primary school. Finally, the dispersion of the detected information per axis and across grades is reflected in Table 4. I can be noticed that that the highest frequency is found in SB with a value of 29.1%. This is to be expected if we consider that WBs accompany and complement the SBs and are extensions of them. They contain group or individual activities completed inside and outside the classroom, which act as adjuncts.

Concerning the RQ2, and particularly the dispersion of the detected information per function of text per grades, Tab 5 reveals that in the 1G, 3G and 4G the highest frequency of information appears in *questions/activities* and only in the 2D in the *running text*. This situation raises some issues concerning the adequacy of the provided information towards providing answers to the questions and activities that are posed. Moreover, this endeavour is not supported by *glossary*, which contributes poor information in 2G and 3G, whereas in 1G and 4G the relevant function is missing. Moreover, the dispersion of the detected information per function of text across grades (RQ5), that is presented in Tab 6, makes explicit again the dominance of the *questions/activities* as places to provide most of the sought information across all the grades in both SBs and WBs.

Based on the above, it seems that a remarkable quantitative differentiation is observed in the provision of information based on the selected axes concerning the concept of equality in the student textbooks that are currently used in the SE course in primary school in Greece. Moreover, the existing information is scattered throughout the grades, and a serious amount of information is missing.

Although these findings concern the specific textbooks, they are consistent with relevant broader research findings concerning specific axes of the principle of equality.

The content analysis of Chinese primary school textbooks (Liu, et al., 2022), although it follows qualitative changes in the representations of ethnic minorities for a period, concludes that representation of this axis is still mostly lacking. From the axes of diversity and inclusion of other people, the review of Niehaus (2018) focuses, among other, on the representation of religious and cultural minorities and the topics of racism and people of colour in textbooks. The findings in international perspective reveal that societal diversity is still presented as problematic and *“many authors observe that certain groups affected by discrimination (minorities, people of colour, people with disabilities) are underrepresented in curricula and textbooks or do not appear at all”* (p.337). The small percentages of appearance or even the complete silence of issues of equality and acceptance of ethnic, cultural, linguistic and religious diversity in the textbooks are remarkable and should raise concerns amid the increasing year by year number of refugee students of immigrant origin. From the childrens’ rights axis, Akcan and Bakir (2023) in their qualitative content analysis of life studies textbooks in the Turkish primary school from the United Nations Convention on the Rights of the Child perspective, concluded although childrens’ rights are expressed in the textbooks, they do not sufficiently address the children’s rights and the referenced information is not balanced as it is very scattered. Moreover, research work in international contexts, even on the more worked out axis of the gender equality, shows that this issue is not presented to a satisfactory degree in school textbooks (Aydemir & Erdamar, 2022). Specifically, Katopodi (2019) was led to the conclusion that many references are made indirectly, and school textbooks alone are not sufficient. Subsequently, the results of Ahmad and Shah (2019) and Kamaretsou and Kitsou (2019) were discouraging in identifying sufficient gender equality issues. In fact, they noticed that there was a lot of bias in the books, a finding that agrees with the results of content analysis even of English Language Teaching materials (Shallaita, Nawawi & Amin, 2021) and images representing female figures in pre-school textbooks (Cobano-Delgado & Llorent-Bedmar (2019). Such examples of research work indicate that there seems an international trend that verifies the need to address the principle of equality in the school textbooks in a more coherent way.

Through the interpretation and presentation of knowledge that is displayed or hidden, textbooks become a means of projecting the norms, values and models of social behaviour through the representations they contain. Creating a textbook is equivalent to choosing the values, norms and representations that underpin the hopes of maintaining social cohesion and a harmonious relationship between people. Already at the beginning of the twentieth century, international bodies argued that textbooks have an important role in peace and mutual understanding between people, which are key goals of UNESCO since its founding in 1946 (Hahl et al., 2015). Textbooks play a key role in all societies and the need to ensure equality through them is deemed imperative. The concept of universal values of equality may be promoted by international bodies with documents ratified by many countries but ensuring them does not only mean monitoring bias and discrimination, which are violations of human rights, but also explicitly promoting them through school curricula and textbooks ensuring that all representations

promote equality (Brugeilles & Crome, 2009). Manuals and training materials must incorporate a commitment to eliminate all forms of bias, intolerance and stereotypes that threaten to undermine human rights and encourage negative and violent behaviour. Equality-based values thus become a central vehicle for providing quality education, which in turn seeks to fulfil the promise for all members of the human family to live in dignity and peace (Brugeilles & Crome, 2009).

From a policy perspective, these findings highlight the need for a more coherent integration of equality principles in curriculum design and textbook development. Educational authorities should ensure that equality-related concepts are not treated as fragmented or supplementary content but are systematically embedded across grades and subjects. This includes establishing clear progression pathways, ensuring balanced representation of all equality dimensions, and aligning textbook content with international frameworks such as the Sustainable Development Goals and the European policy agenda on inclusion and diversity.

It is therefore necessary to immediately reform the school textbooks upon reformed curricula so that they are enriched with concepts of diversity, equality and acceptance, basic principles of sustainable development, as clearly supported by UNESCO (2016). Zamojska (2017) states as a problem among other, the non-alignment of the content of curriculum and textbooks with the assumptions of the equality discourse. In particular the textbooks in courses like the SE are expected to promote the diffusion of sustainability in the first four classes of the primary school in the Greek aiming both at the acquisition of knowledge and at the development of skills, attitudes and values, which allow students to observe, interpret, describe and predict the functioning and also the interactions of the natural-anthropogenic environment, so as the environment is studied in a wider context and considered along with the social and cultural components. This holistic examination of the environment and the realization that social, economic and environmental issues are inextricably linked, requires a coherent way of supporting the students across their grades. However, the presented case on current Greek textbooks on one hand verifies that the current textbooks contribute fall into the big picture of inefficient presence of the equality principle in school textbooks. On the other hand, it raises awareness on the principle of reference towards the forthcoming writing of new textbooks. Towards this endeavour, textbook authors and curriculum designers should consider specific design principles to enhance the integration of equality, such as: (a) embedding equality concepts within core explanatory text rather than limiting them to activities, (b) ensuring balanced representation across all dimensions of diversity, and (c) promoting continuity and progression of these concepts across grade levels. Such design considerations can support a more meaningful engagement with equality as both a value and a competency.

As observed in the present case, the teacher's textbooks mirror the structure of the student textbooks, offering, for each section and chapter, guidance on teaching strategies, prompts that encourage students to express their thoughts and experiences, and references to supplementary resources (e.g., UNICEF, ActionAid, and Doctors Without

Borders). Within this framework, the role of the teacher becomes particularly important, as textbooks significantly shape teachers' interpretation and enactment of the curriculum (Vojříř & Rusek, 2021).

In contexts where curriculum materials and textbooks provide limited or uneven coverage of key concepts such as equality, teachers are required to take on a more active role in mediating and enriching the curriculum. This involves constructing a coherent pedagogical approach that builds upon the available material while addressing its gaps and inconsistencies. Such an approach presupposes that teachers critically engage with the principle of equality, reflect on potential constraints (e.g., institutional structures, personal beliefs), and intentionally incorporate inclusive practices into their teaching (e.g., by division of power with the students, appropriate discourse). In this way, the teacher becomes a central agent in bridging the gap between the intended curriculum and the enacted classroom experience.

Even more, as the subject of such effort is a principle, an open question arises; even if this principle is adequately presented in the textbooks can it be transferred from there to actual attitudes and behaviour at schools (Zamojska, 2017)? There seems that the road towards Education for Sustainable Development concerning, among other, the social dimension, is an ongoing effort that needs as a basis curriculum and the relevant textbooks reformation and the teacher support towards this endeavour. The presented work contributes to the realization of these needs.

6. Recommendations

To ensure the effective integration of equality principles in Greek primary education, it is essential to adopt a holistic theoretical framework that aligns national curricula with international mandates. Specifically, textbook development should be explicitly grounded in the United Nations Sustainable Development Goals (Agenda 2030) and the European Union Charter of Fundamental Rights

Theoretically, equality must be treated as a fundamental pillar of social sustainability, intertwined with ecological and economic concerns rather than as an isolated topic. This requires a shift from "single-axis" perspectives, which often focus exclusively on gender, toward multidimensional frameworks that encompass ethnic, cultural, linguistic, and religious diversity, children's rights, and the inclusion of people with disabilities

From a practical standpoint, the sources indicate an urgent need for systematic curriculum and textbook reform to address current gaps where equality-related content is often fragmented or limited to roughly 26% of textbook pages. Textbook authors should follow specific design principles to enhance learning, such as embedding equality concepts directly within core explanatory text rather than relegating them to supplementary activities or introductory questions. Furthermore, there must be a focus on continuity and progression across all grade levels to ensure that certain dimensions of equality do not become "silenced" as students move through the school system.

Given that current materials may provide uneven coverage, teachers must be supported as active agents who critically mediate and enrich the curriculum using inclusive pedagogical practices to bridge the gap between intended and enacted learning. Regarding further research, the presented work followed a quantitative content analysis approach towards the detection of the information of interest and its dispersion. A further qualitative hermeneutical approach that explores in-depth and implicit meanings could reveal the way the detected information is presented in the above books.

It is also vital to investigate the behavioural impact of educational materials to determine if the presence of equality principles is translated into measurable changes in student attitudes and social behaviours in the school environment

Finally, more inquiry is needed into systemic and teacher biases, as well as the reasons why specific axes, such as religious and linguistic diversity, remain marginal in early primary education materials.

7. Conclusions

This study is situated within the social dimension of Education for Sustainable Development, with a particular focus on the principle of equality. Through a quantitative content analysis of Greek primary school textbooks and workbooks used in the “Study of the Environment” course, it contributes to a broader effort to highlight the need for richer, more continuous, and coherent integration of equality-related content across grade levels. However, advancing this endeavour requires consideration of additional elements within the educational framework in which these textbooks are embedded, including curricula, the role of the teacher, the school system, and potential biases in the presentation of content. The systematic and coherent promotion of the principle of equality through textbooks does not merely constitute a pedagogical concern but rather represents a fundamental prerequisite towards Education for Sustainable Development.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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