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Geography Textbooks: Authors' Priorities, Problems, and Innovation Proposals *

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Abstract. This study investigates the perspectives of Spanish and Italian authors of geography textbooks for secondary schools. The aim is to fill the gap in information regarding the textbooks' design and writing processes and to gather suggestions for their improvement. Through a questionnaire, based on the one applied by Lee and Catling in 2017 to 7 English authors, we gather the aspects that 11 authors from Spain and Italy (7 and 4 respectively) take into consideration in the design of textbooks, the priorities they set, the issues they face and the innovations they hope. Their priorities are to avoid prejudices and stereotypes and to promote mastery of key geographical concepts. In the selection of case studies, they value relevance and newness. Among the difficulties there are the process of selecting and adapting content to formats and targets. As proposals for improvement, the use of digital tools and the introduction of methodological changes are suggested, towards a competency-based approach, which promotes observation, research, and critical thinking through the proposition of geographical problems. Authors agree on the need to provide current and useful content to understand the world. Although there are similarities with the English study, differences also emerge, possibly related to advancements in technologies and in geography education.

Keywords: textbooks; geography; publisher; innovation; education.

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1. Introduction

Textbooks are publishing products linked to the educational system. They have a broad market, representing 27% and 23% of total Spanish and Italian publishing turnover, respectively (FGEE, 2023; AIE, 2024), an audience of teachers and students who use them as their main teaching and learning tools: in a recent study, only 10.4% of geography teachers in Spain reported not using them (González, Rivero et al., 2024).

Textbooks, despite numerous criticisms regarding the standardization of their structures (Raja and Miralles 2014; Pentucci, 2018), the lack of competency-based activities (González, Rivero et al., 2024; Vezzani, 2023), and their content, which can convey stereotypes and dominant worldviews (Squarcina, 2007), have also been praised as instruments for operationalizing the curriculum in reform contexts (Crato, 2024). In fact, textbooks make it possible to reach every school and every student, regardless of their location or socioeconomic status (López, 2021), and provide reassurance to teachers to face educational changes (Prats, 2011), since they offer new routes for guiding teaching (Malatesta and Squarcina, 2011). For researchers, therefore, textbooks are privileged documentary sources, both for approaching what happens in the classroom and for critically evaluating the shortcomings or the improvements of the educational system. Lee and Catling (2016), however, point out the lack of research on the design and writing process of geography textbooks. According to these authors, this lack is partly due to the predominance of critical perspectives on textbooks as pedagogical tools and partly to the perception of textbook writing as an essentially atheoretical activity rather than a genuinely creative one: authors, in fact, should possess specific disciplinary and pedagogical knowledge useful for translating the curriculum's theoretical guidelines into practice, which in textbook design serve as both a reference and a link (Lee and Catling, 2016).

The bibliometric analysis of works published in Spain between 1980 and 2019 on geography textbooks, conducted by Morote (2020), demonstrates how these teaching resources have become increasingly relevant documentary sources for researchers. Even so, the same author indicates that this line of research is not as well established or internationalized as that relating to history textbooks, and points to the scarcity of studies focusing on climate change, ICT resources, and innovation (Morote, 2020). The results of the systematic literature review on geography textbooks conducted by González, Bel, Colomer, and Rivero in 2023 confirm an increase in studies on the use of geography textbooks, although these studies are limited to the paper format, the regional geographic scale, and the secondary or upper secondary school level (González, Bel et al., 2023). In Italy, studies on textbooks also prioritize a historical view of content and publication processes over authorship (Bandini, 2012; Pentucci, 2018; Giorda, 2020). Therefore, no recent studies in the Spanish and Italian literature have been found that take authors' perspectives into account or analyze the design and writing process of geography textbooks, although, according to Lee and Catling, such studies could be useful for three reasons: to reveal

authors' intentions, strategies, and writing techniques; to provide examples of content design in education; and to enable teachers and students, by understanding authors' intentions, to derive maximum benefit from textbooks (Lee and Catling, 2017).

The selection of Spain and Italy, which can be considered a case study, facilitated by the authors' research logistics, from a broader Euro-Mediterranean context, responds to the similarities found between both countries, which are summarized here in four points:

1. The curriculum of both countries have been reformed following European Parliament Recommendation 2006/962/EC: in Spain, with the LOE of 2006, and in Italy, with the Indicazioni Nazionali of 2007, although both laws have undergone subsequent reforms. Both curricula are currently organized around competencies and basic knowledge, which, for the subject of geography in secondary education, exhibit significant similarities that are reflected in the textbook indexes. Both curricula are currently organized by skills and basic knowledge, which for the subject of geography in secondary education exhibit significant similarities, as reflected in the textbook indexes.

2. The sales systems are similar: in both countries there are publishers' associations and distributors that provide sample copies to schools so that, in a free market, teachers can choose whether to use textbooks and, if so, which ones (Eurydice, 2012). Although more widespread in Spain, depending on the autonomous communities (ANELE, 2025), Italy also has loan systems funded by public administrations.

3. In both countries, secondary school geography teachers may hold degrees in history or art history and, in Italy, also in Italian literature.

4. The scientific literature in both countries, which in past decades adopted a critical stance toward textbooks, criticized for failing to take into account the cultural and social differences of each class group and for not teaching young people to read the living book of social and political reality (Area-Moreira, 1991; Lodi, 1977), has gradually driven changes in them, including activities for developing disciplinary and key competencies and various digital materials (ANELE, 2024; AGCM, 2025).

The curricular differences and the distinctive features of the publishing systems in Spain and Italy are not so significant as to prevent the joint processing of data and their comparison with those from the English context, since the English curriculum is also organized into basic knowledge and skills (Department for Education, 2014), and textbooks are chosen by schools' teachers and produced by private publishers (Eurydice, 2012). It is also worth noting the current trend across Europe to increase the use of new technologies and GIS, mentioned in the curriculum of all three countries, to promote fieldwork, and to include citizenship and sustainability education in textbooks (García-González, Palencia, and Ondoño, 2021; Boccacci,

2023; Meissl, Kowasch, and Buseth, 2025). to encourage fieldwork and to include citizenship and sustainability training in textbooks (García-González, Palencia, & Ondoño, 2021; Boccacci, 2023; Meissl, Kowasch, and Buseth, 2025). This trend could also be detected in some countries outside Europe, although heterogeneity would complicate the comparative study (see, for example, Lee et al., 2020).

Therefore, the present study was limited to the Euro-Mediterranean context, focusing on authors of secondary school textbooks from these two easily accessible countries, and the results obtained from each were not differentiated, being very similar (beyond specific points that will be made explicit), in order to compare them with those of the English study, taking into account the evolution over time. Thus, having defined the current Euro-Mediterranean context (with its specific Spanish and Italian particularities), and given the absence of research analogous to the English study in the Spanish and Italian scientific literature, it was deemed interesting to submit part of Lee and Catling's (2017) English questionnaire, translated, with a new qualitative section, to authors from Spain and Italy. So, in addition to information on relevant aspects when writing a geography textbook, open-ended information on difficulties, motivations, and expected innovations was included.

Indeed, the main objective of this study is precisely to investigate the processes of designing and writing textbooks, highlighting the relevant, problematic, and improvable aspects of these processes in order to contribute to the improvement of these key tools for geography education. The secondary objectives of the study include: comparing the questionnaire results with those of the English study, across different contexts and over time; comparing authors' priorities with the recommendations of geography education specialists and current regulations; understanding the consequences of the difficulties they face; and evaluating the applicability of the innovations they suggest.

2. Materials and methods

2.1. Information collection instrument and study sample

In order to address the identified lack of information, a portion of the English questionnaire, whose validity has been methodologically established by Lee and Catling (2017), was administered to five female and six male authors, seven from Spain and four from Italy, after translating it into Spanish and Italian with validation by two Spanish and Italian-speaking geography education professors. The authors who make up the study sample share a general profile characterized by a university education, a profession in publishing or teaching geography at university and/or secondary school level, and various published textbooks during several years. In the Spanish case, this sample, which is largely homogenized in the context of the Community of Madrid, ensures the representation of three dominant publishers, ranked among the five with the largest market share (Vicens Vives, Santillana,

Anaya, SM, and Oxford) according to González, Rivero, and García (2024). In the Italian case, the sample ensures representation of two of the three major publishing groups that, according to the AGCM (2024, p. 49), dominate the market (Zanichelli, Mondadori, and Sanoma). It is not possible to specify individual profiles, even anonymized, due to confidentiality commitments agreed upon when participants consented to take part in this study.

To the items in Lee and Catling's questionnaire, which required ordinal responses on important aspects, another ordinal-response question ranking criteria was added, along with three additional open-ended questions designed to elicit the motivations of authors, the difficulties they encounter in the writing process, and the innovations they would introduce into geography textbooks. Indeed, the present study is part of a broader, pragmatically oriented investigation that aims to identify precisely the innovations useful for improving geography textbooks.

The data format ensures the replicability of the English study and meets criteria for optimizing data collection in the shortest possible time for respondents, with minimal compromise of confidentiality. Regarding the sample's limited representativeness for quantitative research, it is not considered a relevant limitation in the context of this qualitative study, which focuses on the narrative discourse of the data obtained, including quantitative data, as a basis for interpretation, and which requires personalized attention, at the expense of the number of individuals surveyed, which, in any case, is higher than in the English study. Furthermore, the population from which the sample is drawn is already small and difficult to cover.

The first part of the questionnaire, derived from the English study, aims to verify which aspects authors consider more or less important in the design of geography textbooks. The aspects for which an importance rating was requested on a Likert scale (from 1 = least important to 5 = most important) are the same 25 from the English study, which Lee and Catling had organized into categories, identifying them as content centered or focused on cognitive development, learning process, operational features or motivation. The second part of the questionnaire concerns the criteria for selecting the case studies. The instruction in this case was to rank the seven criteria extrapolated by Lee and Catling from the open-ended responses to the English questionnaire according to the importance that Spanish and Italian authors assigned to them: from most to least important.

The third part of the questionnaire, which was completed anonymously by the eleven participants, consists of three open-ended questions designed to identify: 1) the main motivation of authors, 2) the difficulties they encounter, and 3) the changes and innovations they hope for. These questions were intended to deepen understanding of the phenomenon, gathering motivational aspects that would not otherwise have emerged and the personal considerations of those working in the school publishing sector, which is unique in that it aspires to produce epistemologically rigorous books that comply with ministerial regulations and are appreciated by their audience, striking a balance between innovative spirit and the natural conservatism of teachers (Enriques, 2008).

2.2. Data analysis

The data for this publication were analyzed using descriptive summary statistics, structuring the information into three main sections.

First, the aspects that authors consider most important are presented, organized according to the average, from highest to lowest. This allows for the establishment of a hierarchy, but the mode (most frequent value) has also been linked to the average to ensure a view more aligned with ordinal scales of values. For some aspects, it was possible to establish clear priority criteria; for others, it was not, because they obtained the same score. Therefore, their position on the list is relative: all aspects from 18th to 22nd place, for example, have an average of 4.00. The position on the list of the most and least relevant aspects for English authors is also included to facilitate comparative analysis.

Secondly, the importance ratings assigned by the participants to the case study selection criteria were averaged, and the criteria were then listed in order of importance. In this case, it was deemed appropriate to also specify how many authors had indicated a criterion as their top priority compared to all others, because otherwise this information would have been lost. The average values have also been linked here to the mode, in order to relate the established hierarchy to the most frequent values in each series.

Thirdly, the responses to the open-ended questions, which were organized into categories, are analyzed qualitatively.

In the discussion of the results, the responses to the open-ended questions will also be used as references to contextualize and deepen the findings from the first two sections of the questionnaire.

As a final methodological consideration, it is clarified that the data are not broken down by country because the responses were very similar to each other; so that reference will only be made to this differentiation in specific cases and in the qualitative information that requires it. This circumstance validates the framing of the Euro-Mediterranean context formed by Spain and Italy (see Introduction).

3. Results

3.1. Most important aspects in the design of geography textbooks

From the analysis of the responses regarding the aspects to be taken into account in the geography textbook design process (Table 1), it is clear that authors place great importance on avoiding prejudice and stereotypes in their writing (1st position, with an average of 4.91; 4th–6th in the English study), followed by the desire to develop students' mastery of key geographical concepts (2nd–3rd position, with an average of 4.82; 1st in the English study) and their ability in enquiry process, like seek information and find answers to geographical problems (2nd–3rd position, with an

average of 4.82; 13th–17th in the English study). Authors also consider it important to ensure that content is current and accurate (4th–5th position, average 4.73; 2nd–3rd position in the English study) and to use a grade-appropriate vocabulary (6th position, average 4.64; 7th–10th position in the English study).

Table 1. Aspects that authors consider more or less important in the design of geography textbooks, ordered by average and divided into categories: CC (content-centered); CD (cognitive development); MO (emphasis on motivation); LP (learning processes); OF (operational features). Source of the data from England: Lee and Catling (2017, Table 3).

How important has this aspect been in the design of the textbook?	Average	Mode	Category	Position in the English study
(1) Avoids bias and stereotypes.	4,91	5	CC	4th-6th
(2) Mastery of key concepts.	4,82	5	CC	1st
(3) Incorporates an enquiry process.	4,82	5	LP	13th-17th
(4) Current and accurately represented content.	4,73	5	CC	2nd-3rd
(5) Incorporating proper geographical skills (e.g. mapping, fieldwork)	4,73	5	CC	2nd-3rd
(6) Grade-appropriate vocabulary.	4,64	5	CD	7th-10th
(7) Multiple perspectives on (social) issues.	4,55	5	LP	21th-22th
(8) Transfer learning into different situations.	4,36	5	LP	20th
(9) Provides in-depth case studies (used across the book and teaching time).	4,36	5	LP	4th-6th
(10) Exercises and application opportunities.	4,36	5	CC	13th-17th
(11) Coherent and logical sequence of activities.	4,36	5	CD	4th-6th
(12) Encouraging/engaging in hands-on experience(s)	4,27	5	MO/LP	13th-17th
(13) Practicability (e.g. ready-made, completion in class hours)	4,27	5	OF	12th
(14) Interesting and engaging writing styles.	4,18	5	MO	7th-10th
(15) Authentic tasks (with undefined outcomes) with multiple routes to solve or take.	4,18	5	LP	13th-17th
(16) Incorporating other subject areas.	4,09	4	OF	23th-24th
(17) Requires learning beyond the classroom (i.e. possible opportunity to work for/in the real world, e.g. requires fieldwork).	4,09	5	LP	13th-17th
(18) Incorporating geospatial technology (e.g. GIS, Google Earth).	4,00	3	LP	23th-24th
(19) Incorporating locational knowledge.	4,00	5	CC	7th-10th
(20) Activating/drawing on students' prior knowledge and experience.	4,00	4	LP	21th-22th

(21) Providing for a variety of abilities (e.g. provides a range of easy to difficult questions or tasks).	4,00	4	CD	18th-19th
(22) Opportunities to work with others (not just alone).	4,00	4	LP	13th-17th
(23) Producing observable and measurable outcomes.	3,91	5	CC/OF	18th-19th
(24) Fun and interesting topics.	3,72	4	MO	7 th -10th
(25) Facilitates self-assessment.	3,27	3	OF/LP	25th

On the other hand, it can be seen that some aspects related to learning processes and operational features have relatively low average scores. Facilitates self-assessment, for example, ranks last in both the present study and the English one. Also, less important are producing observable and measurable outcomes (23rd position, with an average of 3.91; 21st–22nd in the English study), activating students' prior knowledge and experience (18th–22nd position, with an average of 4.00; 21st in the English study), and providing for a variety of abilities (18th–22nd position, with an average of 4.00; 18th–19th in the English study).

3.2. The selection criteria for the case studies

In reviewing the results regarding the criteria used to select the case studies (Table 2), the criterion of relevance emerges as the top priority for three authors, followed by newness and geographic balance, which are considered important across the board. The common purpose seems to be to describe important territories with current problems, without forgetting to offer various world views. The other criteria, on the other hand, are more or less important to the participants: personal experience, for example, or the availability of information, prioritized by two of them, is of little relevance to others.

   The criterion of coherence with the national curriculum (mentioned five times in the open-ended responses of the English authors) is difficult to interpret: three participants consider it the top priority above all others, while four place it last, which, in addition to indicating the variety of responses given to this ranking question, could also suggest a misunderstanding of the association between the concepts of curriculum and case studies.

Table 2. Criteria for selecting case studies, ordered by relative importance: from 1 (most important) to 7 (least important).

Criteria for selecting case studies	Average	Mode	Authors who consider this criterion to be a priority
1. Relevance	2,81	4	3
2. Newness	3,36	2	-
3. Geographical balance	3,54	4	-
4. Engagement	4	5	2

5. Coherence with the national curriculum	4,36	7	3
6. Existing personal knowledge	4,9	6	1
7. Availability of information	5	7	2

3.3. Other issues, open-ended questions: priority objectives, difficulties, and innovations

Among the priority objectives identified by the authors in the first open-ended response (Table 3), two stand out: to provide current, clear, and comprehensible content that is socially relevant and helps critically understand the interdependencies between the physical environment and human activities; and to offer teaching and learning tools useful for both teachers and students.

Table 3. Summary of the open-ended responses to the question: "What is your primary objective or your main motivation as an author of geography textbooks?"

Categories	Quotes
Content for understanding the world	• Propose content that has relevance beyond the classroom (sustainability, inequalities...) • Get students interested in geography, which is useful for understanding the world. • Explain the interdependence between the environment and human activities. • Propose original ideas and address the most important topics in geography.
Tools for teaching and learning	• Provide a useful tool for my colleagues. • Provide teachers with tasks to help students acquire geographic and spatial thinking skills. • It should be useful for learning.
Critical thinking	• Provide tools for exploring the world with critical thinking, teaching how to interpret phenomena from different point of view. • Develop critical thinking about the relationship between humans and space.
Clarity	• Make the content clear and understandable. • Be clear; use simple language.
Neutrality	• Be neutral with respect to political orientations.
Engagement	• Develop the content indicated by the editor.

The main difficulties encountered in the design and writing process of geography textbooks concern content selection, which must be done in agreement with the editorial team, taking into account both space limitations and the limitations arising from the use of textbooks by teachers (who have few hours) and students, who need precise but understandable vocabulary, more attractive graphic designs and practical activities, which are often sacrificed to the detriment of theory (Table 4). The

geographic and chronological variety of Spanish legislation is noted as particularly problematic, because it forces authors and publishers to make continuous adjustments and changes to the configuration of textbooks, which, as ANELE (Spanish National Association of Publishers of Books and Teaching Materials) points out, also prevents homogeneity in the progress of the Spanish education system (ANELE, 2025).

Table 4. Summary of the answers to the question: "What are the difficulties involved in the process of designing and writing geography textbooks?"

Categories	Quotes
Selection of content	• Reach an agreement with the editorial team on the content. • Choose the hierarchy of topics and identify those that are appropriate for students. • Content selection: what to include and what to leave out. • The hardest part is the list of contents: deciding which topics to cover.
Format y focus	• Sometimes, there's too much theory instead of practical applications. • An established graphic design, almost always unattractive. • Summarize the geographic content in a few pages. • Adapt the content to the reduced number of class hours.
Laws	• The geographical and chronological variety of Spanish legislation. • Select topics that will generate the greatest possible interest among students. • The need to comply with national guidelines, which require covering the maximum number of topics, sometimes superficially.
Update	• The constant updating of content. • Sometimes it's difficult to choose and find up-to-date and consistent data.
Clarity	• Write clearly and comprehensibly, maintaining a non-banal style. • Use precise, not overly specialized vocabulary and easy-to-understand syntax.

To improve geography textbooks (Table 5), authors suggest using innovative digital tools, such as Geographic Information Systems (GIS), and hope for the introduction of changes both in terms of content, to understand current events and educate on sustainability, and in terms of methodology: there is a desire for truly skill-based teaching, which, through practical activities and geographical questions, encourages critical thinking, research and problem-solving skills, as well as dialogue with other disciplines.

Table 5. Summary of the responses to the question: "What thematic changes or innovations do you consider useful for improving geography textbooks?"

Categories	Quotes
Digital tools and GIS	• Ethical use of artificial intelligence and social media; introduce GIS. • Include the use of GIS in all chapters. • Incorporation of Geographic Information Technologies into geographic learning. • Integrate GIS. • Use innovative digital tools. • Greater interactivity. • Incorporation of external tools and sources.
Up to date content	• Educate for sustainability, introducing the concept of mitigation in the context of climate change. • Current content. • Select topics to generate the greatest possible interest among students. • Promote understanding of the consequences of ongoing changes. • Include current topics not covered in the curricula.
Critical thinking	• Awaken critical thinking through cartography, graphics, and data sources. • Ask geographic questions. • Geo-inquire. • Include investigative and reflective activities... • Analysis and proposal for problem solving.
Skills	• Textbooks still fail to adapt to the skill-based curriculum, placing greater emphasis on content than on skills. • Propose practical activities that are close to real-world situations. • Projects to develop geographical thinking, beyond conceptual learning. • Reduce overly broad topics based on rote learning.
Format	• More attractive designs. • Organization by topic: physical geography, human geography, examples of regional geography...

4. Discussion: priorities, problems, and proposals for improvement

4.1. The design remains content-centered (both objective and subjective)

The centrality of content in the design of geography textbooks, already highlighted in the English study, is confirmed by the responses of authors from Spain and Italy. Indeed, as shown in Table 1, three of the top four aspects that authors consider most

important when writing a textbook are content-focused: avoiding biases and stereotypes, developing key concepts, and ensuring current and accurately represented content. These three aspects were also prioritized in the 2020 international study by Lee et al. The centrality of content is further explored in the responses to the first and second open questions in this study, relating to motivations and difficulties: careful attention to content is necessary to enable students to "understand the world", to comprehend both "the interdependence between the environment and human activities" (Table 3) and "the consequences of ongoing changes" (Table 5). The content-based textbook design has been passed down by tradition (Pentucci, 2018), despite recent legislative reforms toward a competency-based curriculum, perhaps because no textbook can fully redeem the closed, transmission-oriented format inherent in any editorial product (Pigozzo & Martinelli, 2022).

On the other hand, the selection, prioritization, and updating of content are cited among the main difficulties in the textbook design and writing process, and it is also difficult to select content "that will generate the greatest possible interest among students" (Table 4). This concern, however, is not shared by all participants, as choosing fun and interesting topics for students is one of the aspects that authors in Spain and Italy generally consider relatively less important (Table 1, 24th position, with an average of 3.72; 7th–10th in the English study).

In contrast, key concepts, which have returned to the center of the geographical education debate with the formulation of powerful knowledge theory, are considered universally significant. In this regard, Maude (2017) distinguishes between powerful concepts, such as place, space, environment, and interconnection, and substantive concepts, such as city, explaining that the former provide students with precisely the valid tools to understand the world that the authors discuss in their open-ended responses to the first open question (Table 3). In geography textbooks, however, both powerful and substantive concepts are first made explicit and then used in presenting case studies and describing territories, which leads to two types of difficulties related to subjectivity and the vocabulary used. We will develop this below.

The authors' primary concern with avoiding biases and stereotypes in textbook writing (Table 1, first position, with an average of 4.91; fourth to sixth in the English study), also mentioned in one of the responses to the first open-ended question, where the objective of being "neutral with respect to political orientations" is cited (Table 3), is indicative of an awareness of the interpretive nature of the geographic descriptions provided, rather than of the key concepts themselves, whose objectivity, according to Maude (2017) in a socio-realist view of knowledge, would be grounded in the internal debate of the scientific community. However, in geographic descriptions, and especially in those intended to "generate the greatest possible interest among students" (Table 5), there is a certain degree of subjectivity, from which many anthropocentric (Boccacci, 2023), ethnocentric (Borghi and Lucenti, 2020), and gender-based (Martegani and Squarcina, 2011) stereotypes derive, often detected in critical readings of geography textbooks. When describing, authors express, more or less explicitly, widespread conceptions or personal opinions that

even teachers sometimes fail to recognize, while students belonging to discriminated categories easily identify them: for this reason, the consideration given to representations is a fundamental criterion for selecting textbooks (Shulman, 2024). Indicative of the high regard in which Italian and Spanish authors hold them is the aim of offering multiple and varied perspectives on social issues (Table 1, 7th position among the most relevant aspects, with an average of 4.5; 21st–22nd in the English study), which is both a personal objective and a goal for students, who, as one of the responses to the first open-ended question reads, should learn to "interpret phenomena from different points of view", with "critical thinking", to invert their worldview to open themselves to others (Table 3). Critical thinking, therefore, seems to be the answer to the problem of interpretive subjectivity, also because it is related to another of the aspects considered important in the development of textbooks: incorporate an enquiry process to develop students' ability to seek information and find answers to geographic problems (Table 1, 2nd–3rd position, average 4.82; 13th–17th position in the English study).

The use of appropriate vocabulary that is suitable for the target audience is the second aspect related to the difficulty of providing objective and, above all, accurate geographical descriptions. It is an important aspect for authors (Table 1, 6th position, with an average of 4.6; 7th–10th position in the English study), which is also mentioned in the responses to the second open-ended question, where the difficulty of "writing clearly and comprehensibly," of using "precise but not overly specialized vocabulary," and of employing syntax "easy-to-understand" are cited (Table 4). Lexical and syntactic simplification is problematic because it conflicts, although it should not, with the consistency of the information and is related to the inaccuracies often found in textbooks (Raja and Miralles, 2014); and the difficulties increase as the age of the users decreases (De Vecchis et al., 2020).

4.2. Call for competency-based learning methods

Authors also consider some aspects related to learning processes to be important, such as the one mentioned above: incorporates an enquiry process to develop students' ability to search for information and find answers to geographic problems. This aspect is highlighted in the responses to the third open-ended question regarding fostered innovations, where the intention to "ask geographic questions" and "include investigative and reflective activities" useful for awakening a "critical thinking through cartography, graphics, and data sources" is mentioned (Table 5). Critical thinking, which is required through debate on current social issues and spatial controversies (Lupatini, 2023), is an important topic in contemporary geography teaching and is considered necessary whenever geographical discourse goes beyond the supposed objectivity of describing a territory (Malatesta and Squarcina, 2011). Critical thinking is also mentioned in the specific competencies of the Spanish curriculum (LOMLOE, 2020) and in the learning objectives of the Italian curriculum currently being approved (MIUR, 2025), which specifically encourage its

development through the analysis of major contemporary environmental and social problems. Authors therefore demonstrate their support for the proposals for innovation arising from academic research and the aims that drove the reform of the curriculum. Thus, for example, they support the introduction of "practical activities that are close to real-world situations" and "projects to develop geographical thinking" (Table 5), and they consider the aspect of developing geographical skills to be fundamental in the textbook design and writing process (Table 1, 4th–5th position, with an average of 4.73; 2nd–3rd position in the English study).

At the same time, they demonstrate an awareness of the sector's own limitations when they lament the fact that textbooks offer "too much theory instead of practical applications" (Table 4) or, more explicitly, that "place greater emphasis on content than on skills" (Table 5), because, as can be read in the comments not included in the summaries, teachers demand that they stay that way and not change. Teachers, in fact, are the primary audience for textbooks, because they choose them and hold deep-seated convictions about what should or should not be taught and about the content that should or should not be included in textbooks (Pentucci, 2018). That is why textbooks are still organized in traditional structures, why teaching units follow one another in a precise order, and why exceptions to the classic methodological framework (theoretical explanation – activity completion – comprehension and expansion) are few (Raja and Miralles 2014), despite the competence-based approach of the Italian and Spanish curricula.

In fact, current curriculum only detail objectives, competencies and basic knowledge blocks, and do not expressly indicate the content, regions or states that should or should not be presented to students. Only the draft version of the Italian curriculum currently under approval explicitly mentions the United States, China, India, Russia, Brazil, and Argentina for their importance and their particular relationships with Italy (MIUR, 2025). However, if these were the case studies to be presented, it would represent a substantial reduction in the number of territorial descriptions usually offered in geography textbooks. Authors are, of course, free to select the case studies they wish to include in textbooks and do so on the basis of their relevance and topicality, as can be seen from the classification question (Table 2), although for three of them consistency with the curriculum remains the priority criterion. The curriculum, being thematically broad and binding in nature, requires "covering the maximum number of topics," as stated in the responses to the second open-ended question (Table 4).

Other binding elements in designing and writing textbooks are mentioned in the responses to the third and first open-ended questions: it is difficult to "adapt the content to the reduced number of class hours" (Table 4) and essential to "develop the content indicated by the editor" (Table 3). This compromise arises in the Spanish context, where publishers commission three or four authors to write the content the framework of a predefined publishing project; on the other hand, in Italy, where authors carry out the work of designing and writing individually or in pairs, with the support of the publisher, the difficulty of resolving all problems independently arises.

To conclude the discussion on content, the desire to "reduce overly broad topics based on rote learning" and to "develop geographical thinking beyond conceptual learning" (Table 5) demonstrates the alignment between the proposals for innovation or reform that come from research or legislation and the ideas circulating among authors in Spain and Italy, despite the fact that the purchasing system supports the preservation of traditional models.

4.3. Pending or ongoing research-based educational advances

Returning to the aspects that authors consider in textbook design, among those with low average scores is facilitating self-assessment (Table 1, 25th position, with an average of 3.27; 25th in the English study), an aspect that, by contrast, is cited as fundamental in a recent article by Shulman (2024), which summarizes many of the points shared by the academic community, since students' awareness of the objectives supports motivation.

Also providing for a variety of abilities (Table 1, 18th–22nd position, with an average 4.00; 18th–19th in the English study) appears to be underestimated, since textbooks should be designed to adapt to different students (Shulman, 2024) and facilitate their inclusion. This would also overcome one of the main criticisms related to their use and standardization, which Orsi (2017) considers implicit in both the editorial product itself and the school system, which encourages everyone to teach the same thing, in the same amount of time, and with the same tools. The authors seem to be aware of this, as can be seen in the Spanish teachers interviewed in a recent study, when they state that they appreciate precisely the wide and varied range of exercises and activities for students offered in textbooks (González, Rivero et al., 2024).

Another relatively underestimated and somewhat contradictory aspect is incorporating geospatial technology (Table 1, 18th–22nd position, with an average of 4.00; 23rd–24th in the English study). This is the only aspect that shows a notable difference (greater than 1.5) in the average scores for Spain (3) and Italy (4.57), where the issue is currently a hot topic due to the ongoing reform. The introduction of GIS in geography teaching, mentioned in current Spanish curriculum and the Italian one, currently under approval, is also considered important in academic circles as part of the process of redefining the geographical discipline itself (De Miguel, 2013), and is explicitly supported by many of the participants from both countries in their responses to the third open question (Table 5), which could indicate an ongoing integration, a commitment to future editions, which will be published in Italy in 2026, and even a need for training for authors and teachers (Martínez-Hernández, 2021). In this regard, the use of AI and Geo-AI, which has not yet been considered, will also need to be monitored.

In any case, the slow introduction of geotechnologies highlights the conservatism of teachers who use textbooks (Raja and Miralles, 2014), reinforced by the problems of specialized training in geography teaching in the Euro-Mediterranean context,

where teachers may have been formed in social science disciplines (in the case of Spain) or even in the humanities (in the case of Italy), which makes it difficult to approach the conceptual and procedural innovations of geography.

Finally, the role played by iconic languages used in textbooks does not emerge from the open-ended responses given by authors from Italy and Spain. Graphic design is only mentioned once, and is considered unattractive (Table 4). However, the fact that the design of textbooks supports learning is a fundamental criterion to consider when selecting them (Shulman, 2024), not least because the interpretation of maps, photographs, tables, and graphs is a specific skill in geography education. Probably, since the selection and production of these materials is carried out by the publisher, authors have not taken this aspect into account, which was also disregarded in the criteria of the English questionnaire that we wanted to replicate.

5. Conclusions

The analysis of the responses reveals the centrality of content in the design and writing process of geography textbooks, as already noted in the study by Lee and Catling (2017).

The selection of content and its continuous updating are difficult processes, but careful attention is necessary both to avoid biases and stereotypes and to enable students to acquire the geographic skills and key concepts needed to understand the world. In addition to these priorities, which emerge in both studies, there are those related to the care taken with vocabulary, which should be simple but appropriate and correct.

By contrast, two aspects that were undervalued by participants in the English study are important to authors from Spain and Italy: the concern to offer multiple perspectives on social and cultural issues, and the incorporation of enquiry process, that are useful for the development of critical thinking and cross-curricular skills, such as searching for information, comparing it, and interpreting it. In this case, as when advocating for the future incorporation of geotechnologies, authors from Spain and Italy demonstrate that they are receptive to indications arising from academic research, sometimes driven by important changes in school curriculum -since the study of the English case- in most of Europe and the world, such as a greater conceptual emphasis on education for sustainability or a procedural emphasis on geotechnologies. In this regard, conducting a critical analysis of the methodology applied, it has been highly useful to have information beyond that established in the Lee and Catling (2017) study, thanks to the expansion of the questionnaire and its qualitative enrichment.

The main difficulties identified by the participants relate to content selection and its adaptation to editorial formats, which involves reducing the complexity of the proposed topics, as well as to the target audience and legislation, which is often subject to change. In the open-ended responses, resistance to methodological change is mentioned, which is related to teachers' expectations.

Ultimately, the authors appear to be familiar with and share the common guideline of the current curriculum in Italy and Spain, as they propose changes consistent with them, suggest exploring socially relevant environmental issues in greater depth, and developing skills through geographical problems, projects, and practical activities that are close to reality.

Authorship contribution

Nicoletta Elisa Sala: conceptualization, data curation, formal analysis, investigation, methodology, visualization, writing – original draft. Carlos Martínez-Hernández: conceptualization, methodology, project administration, resources, supervision, writing – review & editing. Enrico Squarcina: resources, supervision, validation, writing – review & editing.

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