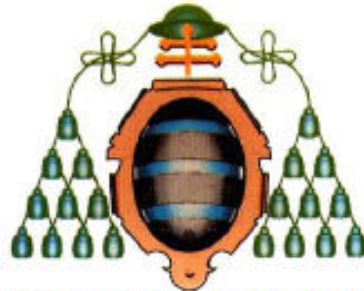




UNIVERSIDAD DE OVIEDO
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Universidad de Oviedo

Facultad de Formación del Profesorado y Educación

**Trabajo Fin del Máster en Enseñanza Integrada de la Lengua Inglesa y
Contenidos: Educación Infantil y Primaria**

Selecting a Science textbook for the CLIL classroom: a checklist proposal

Vanesa Cruces Rodríguez

Tutor: Marta Ramón García

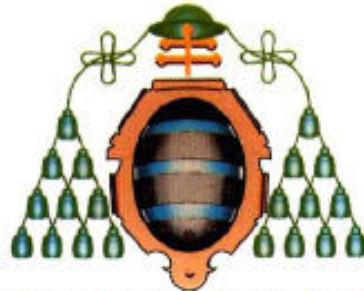
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INTRODUCTION AND JUSTIFICATION OF THE WORK

With the aim of making foreign language acquisition more efficient, CLIL programmes are progressively being incorporated to the Spanish educational system. As it is an approach with a short period of official implementation in Spain, teaching materials appropriate to CLIL's principles and covering the national curriculum requirements are not abundant. Publishing houses have already developed several proposals with the foreign language as the means of instruction which fulfil the requirements of the curriculum. However, this does not necessarily mean that those textbooks assist educators when implementing the CLIL approach, as they occasionally do not cover the whole national curriculum and lack language support.

There are two aspects within the complex educational scenario that justify this reflection on CLIL Science textbooks: the rise of schools interested in offering CLIL programmes in Spain and the unquestionable success of textbooks above other teaching materials. It is the combination of these two elements, which will be developed in chapter 1, that provides the backbone to this work.

The success of CLIL has been growing over the last ten years in all educational stages, from Primary Education through to adult education. CLIL, a term which stands for Content and Language Integrated Learning, was coined by David Marsh of the University of Jyväskylä, Finland (1994) to refer to "a situation where subjects are taught through a foreign language with dual-focused aims, namely the learning of content and the simultaneous learning of a foreign language"(Marsh 2002: 2). CLIL is becoming particularly successful in Spain. Along with other European countries, Spain is opting for educational programmes that promise to achieve more efficient language learning. Numerous European Commission guidelines, including the European goal for 2020, establish the necessity of students commanding at least two languages different from their mother tongue. (Miklós Györffi in European Parliament, 2014: n.p.).

As Spain is divided into autonomous communities with individual state-transferred powers over education, a complex scenario emerges for the implementation of CLIL programmes, as there are significant differences among the Spanish regions in the number of schools implementing a CLIL approach, the subjects that are taught through the foreign language and the human and economic resources invested in the programme. In addition, there is also a difference in chronology, as the first programmes were launched more than a

decade ago in some Spanish regions such as Madrid and Andalucía. However, it was not until 2000 that autonomous communities joined this trend extensively.

Due to its relatively short period of official implementation in Spain, it may be difficult for educators to find appropriate teaching resources fulfilling the specificities of CLIL methodology. Among all materials that are designed for learning purposes, the textbook can certainly be pointed out as one of the most popular ones. For this reason, publishing houses are working assiduously towards the development of CLIL textbook proposals. Thus, there are currently more than 40 titles devoted to CLIL Science teaching among ANELE's¹ publications.

Both national and international publishing houses are creating new proposals to address this emerging market, mainly in the form of textbooks and additional materials for the teaching of content subjects in a foreign language. However, as a new concept, CLIL textbook authors may find some difficulties in designing materials for such a new approach, which is frequently erroneously equated with bilingualism. Thus, if CLIL's core ideas are not well understood, publishing houses' proposals may turn into mere foreign language coursebooks, lacking many of the principles that define this teaching approach. This issue will be discussed in the course of chapter 1.

Selecting an appropriate textbook is an important teaching decision, as it may guarantee quality in the materials, reduce lesson preparation time significantly and, above all, enable professionals to apply a methodology suitable to their teaching conceptions and the specific programmes they are in charge of. Thus, the present work has as its main objective to provide educators with a tool to select suitable CLIL Science-specific textbooks. The reasons for this work to consider books belonging to the Science subject in particular are varied: on the one hand, this subject has traditionally been selected by most Spanish schools with bilingual programs for CLIL implementation. On the other hand, Science also seems to have a historical relationship with books with pedagogic purposes: from encyclopaedias through to lesson books.

This work's main objective is to suggest a method for the selection of Science textbooks based on CLIL guidelines. Essentially, it discusses the basic elements upon which this dual-focused methodology is built and translates them into textbook CLIL-friendly features.

This task will be carried out through the establishment of a qualitative checklist containing evaluative criteria concerning each of the four dimensions that constitute the CLIL

¹ ANELE stands for *Asociación Nacional de Editores de Libros y Material de Enseñanza*. It is an association of 33 national publishing houses, holding 90% of market invoicing of the textbook and teaching material.

framework –known as the 4 Cs- that support CLIL. Content, cognition, communication and culture will therefore be examined so as to detect the specific features that a textbook with a dual-focused aim needs to satisfy.

The distribution of chapters that articulate this work is evidence of the numerous elements that contributed to the checklist elaboration process. Chapter 1 reflects on the two elements of the educational context that justify this work, namely the success of CLIL in the Spanish Educational System and the issue of the extensive employment of textbooks in Primary Education. In relation to the first point, CLIL origins and core ideas will be considered, so as to reflect on this approach's success. The current popularity of textbooks, more specifically Science CLIL proposals, will be illustrated with some sales statistics data. In addition, this section will include a reflection on potential arguments to explain this teaching resource's widespread use. Chapter 2 lays the methodological foundations for the checklist and contains a literature review on textbook evaluation. Chapters 3-6 discuss the evaluative criteria for the checklist in relation to content, cognition, communication and culture. Taking CLIL foundations as a starting point, these chapters reflect on the suitability of those criteria for the teaching-learning process, suggest items for the checklist and illustrate them with examples extracted from real Science textbooks for Primary Education. The final checklist can be found in chapter 7. Finally, the conclusions drawn from the checklist elaboration process and future lines of research can be found in chapter 8.

CHAPTER 1

CLIL AND THE SPANISH EDUCATIONAL SYSTEM: THE RISE OF THE TEXTBOOK AS A TEACHING TOOL

This section examines the two contextual aspects which frame this work, namely the implementation of CLIL in Spanish schools and the textbook as a widespread teaching resource.

As a first step, this chapter outlines the basic principles of the CLIL teaching approach. Bearing in mind the difficulty of the task, this work will mainly focus on summarising those CLIL principles which are directly relevant to the checklist design. By no means can this chapter be conceived as a systematic and detailed study of CLIL foundations, as it is essentially oriented towards providing a starting point to determine the suitable features for a CLIL textbook. In addition, the chapter will also consider some aspects such as the possible reasons for Spanish schools to offer CLIL programmes, which seem to be highly valued by both the educational authorities and the teaching-learning community at large.

In the case of the textbook, this chapter will provide a retrospective view of its origins in education so as to understand why it is still being widely employed for instruction. In addition, some revealing invoicing statistics will help to quantify its success. The chapter will also reflect broadly on possible arguments for its generalized use in Primary Education, from the point of view of both teachers and parents, as they are the main actors who require and purchase this teaching material.

Since the focus of this work is the CLIL Science textbook, this chapter also contains data about Science specific dual-focused proposals. Most of these data are specific to Spain, as they are primarily extracted from ANELE studies.

1.1. CLIL IN SPAIN.

1.1.1. WHAT IS CLIL?

According to Eurydice (2006: 7) the acronym CLIL is used as a generic term to describe all types of provision in which a second language (a foreign, regional or minority language and/or another official state language) is used to teach certain subjects in the curriculum outside the

language lessons themselves. In practice, what CLIL means is teaching a non-linguistic subject, such as Science, Arts and Crafts or Physical Education through an additional language, which in turn is also acquired. Do Coyle (1999) states that CLIL is “a powerful pedagogic tool which aims to safeguard the subject being taught whilst promoting language as a medium for learning as well as an objective of the learning process itself” (Coyle in Marsh, 2002: 37).

As the previous paragraph illustrates, both definitions of CLIL seem to present it as a dual focused approach, in which the acquisition of both content and language is fostered. That is, although language is used to learn content, it is also necessary to learn language in order to access that content and communicate. For this reason, CLIL cannot be defined just as a language learning methodology. In this respect, Fernando Zapico’s words (n.d.: 5) are clarifying:

The basic principle that differentiates a CLIL program from a language improvement project is that, in the integrated learning programme, the teaching goals do not exclusively deal with content, as they also affect linguistic aspects [my translation].²

As a first approximation to the concept, it is necessary to consider CLIL as the convergence of many language-teaching methods and not as a mere isolated and unique teaching trend. CLIL contains multiple models and approaches which could be seen as a continuum spanning from a focus on foreign or second-language learning, at one end, to a greater interest in curricular instruction through an L2, at the other end. (Banegas 2012: 117).

Since language-teaching through specific subjects has not been found to be entirely effective, CLIL may be presented as an alternative to attain more successful results in foreign language acquisition. However, it would be a mistake to conceive CLIL just as a language teaching method, as it also fosters many other skills that are essential to child development. This is the case of, for instance, cognitive ability and cultural awareness.

The fact that CLIL is frequently socially associated to bilingualism is not without foundation, as it seems clear that the Content and Language Integrated Learning model has its origins in bilingual education. However, there seems to be a widespread misconception concerning these two concepts.

Although the term “bilingual education” traditionally referred to that model in which the native-like command of two languages is the goal to reach, it is nowadays employed in a broader sense to define those programmes covering a non linguistic subject through a foreign

² “El principio básico que distingue a un programa CLIL de un plan de mejora de la competencia lingüística estriba en que en el programa de aprendizaje integrado los objetivos de enseñanza no se circunscriben al contenido, sino que afectan, al menos, a los aspectos lingüísticos.”

language. It seems necessary to highlight the fact that generally in education, unlike language studies, "bilingualism" is not currently associated to a high linguistic competence in two languages, but rather it is employed to define a teaching approach. Therefore, the programmes that are being implemented in Spain are erroneously labelled as bilingual, when several of the generally accepted criteria are missing: there is no coexistence of languages, the students' command of their mother tongue is frequently ignored as an objective, and there is a clear interest in the acquisition of content.

Integration may lie at the heart of this teaching approach. Do Coyle (2005: 4) claims that there are four essential principles to the CLIL approach which therefore should be used as guidance for creating and delivering successful lessons based upon a real CLIL focus. These are the 4 Cs, a curricular model combining content, communication, cognition and culture.

- Content: the content of the subject should allow the acquisition of knowledge and skills which are prescribed by the subject's curriculum. Essentially, one of CLIL's major contributions in the field of content is the opportunity to provide rich and meaningful learning situations where language is learnt because it is relevant for the student. In other words, CLIL is capable of providing rich contexts that turn language acquisition into a practical need.
- Communication: the language should be used to learn content at the same time as the language itself. Students should use the target language to communicate their thoughts and opinions about the lesson content. Both speaking and writing are emphasized. Thus, students learn to use language and use language to learn. (Coyle, Hood and Marsh, 2010: 54).
- Cognition: the teaching-learning process should be oriented towards developing students' higher and lower order thinking skills. These skills are used by students to engage with and understand the course content. Hence, cognition essentially involves the mental processes which are necessary for the construction of knowledge.
- Culture: lessons and activities should provide students with a wide range of cultural references that foster cultural awareness, that is, make children aware of other cultures as well as their own. Thus, the culture dimension refers to encouraging students to understand themselves as citizens of the world, and in this way promoting international awareness and understanding. This is especially relevant now that Spanish classrooms are becoming increasingly multicultural and multilingual.

Finally, we would like to provide a more contextualized definition of CLIL, in which the previous theoretical elements are translated into real teaching practices and outcome expectations. Cendoya, Di Bin and Peluffo's definition can certainly illustrate these points:

“En base a lo expuesto, concluimos que la implementación del enfoque AICLE ofrece, tanto a docentes como a alumnos, entornos ricos para que se desarrolle el proceso de enseñanza/aprendizaje de forma exitosa. A partir del uso de dicho enfoque el docente tiene la posibilidad de introducir el mundo real a la clase lo que la transforma en el ambiente natural para el aprendizaje de contenidos temáticos y lingüísticos. Por otra parte, los alumnos adquieren ambos contenidos a partir de temas que los motivan e involucran y a partir de la exposición a distintos géneros y tipos textuales. Esta exposición incentiva su competencia lingüístico-comunicativa como así también su desarrollo cognitivo, pensamiento crítico y habilidades relacionadas con una alfabetización que les permite algo más que poder leer y escribir: les permite comprender, analizar y crear textos a través de los cuales se comunican” (Cendoya, Di Bin, Peluffo, 2008: 67).³

1.1.2. REASONS FOR THE POPULARITY OF CLIL IN SPAIN.

The first measures for the implementation of CLIL as a teaching model in Spain date back to 1996, when the Department of Education and the British Council signed an agreement under which more than 40 schools offered 40% of their school hours in English (Ministerio de Educación, Cultura y Deporte, 1996: n.p). Two years later, some CLIL sections were created with French as main language. Finally in 2000 German CLIL programmes were added to the curriculum. (Gallardo, Del Amo, Gómez, Blanco and Martínez, 2009: n.p).

Although some Spanish regions are ahead in the introduction of CLIL programmes in the public education system, CLIL schools are becoming a reality throughout the country. Currently, the Principality of Asturias supports 196 educational centres implementing CLIL programmes, from rural schools to Secondary Education schools.⁴ Thus, CLIL can be pointed out as one of the most popular education trends in Asturias among all levels conforming the Spanish Compulsory Education System.

³ My translation: “CLIL offers educators as well as students a rich environment for the teaching-learning process to take place successfully. By implementing this approach the teacher has the opportunity to insert the real world into the classroom, transforming it into a natural environment for the acquisition of thematic and linguistic contents. On the other hand, students acquire both types of content through engaging and motivating topics, and by being exposed to different genres and text types. This exposition fosters students' linguistic-communicative competence, as well as their cognitive development, critical thinking and literacy-related skills that enable them to do more than read and write; it makes them capable of understanding, analyzing and creating texts through which they can communicate.”

⁴ 96 State schools, 27 State-financed schools, 5 state schools for basic education, 11 countryside schools and 57 highschools Data extracted from <http://plurilingueasturias.educastur.es/> last date of access November 19th, 2014.

The fact that there are more than 190 educational centres offering CLIL programmes in the Principality of Asturias can be taken as a reference to realize how extensively schools are adopting CLIL methodology into their educational curricula. Gomez Diez and Bobkina (2013: 2) point to two main factors for placing this methodology among the most popular educational trends: the necessity to communicate with different cultures and the association of bilingualism with a high-quality education.

The first indicator that Gómez Diez and Bobkina point to and which essentially addresses communication is also regarded as one of the main goals that the European Commission (2012: 9-12) establishes. Thus, all EU member states are working assiduously towards the development of a Europe in which all citizens are capable of speaking at least two languages different from their mother tongue. The Lisbon European Council of March 2000 declared that "becoming the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion" should be highlighted as the goal to reach. The concept of "better jobs" seems crucial to understand the task that has been specifically attributed to schools and universities, as "better" is not only directly linked to improved labour conditions but also defined in terms of qualification and earnings. Command of languages is essential to the Spanish economy, both for foreign commerce and for tourism, and so the EU objective aligns with the Spanish specific needs. Thus, the first argument that may explain CLIL's success in Spain lies in the fact that Spain belongs to a continental body which considers foreign language acquisition important for the continental economy.

Spain seems to be still far from that goal, as the Spanish Educational System is currently being affected by a loss of prestige and a presumed decadence. Standardized external tests such as PISA have recently reported that "Spain's performance in mathematics, reading and science remains anchored just below the OECD average, despite a 35% increase in spending on education since 2003 and numerous reform efforts at national and regional levels" (2012: 1). This situation has called public opinion's attention as nothing else did before to this field, promoting a necessary and healthy reflection on the effectiveness of the latest educational reforms. However, all this evidences the fact that society is clearly concerned about the education that children receive and is not content with such poor results. Second-language knowledge has also contributed to the current dubious reputation of the Spanish Educational System, as it was placed in the penultimate position in the 2005 ranking of European countries in second language knowledge (Council of Europe 2005 in Lasagabaster and Ruiz de Zarobe 2010: 3).

In this context, CLIL has been established as a firm basis to connect the Spanish system to that of more successful countries, particularly Northern European ones. Thus, the increased time of exposure to the foreign language that CLIL supposes, along with the fact that we employ the same method as other educationally successful countries may be looked upon as a possible means to improve these poor results.

Foreign language acquisition has gained importance in the educational system. Although in the origin of the English subject, communication in a second language was neither considered a goal nor a real necessity for children, it is progressively becoming the *raison d'être* of the subject. In fact, the Real Decreto 1513/2006 of 7 December states that procedures aiming at the achievement of communicative ability (reception and production, both oral and written) must provide the backbone to the English subject, in accordance with that goal of the European Union previously mentioned. At this point, CLIL seems to be an appropriate methodology to answer the requirements of the national educational law, as it agrees with that idea on setting communication as a basis of foreign language acquisition. The search for a methodology capable of optimizing foreign language acquisition has been an ever-evolving issue over the last four hundred years. In the long history of foreign language learning, communication has evolved from being completely ignored in the first stages, to becoming the main focus in recent times. It seems clear that the educational style implemented in every epoch is strongly related to a social and historical moment and the necessities stemming from it. Before the twentieth century, communicative situations were scarce, so language learning was an intellectual exercise. Hence, before the twentieth century, foreign language learning was not regarded as an instrument of communication with foreign people, but as a stimulus to strengthen and develop capacities in the students' mother tongue. Thus, the approach employed in those days did not aim at improving oral interactions in the foreign language, as situations requiring that skill rarely occurred.

The passage from a hermetic system in which knowledge barely had international transferability to a moment in which globalization defines much of our personal, economic, cultural and scientific relationships can also be considered as a key element to explain the relevance of foreign language acquisition, especially English as it is the *lingua franca* in most fields, from business through to tourism and research. As a result, English as a school subject has been reaffirmed in its relevance, as this language is present in our daily life in a wide variety of forms: online purchases, academic research or sources of entertainment such as films, music or games. National economies are no longer limited to geographical boundaries but opened internationally.

1.2. THE TEXTBOOK IN SPAIN.

1.2.1. THE RISE OF THE TEXTBOOK AS A TEACHING RESOURCE.

Among the numerous teaching resources that educators employ, the textbook may be pointed out as one of the most valuable ones. Accompanying many generations of pupils, and therefore being familiar to Spaniards of all ages, it is still the norm, prescribed by the schools and purchased by the parents (ANELE, 2013: 2). And so has it been for the last 40 years as a completely new paradigm of textbook was established (Mateos, 2008: 4).

Mateos claims (2008: 5-6) that, as education became more general and universal, the textbook expanded its empire as regulator and standardized tool of teaching. In this author's opinion, the technification (in the sense of the specific provision of educational resources) of Primary Education stemmed from the generalisation of schools, allocation of subjects to specific times and spaces and the specialization of teachers in particular areas. That is to say, the employment of textbooks is as relevant as to lay at the heart of the mass education triumph.

In the second half of the twentieth century, the textbook industry made consistent efforts to conquer the emerging market that mass education opened (Cuesta 2006 in Mateos 2008: 6). Thus, it proceeded to renew its contents and embellish its appearance so as to create a catchy product. This was such a profitable activity that textbooks were added to the cultural industry. Cuesta (2006 in Mateos 2008: 6) attributes this resource's popularity not only to the surprising quantitative rise of mass education, but also the textbook's aesthetic presentation, pictures, colour, layout and entertaining elements that fed into an advertising and consumerist language.

More specifically, *Conocimiento del Medio*⁵ books that were traditionally employed as teaching aids, namely lesson books which essentially promoted memorizing and recitation and encyclopaedias, were left aside with the arrival of new textbooks containing activities and additional resources for teachers (Mateos, 2008: 6). The renewed textbooks lead an educational conception that prioritized reality observation over the previous methods which were based on memory. The fact that there are over a thousand publications registered in the National Agency of ISBN containing the words "*Conocimiento del Medio*" in their title between

⁵From now on, *Science* and *Conocimiento del Medio* will be used to refer to the subject taught in Primary Education. *Science* will be used when the subject is taught in English and *Conocimiento del Medio* if Spanish is the language of instruction.

the years 1970 and 2014 can be considered an example of its incredible volume (according to ANELE’s online catalogue).

However, publishing figures alone are not indicative of use or degree of reliance on the textbook by teachers. Other indicators need to be considered in order to determine to which extent textbooks influence the teaching-learning process. The manner of employment of textbooks is a difficult variable to measure; but Mateos (2008: 7) carried out a survey which revealing conclusions were drawn: 40% of teachers declared adjusting their teaching practices entirely to the textbook (most teaching materials and activities are extracted from it), 60% of professionals admitted employing this resource frequently (selecting activities and complementing it with external resources) and none of the teachers admitted managing without textbooks (using other materials or even creating them). Although Mateos does not state the number of his respondents, ANELE’s data corroborates Mateos’s results, as it shows that 81,3% of teachers use this resource frequently (ANELE, 2013: 2). From the previous figures we can conclude that the use of textbooks is extensive at the Primary Education level.

Textbook publishing in Europe is a profitable cultural industry that generates around 23 billion Euro every year, right ahead of important contributors to culture, such as music, cinema or theatre (ANELE, 2013a: 2). In Spain alone, the textbook subsector generates over 803 billion euro in annual profits (ANELE, 2013a: 4). In the 2012-2013 academic year, 44% of the textbook market invoicing came from Primary Education; far ahead of its closest follower, Secondary Education with a total of 25% (ANELE, 2013a: 5). Besides, studies carried out by ANELE have shown that from a total of 7,225 Spanish textbooks available in 2011-2012 (for Infant Education, Primary Education, Secondary Education, College and Professional Training), 3,065 were designed for the Primary Education stage. (ANELE, 2012: 10). Over 19 million Primary Education textbooks were acquired for the academic year 2013-2014 (ANELE, 2013b: 10).

Consequently, as table 1 illustrates, professionals from this educational stage tend to employ this teaching-learning material more than any other educator.

Level	Invoicing in million €	Copies	Average price	Pupils	Expense per pupil
Infant Education	139.57	8158.87	17.11€	1 953 353	71.45€
Primary Education	329.38	19650.27	16.76€	2 831 901	116.31€

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Secondary Education	187.03	8567.98	21.83€	1 810 626	103.29€
Bachillerato	65.66	2196.76	29.89€	697 605	94.12€
Profesional training	19.36	693.91	27.90€	639 887	30.25€
Complement.	62.19	5304.20	11.72€		7.84€
Total	803.18	44571.99	18.02€	7 933 372	101.24€

Table 1. Textbook sales in Spain. Data supplied by ANELE, (2013b: 3). My translation

Although ANELE does not have CLIL-specific invoicing results, a recent study carried out by Tuya García (2014) demonstrates that Asturian CLIL schools do not deviate from the national statistics for traditional programmes. In her study, the most widely employed textbooks are presented and analyzed according to different criteria such as clarity of instructions, attractiveness of design or degree of interest of their activities. This study contributed to demonstrating two fundamental points: it supports the popular belief that textbooks are extensively employed by Primary Education teachers and it evidences that that these publishing materials are also used for CLIL programmes.

1.2.2. CLIL'S ARRIVAL INTO THE PUBLISHING MARKET.

As bilingual education, and CLIL as one of its most popular approaches, becomes more and more widespread in Spanish schools, the publishing industry is creating new materials fulfilling the characteristics that this pedagogical approach requires. This includes textbooks adapted to CLIL's dual-aimed conception, with an interest in both content and language acquisition.

ANELE shows that, from 2005 to 2014, more than 45 CLIL Science textbooks were registered for Primary Education in Spain. As it could be expected, the publishing houses that were traditionally employed for the teaching of Science in this educational stage –namely *Santillana*, *grupo EDEBÉ*, *Anaya* and *Edelvives*– are still the ones offering the majority of titles. However, publishers traditionally specialized in foreign language teaching have also joined this new market, with renowned houses such as *Oxford* or *Macmillan*⁶ making their own proposals for CLIL Science teaching. In addition, other houses specialized in developing the Spanish

⁶ This means that neither Oxford nor Macmillan textbooks are included in the ANELE catalogue, as they are not considered national publishers. That will mean that ANELE's figures would increase significantly if these two houses were considered.

curriculum but quite inexperienced in the foreign education teaching field have joined other publishing houses particularly highly-valued in the field of second language acquisition. This is the case of *Santillana*, which had formerly developed textbooks for *Conocimiento del Medio* instruction and recently has created its Science CLIL proposal cooperatively with *Richmond Publishing*.

This is the reason why, in the graph below, *Richmond Publishing* is the publishing house with the fewest titles, as it stopped registering textbooks independently in 2006 to begin a new project with *Santillana Educación S.L.*

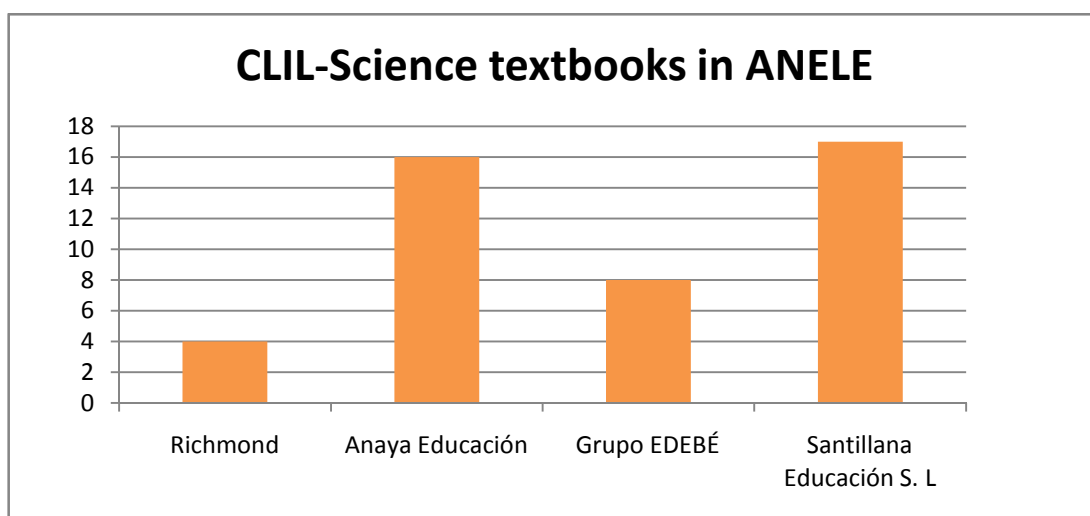


Figure 1. CLIL-Science textbooks in ANELE’s publishers. Data extracted from ANELE’s online catalogue. Graph generated from ANELE’s online catalogue data.

It seems clear that publishing houses are placing their bets on this market, as the number of titles registered from 2011 up to July 2014 is superior to that from 2005 to 2010. However, the number of CLIL textbook proposals is still limited when compared to the wide range of *Conocimiento del Medio* textbooks, which even offer different options for the same subject level in the form of projects. The fact that CLIL programmes are not universally implemented in all European countries –and are still a pilot project in many of them – may be a possible cause of the current shortage of CLIL textbooks. Furthermore, the difficulty of creating purpose-designed materials that, besides, represent CLIL’s principles accurately is also considered an obstacle for the publishing houses to create new proposals (Tuya García, 2014: 6).

1.2.3. ARGUMENTS IN FAVOUR OF THE EMPLOYMENT OF TEXTBOOKS BY PRIMARY EDUCATION TEACHERS.

The widespread dependency of educators on the textbook may have its origins in their disaffection towards the curriculum. This professional collective feels that “modeling the educational experience for students is not their task” (Gitlin, 1987: 117). Thus, teachers are unhappy that they are not given the opportunity to shape the students’ educational experience. In other words, the current curriculum model which restricts teachers’ autonomy to select contents causes a lack of motivation among teachers, who are dealing with a curriculum model which they do not regard as their own.

A consequence stemming from this disaffection, is the delegation of responsibility over their most important professional decisions: planning, sequencing, designing objectives or even creating the assessment materials. Some authors, as Rosa M^a Güemes (1994: 31), refer to this process as “deprofessionalization”, that is to say, the loss of authority in decision-making in all the aspects in which educators are concerned. The result of this is that “teachers may find themselves as mediators; they only carry out teaching practices imposed on them”. (Ur, 1991 in Tsiplakides 2011: 759). In other words, teachers consider that their professional judgment is not appreciated. In this respect Richards (2011: 255) does not only agree that teacher dependency on textbook exists, but also that it can turn educators into mere passive consumers of products.

However, Pagès (1994: n.p.) points out the lack of theoretical knowledge about the pedagogical approach as the main factor responsible for making teachers mechanical workers, without critical or reflexive capacity. Thus, textbooks are utilised mainly as assistance to help teachers transmit the contents that the curriculum marks as prescriptive.

Since accuracy and specificity are the features on demand about contents, text-books are valued as they fulfill this technical conception of teaching, which understands knowledge as something cut-out, finished, and not subject to any criticism or revision. Textbooks are fundamentally asked to help teachers transmit contents.(López Hernandez, 2007: n.p.). Original.⁷

This lack of knowledge is also detected in teachers’ concerns about implementing CLIL, as they do not know what is expected from them. In Banegas’s words “teachers need to come to terms with the models outlined but only as a framework from which they can develop their initiatives [...]” (Banegas 2012: 123). Training opportunities, support by immersion centres and

⁷ “Respecto a los contenidos se busca la objetividad y concreción, por lo que los libros de texto son valorados como más positivos cuanto más se acercan a esta concepción técnica de la enseñanza que entiende el saber como algo acabado, objetivo y no sometido a revisión crítica. Al libro de texto se le pide, fundamentalmente, que ayude a transmitir los contenidos.”

teaching materials were ranked by teachers as factors of central importance in determining educators' performance in CLIL programmes (Mehisto 2008 in Banegas 2012: 48). Thus, even teachers recognize the adverse effect of the lack of training on their teaching.

On the other hand, the use of textbooks seems to entail an enormous benefit for teachers as the required time for planning their lessons is significantly reduced. "Course books [...] need little preparation time for lesson planning, whereas teacher-generated materials can be defective in terms of time, cost and quality". (Sheldon, 1988 in Tsiplakides, 2011: 758). Lucietto (2006: 25) also points out quality, publishing support and a wide range of additional materials as characteristics attributed to coursebooks.

Families also seem to have a special relationship with this teaching material. A recent study conducted by ANELE showed that 71.9% of parents consider the textbook essential for their children's learning, not only at school but also at home. In addition, according to this research, it is also the most valuable teaching resource, clearly distanced from the second one, Internet (ANELE, 2013a: 2). In other words, parents accept willingly the purchase of textbooks for their school-aged children.

The textbook provides parents with an invaluable control of their children's learning process as it makes them aware of the content corpus that is being developed inside the classroom. Besides, it also gives the parents the opportunity to predict some elements of the teaching process such as the next contents to be taught and the date of the assessment. On this point Brewster, Ellis and Girard (1992: 52) state that the textbook identifies what should be taught/learnt and the sequential order in which this task should be carried out. All these aspects would not be as easy to supervise for families without a textbook. This resource presents the contents in a homogenous way that, once known, will be repeated time after time, and therefore families will expect the procedure to be regular. That is to say, parents obtain in advance well-arranged materials that make the teaching-learning process easy to follow from outside the educational environment.

Parental help tends to be crucial for this educational stage. However, the fact that not all parents are qualified with the specific knowledge to assist their children must be taken into account. Hence, the textbook represents a useful tool for them, because it seems to gather all the information that will be needed for doing off-classroom tasks in a way that is finished, ready to use and adapted to children. One thing is certain: this pedagogic resource may establish a firm link between educators and families, who can now involve themselves in the classroom's daily life without being physically inside it.

Selecting a Science textbook for the CLIL classroom: a checklist proposal

All the issues discussed along this chapter help us to reflect on the complex scenario where CLIL programs are being implemented. It is essentially characterized by the perceived ineffectiveness of the Spanish Educational system which creates distrust among citizens, a shortage of materials adapted to both CLIL foundations and the Spanish curriculum and the lack of specific training for educators. The last two elements may become noticeable obstacles for selecting CLIL Science textbooks, since not only do educators have limited choices but they also may lack the specific knowledge concerning CLIL that allows them to select an appropriate textbook. These reasons lie at the heart of this attempt to design a checklist for CLIL Science textbooks that may help educators to focus on the most relevant features that a CLIL textbook needs to possess.

CHAPTER 2

METHODOLOGY

Textbook selection entails a considerable responsibility for educators. By selecting the appropriate coursebook, the teacher may guarantee the quality of the teaching materials employed, and therefore will contribute to designing and delivering successful CLIL lessons. With this view in mind, this section proposes a checklist for CLIL Science textbook selection according to theoretical and methodological criteria. Practical examples extracted from CLIL Science textbooks will be used for support and illustration.

The checklist will be designed on the basis of two distinct processes: analysis and evaluation. Analysis is understood in this work as the procedures aiming at discovering the textbook specificities, whereas evaluation is conceived as the judgment of its quality. Concerning analysis, McGrath (2002: 22) highlights its objectivity for describing the resource studied. Nevertheless, Mäkiranta (2014: 19) questions whether complete objectivity can ever be reached in analysis procedures. Respecting evaluation, which McGrath defines as “making judgments”, it seems clear that it is determined by a subjective element, as its main goal is to assign a value to the material for a set of students which will be variable. One thing is certain: as analysis frequently precedes evaluation, both procedures cannot be completely dissociated. That idea represents precisely the essence of this study.

This chapter includes the literature review on textbook evaluation as well as a justification for employing a checklist as a methodological tool. The complete checklist is included in chapter 7.

Coyle’s 4 Cs framework (1999), which was briefly introduced in chapter 1, will be used as the backbone to articulate this study. The explanation, justification and illustration for each checklist item have been included in an independent chapter following the dimensions of CLIL. That is, chapter 3 for content items, chapter 4 for cognition issues, chapter 5 for items dealing with communication and finally, chapter 6 in the case of cultural aspects.

2.1. LITERATURE REVIEW ON TEXTBOOK EVALUATION.

Textbook evaluation is “a procedure that involves measuring the value (or potential value) of a set of learning materials” and “making judgments about the effect of the materials on the people using them” (Tomlinson 2003: 15). Evaluation itself is known to be one of the main

components of the teaching learning process and teaching resources have received much of their attention.

Although research on EFL educational materials has been conducted widely, textbook evaluation is limited by the lack of theoretical and methodological rigour, as pointed out by Tomlinson (2011: 3) and Harwood (2013: 2-3). In the specific case of CLIL, studies –just as ready-to-use resources– do not abound.

2.1.1. EVALUATIVE STRATEGIES

Existing literature on textbook evaluation, namely Cunningsworth's (1995) and Ellis's (1997) studies, suggests three broad possible evaluative strategies according to the moment in which the reflection is carried out: pre-use, in-use and post-use.

- Pre-use evaluation: It is the most frequently used strategy, as it consists in examining textbooks to predict their performance during the instruction. It usually occurs at the beginning of a new academic year, when teachers examine the different publishing houses' proposals in order to select the most suitable one considering their teaching styles and their sets of students.
- In-use evaluation: it allows the educator to detect weaknesses and strengths in the resource while it is being implemented in the teaching learning process. That is, the range of opinions that the teachers form when employing the resource with their students. It usually consists in liking or disliking certain activities that the textbook proposes or the clarity of the information provided and its sequencing.
- Post-use evaluation: it assists the educator in evaluating the quality of a textbook once the material has already being employed in a particular context. When the academic year is over, educators usually reflect on which book to choose for the following year. Thus, they evaluate the benefits and drawbacks of the textbook previously employed, reflecting on the elements they found adequate/inadequate and therefore, orienting their new choice to fulfil their requirements.

Considering these criteria, the evaluative checklist for CLIL Science textbooks that the present work establishes was conceived as a pre-use evaluation tool. It was essentially designed for assisting educators in the textbook selection process. In order to select an appropriate textbook, it is necessary to predict how it will be employed so as to foresee

whether it will work for the target group. In other words, it includes anticipating the effects that the examined material will have on learners.

According to Harwood (2013: 2) content, consumption and production define the sphere of possible studies around textbook analysis. Thus, the educator or researcher could be interested in three main aspects concerning textbooks:

- Content: essentially, it refers to the knowledge which is included and excluded in the proposals. That is, this dimension is concerned with content selection, linguistic items and culture that is present in the textbook.
- Consumption: this term comprises the use of a specific textbook inside the classroom. Thus, it naturally looks into how teachers and learners use a textbook along with the elements of the teaching learning process that are controlled by the resource.
- Production: it considers the processes that are involved in designing and developing materials for educational purposes. Harwood (2013: 2) refers essentially to “the processes by which textbooks are shaped, authored and distributed, looking at textbook writers’ design processes, the affordances and constraints placed upon them by publishers, and the norms and values of the textbook industry as a whole”.

This work will focus more particularly on the content category. Consumption, however – in the sense of the actual use of the resource – will not be considered, as it can only be predicted and it is extremely context-dependent. The production stage will not be examined in this work. It is generally acknowledged that CLIL teachers are necessarily material designers, since very few resources are ready-made (Mäkiranta, 2014: 18). Nevertheless, this work believes that by selecting an appropriate coursebook the amount of production time for CLIL teachers will be significantly reduced. In Mäkiranta’s words (2014: 23), CLIL materials are found to be a “source of difficulty and an increased workload for teachers”. Thus, the present work suggests as a response to that complaint analyzing the textbooks’ proposals carefully with the idea of selecting a textbook which is appropriate to the students’ necessities in terms of both cognitive and linguistic development.

2.1.2. METHODS.

AbdelWahab (2013: 56) points at three different methods for textbook evaluation as the most widely used: the impressionistic method, the checklist method and the in-depth method.

The impressionistic method consists in basing the judgment of a textbook on the general impression that it causes by glancing over the syllabus that it proposes and its general layout. Although economical in terms of time, this method does not allow establishing a reliable comparison among different textbooks, as there is not a valid set of criteria to be extended easily to any analyzed textbook. Thus, the impressionistic method is to be dismissed in the case of teachers whose goal is to select an appropriate textbook among the wide range of proposals that are already in the market.

The in-depth method, by contrast, entails a detailed study of concrete aspects. Essentially, it consists in examining and analyzing small elements such as the treatment of certain grammar structures, the design of specific exercises or various aspects from a random unit. This method yields significant results. However, they cannot be generalized to the whole textbook, as only a small part of it is taken into consideration. In addition, this method does not respond to the actual strategies that educators employ for textbook selection.

Finally, the checklist method employs a number of listed criteria that need to be checked off in the studied resource. Ideally, the items that form the checklist use a simple and clear grammar structure and refer to one specific aspect at a time.

One of this method's major contributions is that it permits comparing different textbooks systematically without investing too much time in the task. Thus, applicability is one of the checklists' features. The previous idea also leads us to highlight their economy in terms of time, since their systematicity allows teachers to be focused on concrete aspects and prevent the analysis from being time-consuming and chaotic. All those are reasons that turn the checklist method into an appropriate and convenient evaluative tool for textbooks. Consequently, this is the method that we will employ for this work.

2.2. DESCRIPTION OF THE SELECTED METHOD FOR CLIL TEXTBOOK SELECTION: THE CHECKLIST.

The most extensively employed definition of checklist is that in which checklists are conceived of as a list of items that need to be verified. Stufflebeam (2000: n.p.) highlights their potential as evaluation tools provided that they are carefully developed, validated and applied. This instrument has traditionally been used in a wide variety of fields. In particular, EFL educators have relied on checklists as a framework for a wide variety of tasks, from lesson planning and reflection through to textbook selection.

Numerous authors such as AbdelWahab (2013: 59) have pointed at a lack of reliable instruments for textbook evaluation. In this respect, defects have also been found in existing checklists, especially on the grounds of vague evaluative criteria and the excessive or defective number of items. Besides, checklists are subject to the need for regular revision and adaptation to the latest improvements in pedagogy, language and didactics. This turns them into dynamic but time-consuming to design instruments.

Nevertheless, authors such as Mukundan (2012: 1128) still regard checklists as an accurate method of assessment as long as they are based on valid evaluative criteria. The reason for this is that “checklists allow a more sophisticated evaluation of the textbook in reference to a set of generalizable evaluative criteria”. (Mukundan, Hajimohammadi, Nimehchisalem, 2011: 21). These authors refer to the checklists’ suitability to study specific aspects of a textbook systematically, therefore fostering scientific rigour in the process of analysis.

We can identify two types of checklist: quantitative checklists and qualitative checklists. Broadly speaking, quantitative checklists use numbers to answer questions, whereas qualitative checklists employ attributes to make judgments about the issue under examination. In picture 1 we can observe an example of a quantitative item, in which the user is expected to assign a numerical value to the analyzed feature. By contrast, picture 2 shows a qualitative item that bases the users’ judgment on a gradation of adjectives instead of a number.

Evaluative criteria	Level of importance	Reword	Comment
I. General attributes A. The book in relation to syllabus and curriculum 1. It matches to the specifications of the syllabus.	① ② ③ ④ ⑤		

Picture 1. (Mukundan & Nimehchisalem 2012: 1132).

Items of Evaluation	Good	Satisfactory	Poor
I. Physical and utilitarian attributes A- General Appearance 1 The outside cover is informative and attractive.			

Picture 2. (AbdelWahab 2013: 66)

Both qualitative⁸ and quantitative⁹ textbook evaluation checklists have been designed, qualitative ones being more abundant in literature (Mukundan, Hajimohammadi,

⁸ See Rahimy, 2007; McDonough & Shaw, 2003; McGrath, 2002; Cunningsworth, 1995.

⁹ See Mukundan & Nimehchisalem, 2012; Canado & Esteban, 2005; Miekley, 2005; Ur, 1996.

Nimehchisalem, 2011: 21). In this case, a qualitative checklist has been selected owing to its greater efficiency in terms of design and application.

Checklists adapted more specifically to CLIL specifications for textbook selection and/or evaluation are not numerous. The employment of the existing EFL checklists does not seem to be advisable in the case of CLIL subjects, since, as the previous chapter discussed, both language teaching fields do not seek the same purposes and therefore, their main focus will not align. It is necessary to remember that, unlike EFL, CLIL is an approach with an interest on both content and language, therefore both elements should be considered in a textbook proposal.

On these grounds (considering both content and language), this work attempts to design a reliable checklist for CLIL textbook selection. This checklist, however, does not seek to be exhaustive. Although ESL checklists include points such as the textbook's layout or the suitability of fonts and sizes,¹⁰ these aspects have been omitted in the proposed checklist in order to preserve user-friendliness and CLIL-specific relevance.

Gawande's template below was employed as guidance for the elaboration of the evaluative criteria.

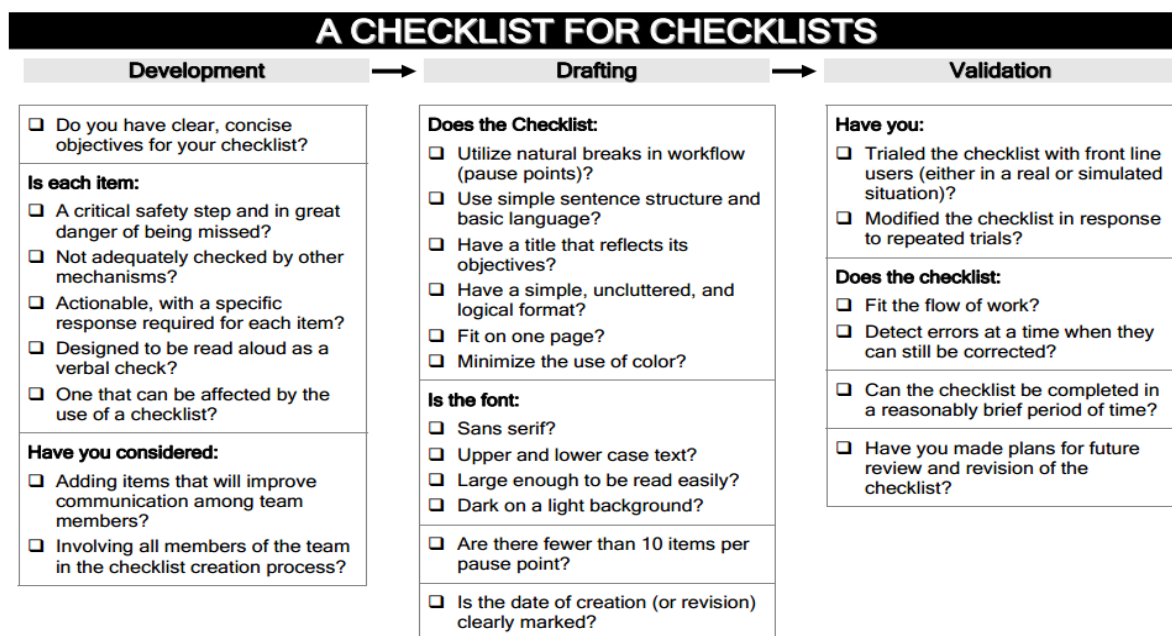


Figure 2. Gawande's orientations for checklists. Extracted from Gawande 2009: n.p

¹⁰ See AbdelWahab (2013), Miekley (2005).

Although this template was created for medical studies, it is also appropriate for this work because it gives general standards that can be useful for a wide variety of fields. Essentially, this checklist's recommendations (especially those appearing in the development and draft stage) have been useful when formulating the items of the checklist.

The proposed checklist is divided into four essential categories following the 4 Cs scheme. Thus, CLIL principles are examined following Do Coyle's framework, making an attempt to discover how to transform its foundations into concrete and representative textbook features. However, it is necessary to point out that, although the four components of the framework will be outlined independently, there will be interconnections among them, as they do not exist as separate elements (Coyle, Hood and Marsh, 2010: 55).

Different published textbooks for CLIL Science teaching in Primary Education are used to illustrate the checklist items that we propose. The current coexistence of two different educational laws (LOE for 2nd, 4th and 6th grades and LOMCE for 1st, 3rd and 5th grades) affects the subject of Science considerably, since LOMCE divides *Conocimiento del Medio* into two independent subjects: Natural Science and Social Science. For this reason, materials addressing both documents will be used.

The following textbooks have been used for illustration and justification of the checklist.



TEXTBOOK	<i>Natural Science 3</i>
PROJECT TITLE	By me
GRADE	3 rd grade of Primary Education
PUBLISHING HOUSE	<i>Ediciones Bilingües S.L.</i>
YEAR	2014
ADDITIONAL INFORMATION	Ediciones Bilingües S.L. is a company created by Macmillan Iberia and Grupo Edelvives

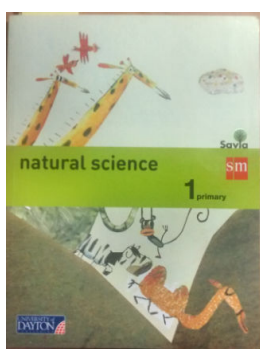
Table 2. Natural Science 3, by *Ediciones Bilingües S. L.* information.



TEXTBOOK	<i>Science 2</i>
PROJECT TITLE	-
GRADE	2 nd grade of Primary Education
PUBLISHING HOUSE	<i>Grupo Anaya S.A.</i>
YEAR	2007
ADDITIONAL INFORMATION	

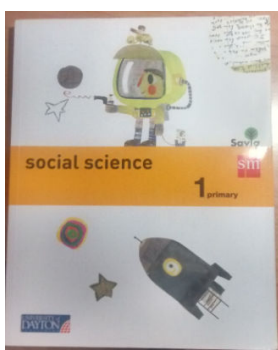
Table 3. Science 2, by *Grupo Anaya S.A.* information.

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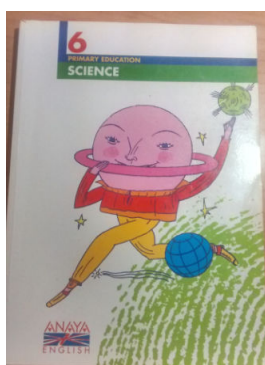
TEXTBOOK	Natural Science 1
PROJECT TITLE	Savia
GRADE	1 st grade of Primary Education
PUBLISHING HOUSE	SM and University of Dayton Publishing
YEAR	2014
ADDITIONAL INFORMATION	It comes with an attachment called <i>Nora Around the World</i> .

Table 4. Natural Science 1, by *SM and University of Dayton Publishing* information.



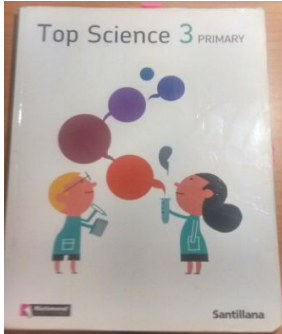
TEXTBOOK	Social Science 1
PROJECT TITLE	Savia
GRADE	1 st grade of Primary Education
PUBLISHING HOUSE	SM and University of Dayton Publishing
YEAR	2014
ADDITIONAL INFORMATION	It comes with an attachment called <i>Ismael's diary</i> .

Table 5. Social Science 1, by *SM and University of Dayton Publishing* information.



TEXTBOOK	Science 6
PROJECT TITLE	-
GRADE	6 th grade of Primary Education
PUBLISHING HOUSE	Grupo Anaya S.A.
YEAR	2006
ADDITIONAL INFORMATION	

Table 6. Science 6, by *Grupo Anaya S.A.* information.



TEXTBOOK	Top Science 3
PROJECT TITLE	-
GRADE	3 rd grade of Primary Education
PUBLISHING HOUSE	Santillana Educación S.L. and Richmond Publishing
YEAR	2011
ADDITIONAL INFORMATION	

Table 7. Top Science 3, by Santillana Educación S.L. and Richmond Publishing information.

2.3. CHECKLIST SPECIFICATIONS: DISTRIBUTION AND RATING SCALE.

Perhaps the most widely acknowledged formulation of CLIL methodological foundations is Do Coyle's 4 C's framework (1999). It has traditionally been proposed as the set of aspects that need to be considered to design and deliver successful CLIL lessons. For this reason, it also determines the didactic and pedagogic principles behind this checklist.

Content, cognition, communication and culture are employed as dimensions to organize the checklist's items around specific aspects of CLIL. For this reason, we dedicate one chapter to discuss, justify, select and illustrate the evaluative criteria of each dimension. Chapter 3 covers the issue of content, chapter 4 deals with cognition, chapter 5 discusses the communication dimension and finally, chapter 6 reflects on culture.

As educators usually compare different textbook proposals before showing their preferences and it is difficult to identify elements which are either covered exhaustively or entirely neglected in a textbook, we have adapted the checklist by adding a rating scale with the aim of determining to what extent the checklist's items are covered. Thus, this modification allows us to establish different degrees of fulfilment of each descriptor and therefore permits a more realistic employment of the designed tool.

The rating scale employed has been limited to five categories. This level of differentiation allows us to determine the extent to which the checklist item is fulfilled, from fully covered, through to satisfactory, fair, slightly and completely ignored.

The final checklist avoids employing numbers to indicate the points on the scale. Instead, we have preferred giving a label to each category with the aim of ensuring that users can interpret them clearly and apply them consistently. Besides, it does not seem useful to

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express opinions in numerical terms, and very few people do it (Taylor-Powell, 2008: n.p.). However, the categories are translated to numerical terms afterwards with the aim of confronting different textbooks and determine which one is stronger or weaker around each dimension. The number attributed to each category is 1 for “very poor”, 2 for “poor”, 3 for “average”, 4 for “good” and 5 for “excellent”.

CHAPTER 3

CLIL EVALUATION CRITERIA: CONTENT

The acquisition of new knowledge, skills and understanding is clearly one of the most important objectives of the CLIL approach. For this reason it is said to guide the planning along the process. As Coyle, Hood and Marsh state, the first C must be considered as a wider element than simply knowledge acquisition (2014: 53). Content will be better represented by the definition of the range of skills and understanding to be developed by the students.

3.1. CONTENT AGREEMENT WITH CURRENT ASTURIAN EDUCATIONAL LEGISLATION.

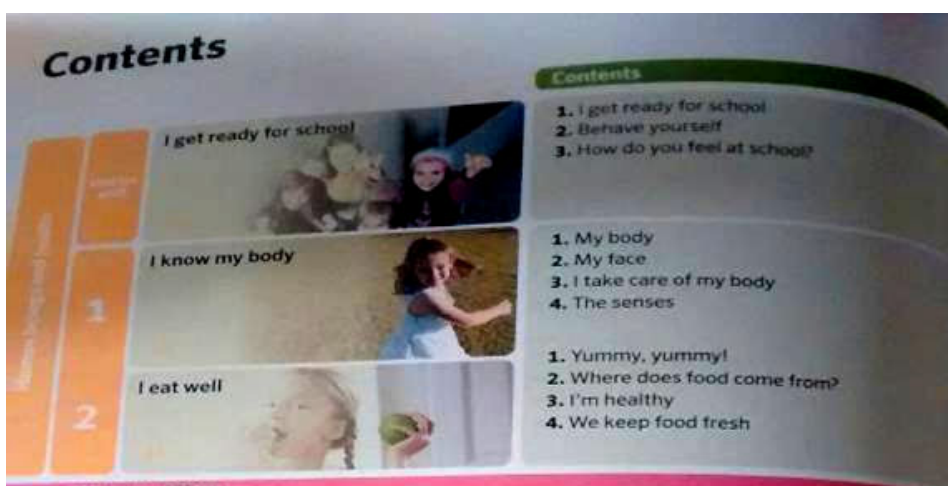
In the issue of content selection, both teachers and publishing houses have their autonomy restricted by the content curriculum that the Spanish Educational law mandates. This document prescribes the contents that students need to learn in every cycle of the Primary Education stage. As there are two educational laws which are official during 2014/15 academic year, teachers and publishing houses need to adjust their content selection to the appropriate one: LOE for 2nd, 4rd and 6th grade, LOMCE for 1st, 3rd and 5th grade. However, it must be highlighted that both documents only contain the minimum contents to be acquired during this educational stage. That is to say, they permit teachers to include other contents provided that the ones that they prescribe are acquired within the two courses composing each cycle.

Since there is no specific content curriculum for CLIL subjects as yet, CLIL areas need to find their guidance in the official curriculum of the non-CLIL version of the subject. That is, for Science, CLIL teachers and textbook authors are referred to the *Conocimiento del Medio (LOE) and Ciencias Naturales and Ciencias Sociales (LOMCE)* content curriculum.

Content	Proposed checklist descriptor
1. The contents selected agree with those prescribed by the current educational law.	

As the Spanish educational law regulates the content curriculum, textbooks need to adjust their contents to those prescribed. A possible method to detect whether this point is addressed in a textbook is comparing the table of contents which usually appears among the five first pages of every textbook to the content curriculum standards. However, the way in

which the contents are written may not permit checking this point by just glancing over the textbook's syllabus. Thus, it may require further examination. In the case of BOPA 82/2014, which is the Asturian adaptation of the LOMCE curriculum, the standards appear to combine several elements within the same content point, as they represent better the essence of learning objectives than what we expect from contents. For instance, in the provisions designed for the first course of Primary Education, the standard "desarrollo de hábitos de trabajo y reflexión sobre la importancia del esfuerzo y la responsabilidad" seems to gather two independent elements. Thus, a textbook can cover one and ignore the other. The way in which BOPA 82/2014 writes its standards makes the content identification process time-consuming, since the syllabus does not contain enough information to determine whether the content fits the learning objectives laid out in the law.



Picture 3. Natural Science 1. SM Savia. N.p.

As an example, the *SM Natural Science* CLIL textbook for the first grade of Primary Education, whose table of contents can be examined in picture 3, is compared to the standards prescribed by *Decreto 82/2014* for this academic level. Since this document differentiates five content blocks for *Ciencias de la Naturaleza*, the textbook contents are analyzed following this distribution. In addition, we have added a page where the corresponding standard is developed by the analyzed textbook.

CONTENT BLOCK 1. INICIACIÓN A LA ACTIVIDAD CIENTÍFICA	
Decreto 82/2014 standards for 1st year of Primary Education	Textbook contents
Iniciación a la actividad científica mediante el aprendizaje por descubrimiento poniendo especial interés en la observación.	X (p. 91)
Aproximación experimental a algunas cuestiones de interés para el alumnado que le permitan formular preguntas sugerentes y adecuadas.	
Iniciación en el uso de fuentes de información (directas e indirectas).	
Iniciación en el uso de las tecnologías de la información y comunicación para buscar información de manera guiada.	
Adquisición de hábitos de prevención de enfermedades y accidentes, en el aula y en el centro.	X (p. 107)
Utilización de diversos materiales, teniendo en cuenta las normas de seguridad.	
Fomento del trabajo individual y en grupo.	X (p. 110)
Desarrollo de técnicas sencillas de estudio y trabajo (esquemas, búsqueda guiada de información en la red...).	
Desarrollo de hábitos de trabajo y reflexión sobre la importancia del esfuerzo y la responsabilidad.	
Realización de sencillos proyectos.	X (p. 30)

Table 8. Contents from content block 1 prescribed by Decreto 82/2014 and presence in the analyzed textbook.

CONTENT BLOCK 2. EL SER HUMANO Y LA SALUD	
Decreto 82/2014 standards for 1st year of Primary Education	Textbook contents
Identificación de las partes del cuerpo humano (cabeza, tronco, extremidades) y de las principales articulaciones. Aceptación del propio cuerpo y del de otras personas con sus limitaciones y posibilidades.	X (pp. 18 and 30)
Identificación y descripción de alimentos diarios necesarios para una dieta sana. Conocimiento de hábitos adecuados en la forma de comer.	X (p. 41)
Valoración de la higiene personal, las posturas corporales correctas y el descanso como medidas que contribuyen a tener una buena salud.	X (p. 25)
Adquisición de hábitos de prevención de enfermedades y accidentes domésticos.	X (p. 24)
Avances de la ciencia que mejoran la vida: La pasta de dientes y los cepillos.	X (p. 24)
Identificación de emociones y sentimientos propios. Refuerzo de la autoestima.	X (p. 13)

Table 9. Contents from content block 2 prescribed by Decreto 82/2014 and presence in the analyzed textbook.

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CONTENT BLOCK 3. LOS SERES VIVOS	
Decreto 82/2014 standards for 1 st year of Primary Education	Textbook contents
Elementos de la naturaleza: Animales, plantas y seres inertes.	X (p. 50)
Observación directa e indirecta de múltiples formas de vida.	X (p. 56)
Identificación de diferencias entre seres vivos y objetos inertes.	X (p. 52)
Clasificación de animales y plantas según elementos observables (forma de desplazamiento, medio en que viven, alimentación,...), identificación y denominación.	X (p. 78)
Identificación de diferencias entre animales y plantas.	
Las plantas del entorno: Utilidad y partes que se distinguen en ellas.	
Los animales del entorno. Características y costumbres. *Entorno is here understood as referring to the Asturian area.	
El medio ambiente: Elementos que lo forman.	X (p. 60)
Relaciones entre animales y plantas.	X (p. 58)
Hábitos de cuidado y respeto hacia los animales.	X (p. 59)
Utilidad de los medios tecnológicos para el estudio de los seres vivos: El ordenador como fuente de información.	
Tomar conciencia de nuestra responsabilidad en el cuidado del entorno.	X (p. 103)
Desarrollo de actitudes y hábitos de cuidado y respeto a los seres vivos.	X (p. 64)

Table 10. Contents from content block 3 prescribed by Decreto 82/2014 and presence in the analyzed textbook.

CONTENT BLOCK 4. LA MATERIA Y LA ENERGÍA	
Decreto 82/2014 standards for 1 st year of Primary Education	Textbook contents
Exploración y clasificación de materiales del entorno en función de su origen natural o artificial, de sus características físicas (textura o transparencia) y de su utilidad.	X (pp. 87 and 88)
Realización de experiencias sencillas para el estudio de la flotabilidad de los cuerpos en el agua y de los cambios que experimentan algunos materiales cuando son expuestos a agentes ambientales.	
Comportamiento de los cuerpos ante la luz o ante el calor.	X (p. 90)
Reflexión sobre los sonidos agradables y desagradables y las protecciones que debemos adoptar	

Reducción, reutilización y reciclaje de los materiales más habituales.	X (p. 96)
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Table 11. Contents from content block 4 prescribed by Decreto 82/2014 and presence in the analyzed textbook.

CONTENT BLOCK 5. LA TECNOLOGÍA OBJETOS Y MÁQUINAS	
Decreto 82/2014 standards for 1 st year of Primary Education	Textbook contents
Máquinas y aparatos. Identificación de diversidad de máquinas en el entorno.	X (p. 104)
Descripción de diversos objetos y máquinas.	X (pp. 94 and 108)
Exploración de objetos y aparatos a través de los sentidos.	X (p. 29)
Clasificación de los aparatos y máquinas que se utilizan en las tareas del hogar.	X (p. 100)
Uso responsable de materiales y herramientas.	
Montaje y desmontaje de objetos simples.	
Manipulación de herramientas y máquinas sencillas del propio entorno y de uso común.	
Identificación de los elementos básicos de un ordenador (teclado, pantalla, ratón...). Iniciación en su uso. Cuidado de los recursos informáticos.	X (p. 106)
Máquinas que funcionan con la electricidad.	X (p. 98)
Normas de seguridad en el uso de las máquinas.	X (p. 107)
Los avances tecnológicos.	X (p. 105)
Inventos y descubrimientos tecnológicos que facilitan la vida diaria de las personas.	X (p. 104)
Uso de las tecnologías de la información y la comunicación.	X (p. 105)

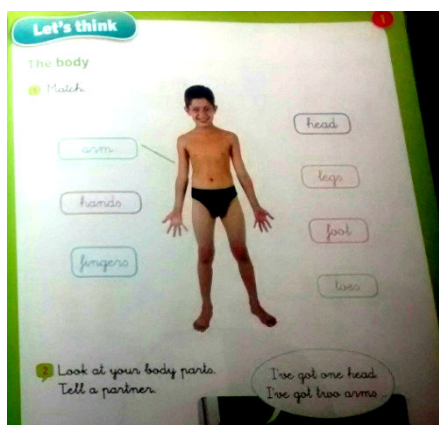
Table 12. Contents from content block 5 prescribed by Decreto 82/2014 and presence in the analyzed textbook.

The purpose of this exercise is to detect whether all the standards that the law prescribes are addressed by the textbook which is being analyzed. However, the user can employ any other suitable method of their choice. This is an important issue, as educators will need to score this descriptor from 1 to 5.

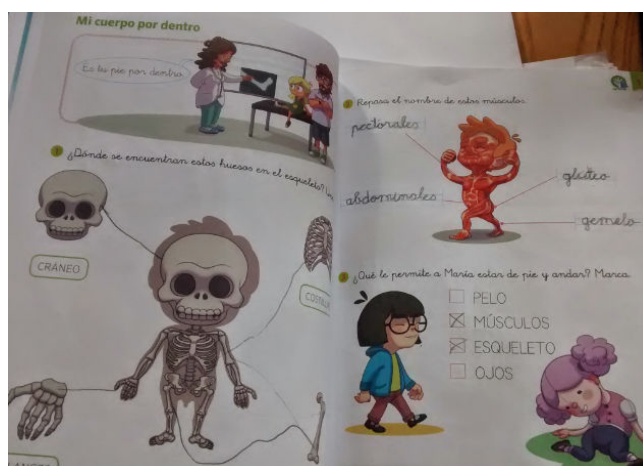
3.2. COGNITIVE CHALLENGE.

The lack of a CLIL specific curriculum implies that technically, both students of *Conocimiento del Medio* and students of CLIL Science will necessarily be guided by the same syllabus in order to acquire the same contents.

However, after having examined the two Natural Science textbooks¹¹ by SM, one specific for CLIL Natural Science and another one for *Ciencias Naturales* from the same project (*Savia*), we can state that both textbooks are not at the same level of specificity. Although it was evident that both syllabuses follow current educational prescriptions, they do not contain the same amount of information. As an example of this, picture 5 below shows a content that was covered on the *Ciencias Naturales* textbook and not by its CLIL counterpart (picture 4).



Picture 4. SM Savia (2014). *Ciencias Naturales*. 1º Primaria. Page: 27



Picture 5. SM Savia (2014). *Natural Science*. 1 Primary.

The CLIL textbook does not look into specific bones and muscles. In fact, it is especially focused on making a distinction between bones and joints throughout the unit. Picture 4 reveals that the CLIL textbook is concerned with broader distinctions than the textbook for the traditional subject. The contents of the CLIL Natural Science book seemed simplified in relation to its non-CLIL counterpart. This suggests that publishing houses may be reducing their expectations of content-acquisition for CLIL students.

CLIL students may be learning less –and sometimes less challenging– content than their non-CLIL peers. But arguably, it is pedagogically incorrect simply to expose students to

¹¹ *Natural Science*. 1 Primaria. Savia Project. SM and University of Dayton publishing; *Ciencias Naturales*. 1º Primaria. Proyecto Savia. Editorial SM

cognitively undemanding contents. Coyle, Holmes and Kings (2009: 16) also agree that CLIL is not about lowering learning expectations: “CLIL is about new learning. In a CLIL lesson the learner is discovering new knowledge, developing new or existing skills and deepening understanding.” Therefore, the textbook should allow students’ cognitive progression and not restrict it on the basis of linguistic difficulty. CLIL theory is partly grounded on Vygotski (1980), who states that learning should be based on challenging activities slightly higher than the learners’ competences already acquired.

Coyle, Holmes and Kings’ words (2009: 22) seem extremely clarifying to cast aside the idea of CLIL as a watered-down approach:

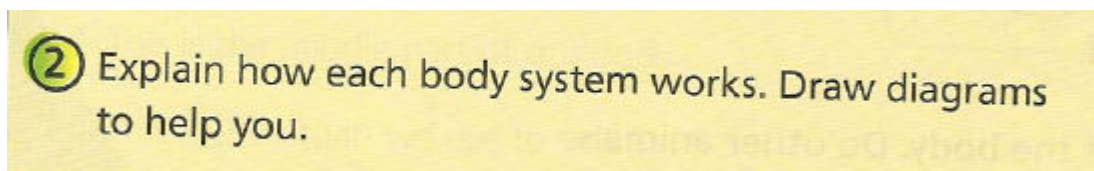
“The challenge for teachers is to raise the level of the language to meet the level of the content and not to fall into the trap of reducing both language and content to low and undemanding levels”

Content	Proposed checklist descriptor
	2. The contents suggested by the textbook challenge learners’ thinking.

We mentioned above that all dimensions feed into each other. Thus, the following descriptor combines both content and cognitive development. As content is its focus, we have decided to include it in this section.

Content	Proposed checklist descriptor
	3. The contents suggested by the textbook are accessible for the students’ cognitive level.

In the following activity displayed on picture 6 below, students are required to write an explanation of the functioning of different body systems.



Picture 6. Natural Science By me (2014). Ediciones Bilingües S.L. (Macmillan Iberia and Grupo Edelvives).

This activity places adequate cognitive demands on the students, as it requires that they perform several tasks before the activity's outcome is produced. Initially, students need to know which are the different body systems and that they work independently. Then, the learners will sequence each body system's process by pointing out the organs involved in it. In other words, this task stimulates learners' thinking, as providing an answer to it involves complex processes.

3.3. CONTENT AND LANGUAGE INTEGRATION.

From the prevailing role that Coyle, Hood and Marsh attribute to content one conclusion is to be drawn: by no means must content be simplified to match the students' linguistic level. As the dual focused nature of CLIL suggests, both subject area content and language content need to be integrated. In fact, integration is a key feature to understand the relationship between them.

In this respect, Banegas (2011: 16) adds that "in the case of CLIL, where there is both language and subject matter, the content material should dictate how language is sequenced and therefore presented". In other words, it is the content that determines the language'. (Coyle, Holmes and Kings 2009: 21). However, this does not mean that language is less relevant than subject content in CLIL. The subject content makes language relevant, and in turn, language makes the subject content accessible. However, it is necessary to remember that the *Conocimiento del Medio* curriculum (or *Ciencias Sociales* and *Ciencias Naturales* in the case of LOMCE) needs to be covered in the CLIL version of that subject, and therefore language should be adapted in such a way that it allows primarily to acquire those prescribed contents. According to the current laws, where there are no specific CLIL standards or guidelines adapting the curriculum, it is content-acquisition that is mandatory. That is why language is said to be contingent upon content in CLIL subjects.

In the case of the exercises displayed on picture 7 and 8, linguistic demands are limited to the understanding of the question statements themselves.

Name three simple machines and three compound machines.

Picture 7. Top Science 3. Santillana. Page 71

4. Match and copy the phrases to complete the sentences.

Raw materials are made in factories.

Manufactured products are natural resources transformed by factories.

Picture 8. Top Science 8. Santillana. Page 143

However, in the activity on picture 9, both language and subject content seem to be simultaneously emphasized. Initially, students are required to re-arrange the words to form a grammatically correct question, thus promoting skills for elaborating interrogative sentences, and then to provide an appropriate answer, which will verify students' subject content acquisition.

Work in pairs. Order the questions and test your partner.

Pupil A

- a. do / food / make / own / their / animals?
- b. is / plant / a / mushroom / a?
- c. lay / do / horses / eggs?
- d. climb / can / plants?

Pupil B

- a. is / plant / seaweed / a?
- b. do / plants / food / make / own / their?
- c. are / viviparous / animals / snakes?
- d. is / pebble / a / thing / living / a?

Picture 9. Natural Science 3 By me. Ediciones Bilingües S.L. Page 47

In practice, we can conclude that activities such as the one displayed on picture 9 are useful to promote a balance between subject and language content, as they reveal a dual-interest in both types of content. For this reason, it is necessary that our checklist seeks to identify activities responding to this balance between language and content.

Content	Proposed checklist descriptor
4. The textbook activities integrate language development and content acquisition.	

4.1. CROSS CURRICULAR CONTENTS AND SKILLS.

Cross-curricular references are advisable according to CLIL principles as they provide cohesion across the different contents acquired in the discrete teaching subjects. According to Coyle, Holmes and Kings (2009: 11) "cross-curriculum dimensions provide important unifying areas of

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learning that help young people make sense of the world and give education relevance and authenticity". Essentially, cross-curricular approaches seek to build a more holistic understanding of a theme by addressing several aspects of it from different subjects. Thus, educators in charge of different school subjects can work cooperatively from their own fields by connecting their subject's content to a more general one which acts as stimulus for learning. Thus, we imagine that a school is interested in raising students' awareness in pollution, each subject can contribute to enriching the content: the Science teacher may suggest a report on the different types of pollution and their consequences on living things; the Math teacher can provide students with problems aiming at discovering the amount of annual pollution of factories, cars and other elements; while the Music teacher may encourage students to create a pollution consciousness-raising song.

In addition, cross-curricular references encourage the development of transferable skills, that is, abilities which are applied in different subjects. This is the case of reading skills, formulating hypothesis or writing efficient notes. For this reason, it seems appropriate that textbooks suggest tasks into which several contents or skills are applied simultaneously in order to obtain a rich pedagogical output.

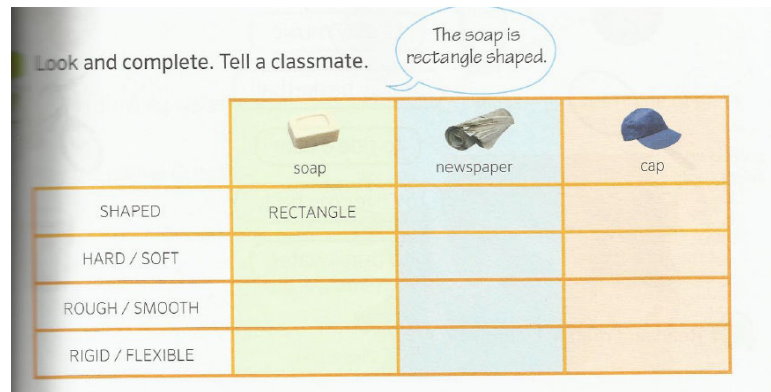
Cross-curricular references can be present in Science CLIL textbooks by suggesting issues which are considered in the curricula of different school subjects. This is the case of health, environmental and civic education. In the following picture, the CLIL Science textbook's table of contents details the cross-curricular issues which will be developed throughout each unit.

Cross-curricular Issues	
	<ul style="list-style-type: none">• Health Education.• Education for Equality.
	<ul style="list-style-type: none">• Health Education.
	<ul style="list-style-type: none">• Environmental Education.
	<ul style="list-style-type: none">• Environmental Education.
n.	<ul style="list-style-type: none">• Environmental Education.
ssing	<ul style="list-style-type: none">• Environmental Education.

Picture 10. Science 2. Anaya. Page 5

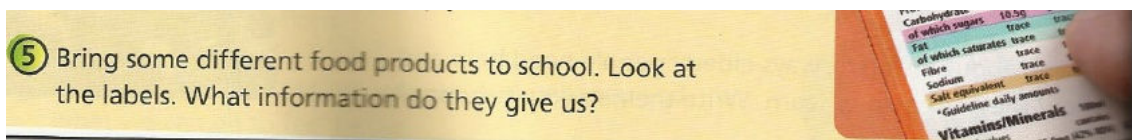
Cross-curricular elements can also be present in CLIL textbooks in the shape of tasks that go beyond the boundaries of independent subjects. For instance, when working on the description of materials, different types of tables can be employed for displaying the

information. Although tables and grids are contents generally linked to the Math curriculum, they are also pertinent in the Science subject



Picture 11. Natural Science 1. Savia. SM. Page 87

Likewise in picture 11, below we can find an activity which employs figures and measuring units to accomplish a Natural Science task.



Picture 12. Natural Science 3. By me. Ediciones Bilingües S. L. Page. 27

In short, activities aiming at employing skills or knowledge which are transferable from other school subjects seem to be an efficient tool for enriching learning. They do not only bring the opportunity to consider issues from a wider perspective but also they promote reinforcement and revision and foster cohesion among school subjects.

Content	Proposed checklist descriptor
5. The textbook offers opportunities for cross-curricular content to be addressed.	

5.1.VARIETY IN THE PROPOSED LEARNING SITUATIONS.

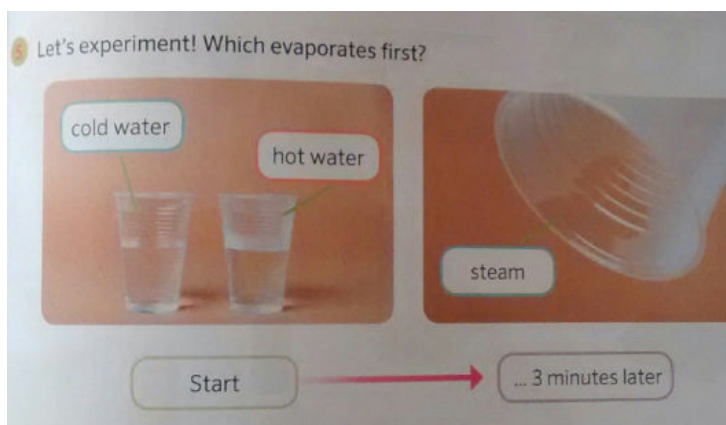
One of CLIL’s distinctive features is its student-centered conception of the teaching-learning process, in accordance with its constructivist essence. This idea is reflected on this approach’s strategy of exposing learners to rich educational situations, namely contexts in which necessary and interesting knowledge is applied for carrying out tasks. (Coyle, Holmes and Kings 2009: 21).

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Many textbooks are criticized for presenting unappealing units and activities which only ask for ready-made answers or do not pose excessive cognitive challenge. A CLIL textbook must include an assortment of enriching learning opportunities in the form of purposeful activities. In other words, enriching learning opportunities entails that textbook activities should be aimed at discovering different aspects of content. Purposeful activities, on the other hand, are defined as activities which can bring students to the view that what they are doing is interesting, profitable and usable in their future.

In the field of Science, empirical tasks and experiences, which appear in the methodological guidelines that BOPA 82/2014 proposes for Natural Science, become an opportunity both to access subject content and to apply the scientific method.

In picture 13 we can observe an experiment on water evaporation which provides students with an opportunity to develop science skills by observing phenomena, formulating hypotheses or predicting results instead of just acquiring that content through verbal explanation. In other words, the content acquisition is not an outcome of content transmission. It is the experience which stimulates the learning.



Picture 13. Natural Science 1. SM Savia. Page 91

Content

Proposed checklist descriptor

6. The textbook offers varied educational situations such as experiments to facilitate content acquisition.

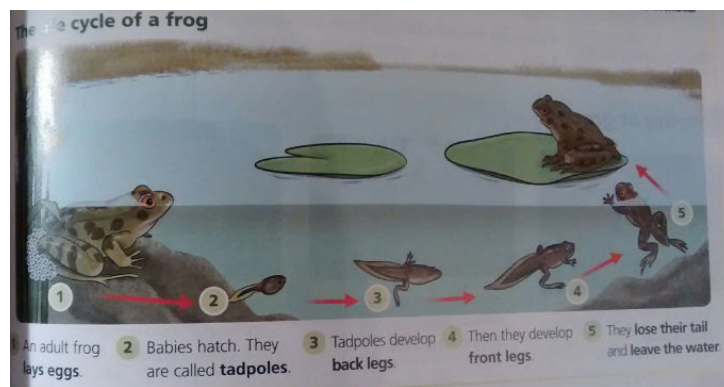
6.1. MULTIMODAL INPUT.

CLIL textbooks need to offer content-transmission strategies that respond to the complexity of means through which content is conveyed in students' lives. Although content is usually

presented through textual elements in textbooks, visual forms such as graphs, diagrams and pictures are desirable. It is necessary to highlight that students deal daily with visual and mixed elements in their lives, from traffic signals to public transport schedules and cinema listings, and therefore it seems pertinent that they develop skills on this means of accessing content too. Whilst visual examples are usually conceived of as visual aids to help the student understand the knowledge that the text provides, they also have potential value to transfer content on their own, as pictures 14 and 15 illustrate. Thus, these different strategies for presenting content are an added value for a CLIL textbook.



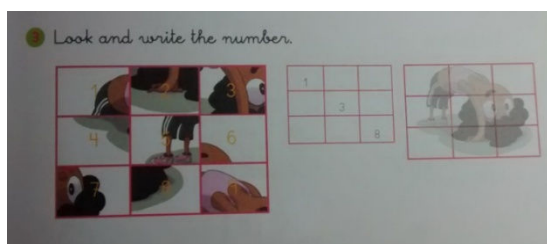
Picture 14.. Science 6. Anaya. Page 134



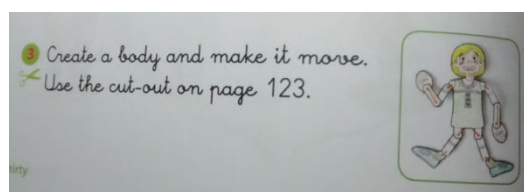
Picture 15. Natural Science 3. By me. Ediciones Bilingües S.L. Page 73

Allowing students with different learning styles to acquire a specific content is another advantage of considering both textual and visual elements for content-transmission. By diversifying the input channels, we are increasing the opportunities for students to develop understanding. The idea of many different learning styles coexisting in the same classroom poses a challenge for teachers. As Marsh explains, “schools find it very difficult to accommodate different learning styles because they need to standardize what and how subjects are taught to suit the learning profile image of the up to 30 youngsters sitting in each

class" (2000 : 5). One strategy for adapting the teaching-learning process to different learning styles is providing rich multimodal input (Ikeda, 2012: 31). An appropriate CLIL textbook will need to achieve content transmission through textual and visual elements, so that content becomes accessible to every child. Although the linguistic intelligence tends naturally to prevail, CLIL textbooks need to provide learners with opportunities to develop their logical/mathematical, spatial, bodily-kinesthetic and musical intelligence.



Picture 16. Natural Science. SM Savia (2014). Page 29



Picture 17. Natural Science. SM Savia (2014). Page 30

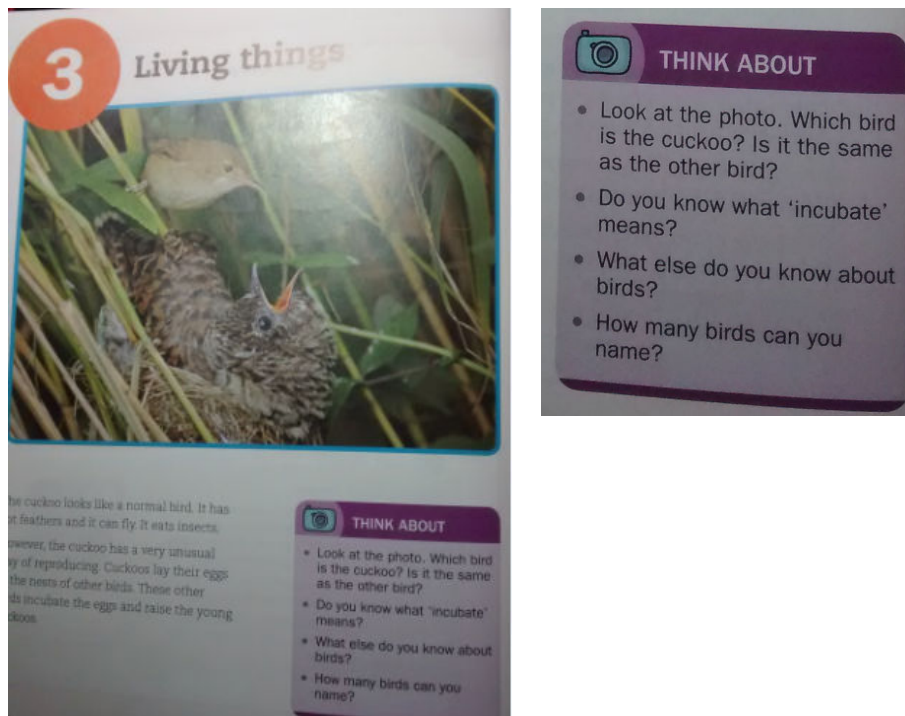
Picture 16 is an example of activity which fosters spatial intelligence. Students are asked to create the same picture as in the example on the right part of the page by rearranging the squares in the correct order. It requires students to create a mental picture and reveals whether students are able to perceive visual details. In the case of picture 17, which promotes the bodily-kinesthetic intelligence, students must evidence hand-eye coordination.

Content	Proposed checklist descriptor
7.	The textbook includes multimodal input to address the visual, aural, tactile and kinesthetic modes of learning.

7.1. PRIOR KNOWLEDGE.

Oliver Meyer(2010: 13) states that "subject learning through a foreign language works best when new topics are presented in such a way that the affective filters of the students remain wide open and when students can link new input to prior knowledge, experiences and attitudes". Discovering what the students already know about a specific content is a strategy which CLIL textbooks should employ, as it permits not only that students get ready for learning, but also assist the teacher in adjusting his/her expectations and teaching programme to suit the students' level. For this reason, a good CLIL textbook should include activities encouraging student to focus on the unit theme and getting them to examine what they already know about it.

Picture 18 below shows an example of activity aiming at activating students' prior knowledge.



Picture 18. Top Science (2011). Page 31

In this unit, students will be learning about living things. Thus, the textbook employs the description of a bird to present the aspects that students will discover about living things: physical appearance, diet, movement and reproduction. The questions which the textbook suggest look into students' knowledge on content (questions 1, 3 and 4) and vocabulary (question 2).

Content	Proposed checklist descriptor
	8. The textbook offers opportunities for students to build on prior knowledge.

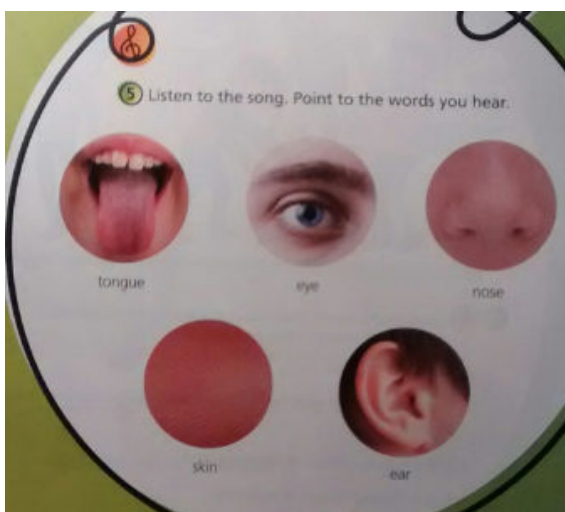
8.1. PRODUCING OBSERVABLE OUTCOMES.

The last item in the content section of the checklist focuses on the necessity to check students' understanding regularly. It is necessary to highlight that learners have limited production skills, and cannot always evidence their acquisition of content verbally. Therefore, observable actions must be elicited instead.

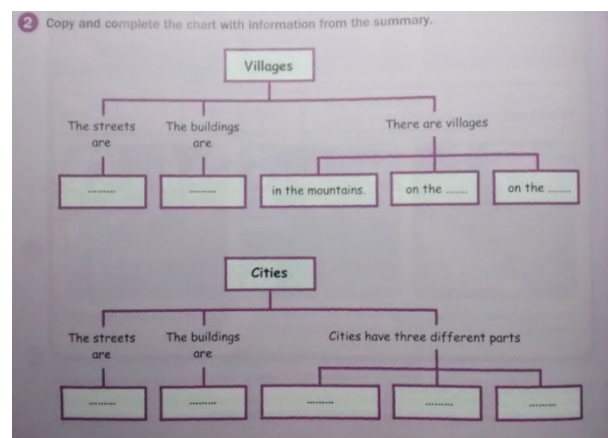
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A textbook can assist the educator in this process by offering activities that involve using the content in a wide variety of forms. As an example, tasks requiring students to classify, match, describe or arrange elements in order can be extremely helpful.

Picture 19 shows an activity which does not allow the teacher to extract evidence of the students' content-acquisition process. This kind of activity does not appear to be useful for large groups of students, as the educator will need to invest a great amount of time in checking the students' understanding individually. As opposed to picture 19, picture 20 shows an activity where the students' knowledge is evidenced, as he/she is required to produce an outcome (a diagram) which can be checked by the educator.



Picture 19. Natural Science 3. By me. Ediciones Bilingües S.L. Page 7



Picture 20. Top Science 3 (2011). Richmond Santillana. Page 134

Content

Proposed checklist descriptor

9. The textbook promotes activities aimed at the production of observable outcomes.

CHAPTER 4

CLIL EVALUATION CRITERIA: COGNITION

The acquisition of knowledge is intimately connected with comprehension. CLIL cannot be understood without the cognition dimension. Some authors such as Baker even conceive cognition as the fifth skill after listening, reading, writing and speaking in EFL settings (quoted in Coyle, 2008: 554).

Initially, it is necessary to examine what thinking skills are. According to Santo-Tomás and Dafouz, “the term refers to the human capacity to think in conscious ways to achieve certain purposes” (2011: 21-22). That is, mental processes as diverse as questioning, repeating, remembering, making decisions or solving problems.

In the teaching-learning process of a CLIL student, a lack of balance between the student’s linguistic and cognitive levels is to be expected. Thus, CLIL learners are likely to experience linguistic limitations that slow down the learning process.

4.1. COGNITIVE DEMANDS.

The relationship between language and cognitive development is one of the most controversial issues concerning CLIL, since it is difficult to justify pedagogically undemanding tasks below the students’ cognitive level. Coyle suggests progression as the key element for fulfilling both CLIL’s demands on linguistic and cognitive development (2008: 554). This author made an interesting contribution to this issue with the CLIL’s Matrix (2008), an adaptation of the Cummins’ matrix¹² (1984) for ESL teaching.

¹² Cummins devised a model for arranging tasks according to difficulty along one continuum from cognitively undemanding to cognitively demanding and another continuum from context-embedded to context-reduced.

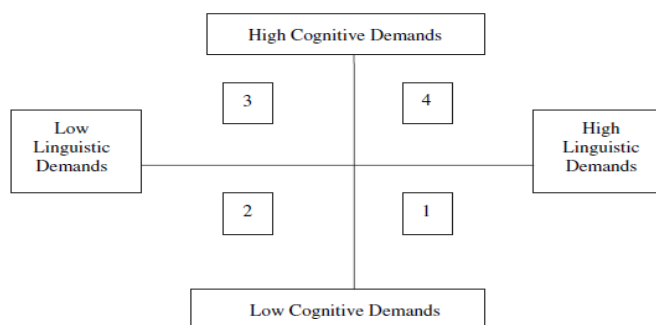


Figure 3. CLIL matrix diagram. Extracted from Coyle (2008: 555).

The underlying philosophy that figure 3 evidences is that learners with a low linguistic competence of the foreign language need to develop their cognitive skills by accessing high-demand content through low-demand language. The goal in terms of language is to facilitate student access to quadrants requiring a progressively higher linguistic level with lower context support.¹³ However, concerning cognition, progression needs to be ensured, even if the language employed does not seem to match the content’s cognitive level. It is necessary to remember that CLIL subjects need to fulfill curriculum requirements which are not designed specifically for this approach. These requirements cover aspects such as content and cognitive development, and do not promote foreign language improvement. This issue suggests that currently, it is cognitive progression that plays a greater role, even if it is at the expense of linguistic development.

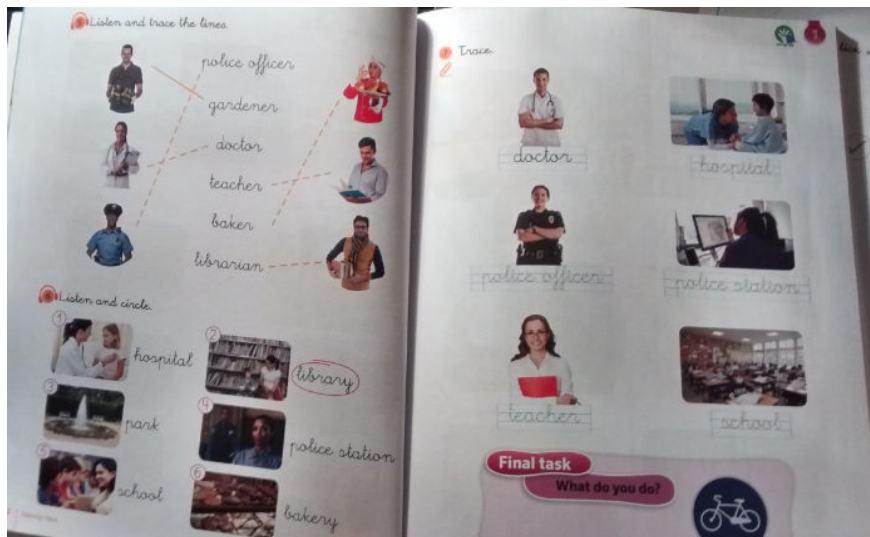
Cognition	Proposed checklist descriptor
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10. The textbook is cognitively demanding for the target students.
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4.2. LANGUAGE FACILITATING COGNITIVE PROGRESSION.

Some textbooks, especially those which are designed for the first cycle of Primary Education, tend to be focused on vocabulary acquisition and the development of writing skills, leaving reflective and cognitive challenge aside. In the case of the activities displayed on picture 21, we observe that the textbook gives listening and tracing a prevailing role but it does not include opportunities to promote students’ reflection.

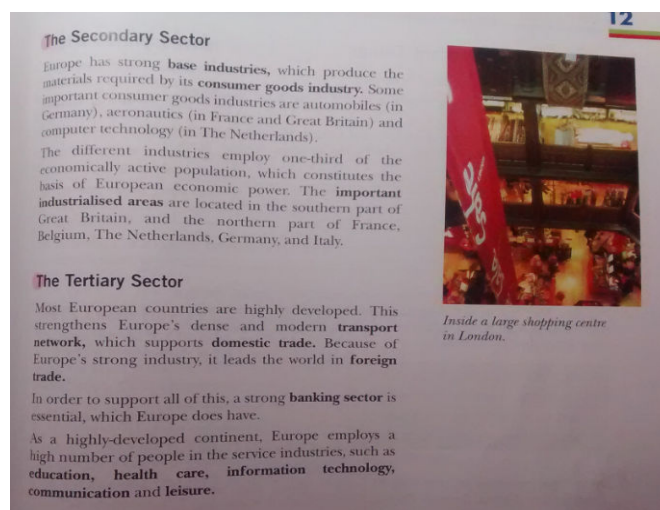
¹³ Quadrant I High context, low cognitive demand (easiest)
 Quadrant II Low context, low cognitive demand (harder)
 Quadrant III High context, high cognitive demand (harder)
 Quadrant IV Low context, high cognitive demand (hardest of all)



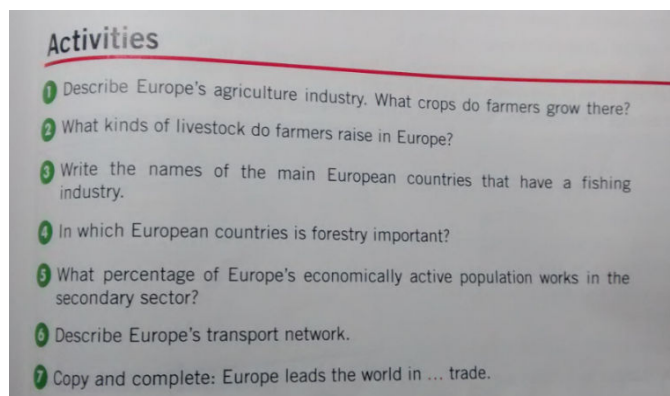
Picture 21. Social Science 1. SM Savia. Page 22-23.

In chapter 1 we discussed the necessity to conceive CLIL textbooks as different than a translated and simplified version of their Spanish-language counterparts. In fact, they should be oriented towards avoiding the linguistic barriers that make content difficult to access and reduce acquisition levels. An appropriate CLIL textbook should adjust its linguistic level to allow students completing tasks that require employing thinking skills.

Picture 22 shows an example of content transmission through a linguistically complex text. This example is extracted from a textbook for students in 6th grade of Primary Education. The use of the passive voice, unfamiliar nouns and varied grammatical structures seem to exceed the target students' linguistic level. The activities which the textbook suggests in this page do not seek to promote students' thinking and understanding. What they try to do is to test students' reading comprehension skills. All that students need to do to complete the activities is to extract specific pieces of information from the text. Therefore, no cognitive progression is promoted.



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Picture 22.Science 6. Anaya English. Page 135

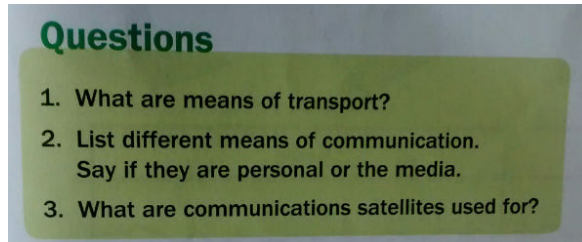
Cognition	Proposed checklist descriptor
11. The textbook is well adjusted linguistically to facilitate cognitive progression (i.e. it fits the students expected level or is slightly above it).	

It is necessary to bear in mind that quadrant one, which was originally given the name of “frustration zone” by Cummins, is not appropriate for Primary Education level; English acquisition in this educational stage is focused on the learning of basic contents oriented towards communication and therefore contents are not characterised by high linguistic demands. Quadrant two, also known as “boredom zone”, is not pedagogically reasonable; it will not be educationally enriching for learners to carry out tasks which require undemanding processes. Activities should aim at promoting cognition so that they can be considered effective for the teaching-learning process. However, cognitively undemanding activities are not to be completely discarded, as they can also make a positive contribution: they can offer opportunities for students to build confidence. Cummins in Shoebottom (n.d: n.p.) highlighted their potential value as starters but argued that “teachers should switch soon to tasks that engage the students’ brains, making these tasks accessible”.

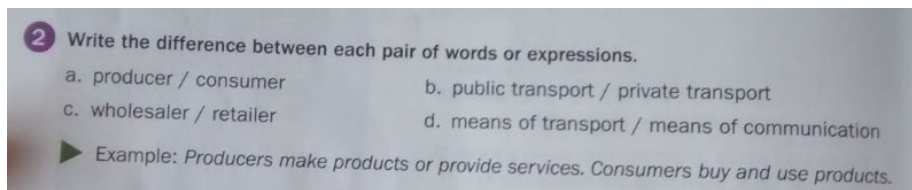
Consequently, although lower order thinking skills are to be considered, an appropriate CLIL textbook will mainly find its frame in quadrants three and four, this is with high cognitive demands. Considering the difference between these two quadrants, which essentially consists in the increased linguistic demands, the target of the teaching learning process, and consequently of the material, is to evolve from activities requiring low linguistic competence (quadrant three) to higher linguistic demands (quadrant four).

Pictures 23 and 24 show two activities into which it is possible to observe a progression of linguistic demands. Linguistic challenge increases significantly from picture 23, where

students essentially need to define or name, to the activity displayed in picture 24, in which students are asked to compare concepts.



Picture 23. Top Science 3. Richmond Publishing and Santillana. Page 155



Picture 24. Top Science 3. Richmond Publishing and Santillana. Page 156

Cognition	Proposed checklist descriptor
	12. The textbook presents a cognitive progression in its content and activities.

4.3. METACOGNITION.

Identifying the key thinking skills has received much of researchers' attention historically. However, it is important to highlight the contribution made by Benjamin Bloom's Taxonomy (1956). Bloom established a six-element hierarchical taxonomy seeking the principle of progression from low to high order thinking skills. This formulation has been employed extensively in Education to explain the teaching goals to be achieved along the process. According to this author, certain processes are linked to low-order thinking skills (LOTS) such as remembering, analyzing and applying; and others are related to higher order thinking skills (HOTS); such as analyzing, summarizing and evaluating. This taxonomy was recently revised by Anderson and Krathwohl (2001), who introduced structural and terminological changes (Santo-Tomás and Dafouz, 2011: 24). This revised taxonomy has been extensively used for curriculum planning and evaluation.

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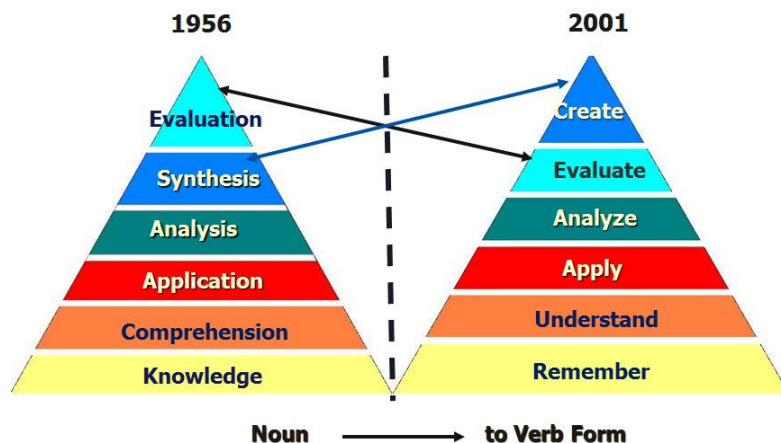
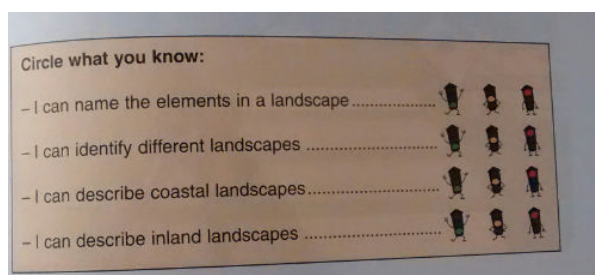


Figure 4. Bloom's vs. Andersen & Krathwohl's taxonomy. Extracted from Owen (2001: n.p.)

However, one of this revision's major contributions was the inclusion of metacognition as an additional level of knowledge. Metacognition can be defined as "the awareness and knowledge of one's cognition" (Owen 2001: n.p.). It refers to the knowledge, awareness and control of the learning process. In other words, it is not only necessary to ensure that students improve their cognitive skills, but also to make them aware that they play a major role in controlling their own learning. By doing this we are also orienting the students towards learning autonomy, therefore developing the key competence of learning to learn.

In this respect, Coyle (n.d. : 9) affirms that "content matter is not only about acquiring knowledge and skills, it is about the learner creating their own knowledge and understanding and developing skills". Thus, a CLIL textbook needs to create spaces for explicit reflection on the learning process.



Picture 25. Sience 2. Anaya. Page 79

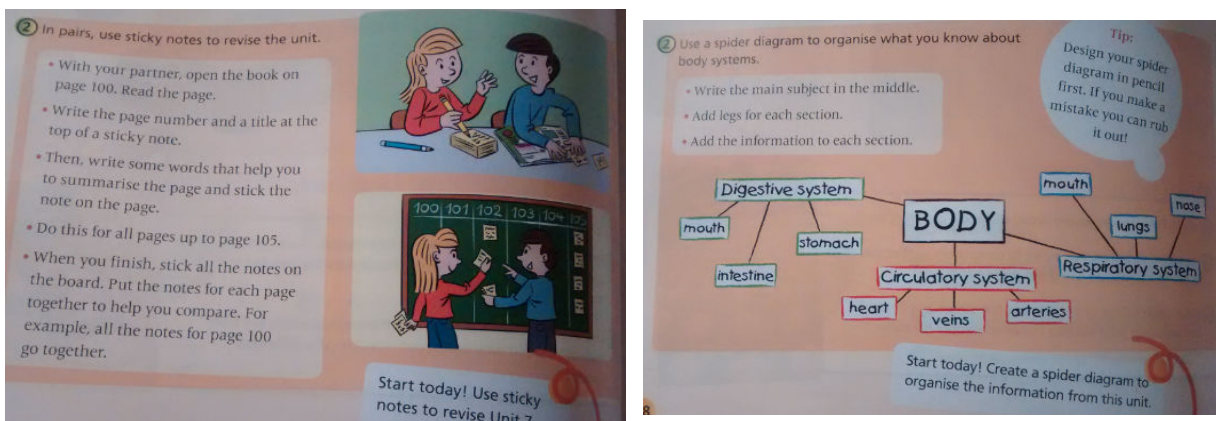
In picture 25 we can observe an example of activity which motivates a reflection on the students' learning process. This self-assessment task encourages students to check their own content-acquisition at the end of a learning unit. It permits students to check whether the learning goals have been met or they need additional study on the topic.

Cognition	Proposed checklist descriptor
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13. The textbook provides opportunities for the students to reflect on their own learning process.

4.4. DEVELOPING STUDY SKILLS.

Ediciones Bilingües S. L. Natural Science textbook is an example of textbook which attempts to foster metacognitive skills. It is clearly concerned with providing students with a set of learning strategies, from spider diagrams to classification tables and sticky notes, so that they can select the appropriate one in each context. Thus, the textbook includes a section for developing study skills in every unit, explicitly explaining how to employ the learning strategy and providing an opportunity to apply it. Pictures 26 show several examples of this:



Picture 26. Natural Science 3. By me. Ediciones Bilingües S.L. Page 18 and 108

Cognition	Proposed checklist descriptor
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14. The textbook provides students with study strategies.

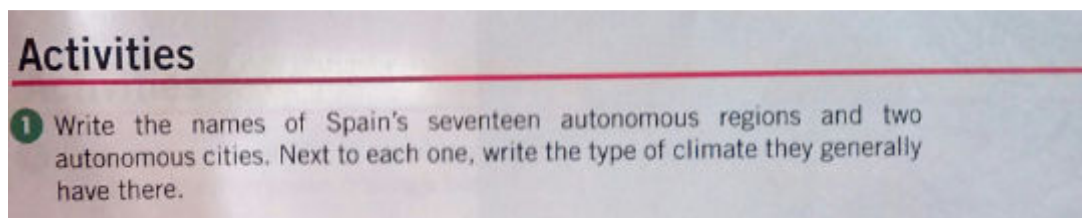
4.5. HIGHER ORDER THINKING SKILLS (HOTS) AND LOWER ORDER THINKING SKILLS (LOTS).

In a recent study, Oliver Meyer revealed that most of teachers' questions, as well as the most frequent tasks that they require their students to carry out are stuck at the level of low order thinking skills; this is factual knowledge according to Bloom, and remembering, understanding and applying in terms of Anderson and Krathwohl. In the field of CLIL textbooks, a recent study

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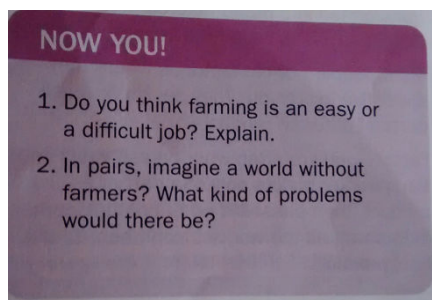
conducted by Mercedes Santo-Tomás (2011) evidenced that most of the activities proposed on a set of CLIL Science textbooks only required lower order thinking skills.

Picture 27 is an example of activity in which only lower order thinking skills are required. Students only need to extract this information from the upper text that precedes the activity.



Picture 27. Science 6 (2006). Anaya. Page 105

By contrast, higher order thinking skills are employed for both activities in picture 28, as students need to formulate hypotheses, reflect on consequences and analyze the situation before designing an appropriate solution to the problem. Thus, the answer for the activities needs to be created through a cognitive process. In other words, it is not ready-made.



Picture 28. Top Science 3. Richmond Publishing and Santillana. Page 141

Stemming from Meyer and Santo-Tomás' findings it is desirable that a CLIL textbook includes a balanced number of activities aiming at the employment of both HOTS and LOTS.

Cognition	Proposed checklist descriptor
	15. The textbook suggests activities into which both high order thinking skills (HOTS) and low order thinking skills (LOTS) are promoted.

4.6. SCAFFOLDING THE COGNITIVE PROCESS.

The aids provided by the context are determinant to understand how higher order thinking skills can be employed by young students with limited ESL command. The fact that tasks are oriented towards high cognitive demands must not be taken as an impossible obstacle since

cognitive challenge can be significantly reduced by increasing context-based support: what in cognitive theory is known as scaffolding.

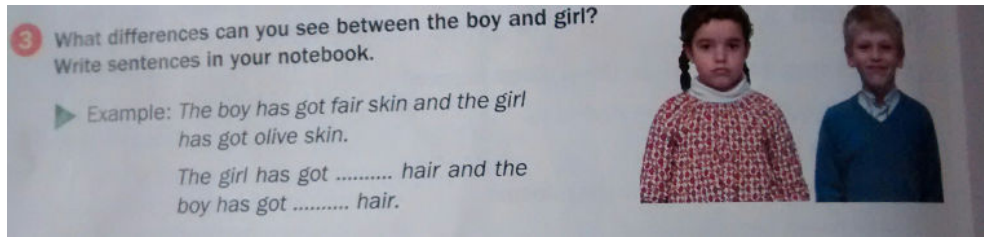
Scaffolding can be defined as the temporary but essential support that learners receive in order to accomplish a task for which they are not yet prepared. (Maybin, Mercer and Stierer, 1992). Gerakopoulou defines it as “the assistance and support offered by the tutor to the child when he encounters new teaching material”. (2011: 13). Originally, this concept was devised by Bruner (1985) under the influence of Vygotski’s theories concerning the social aspect of learning. Bruner’s description is illuminating:

If a child is enabled to advance by being under the tutelage of an adult or a more competent peer, then the tutor or the aiding peer serves [the learner] [...]until such a time as the learner is able to master his own action through his own consciousness and control. (1985: 24-25).

Accordingly, CLIL textbooks will need to provide a significant number of aids to support the students’ cognitive development. Concerning the types of cognitive scaffolding that a textbook can contain, Lewis (2006) considered the following ones as effective strategies for the teaching-learning process:

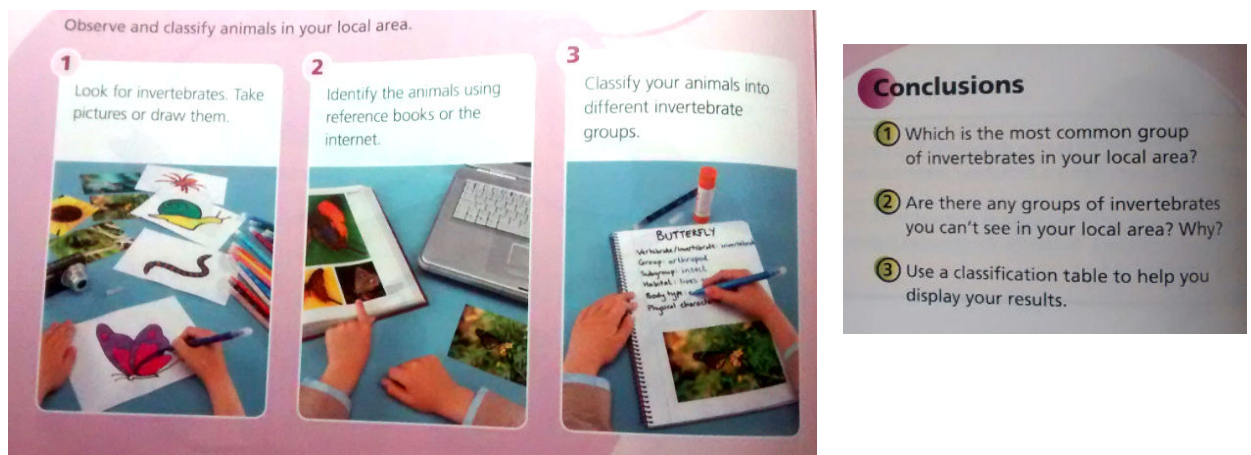
- Providing glossaries: this strategy can be considered for core concepts that are unfamiliar to students. Richmond Publishing and Santillana employ this strategy in their *Top Science 3* proposal.
- Supplying guides for taking notes: this element allows students to focus on the main idea of a concept and therefore is appropriate for structuring reflective processes. *Natural Science 3* by Ediciones Bilingües S.L provides this type of scaffolding.
- Providing visuals: use of graphics for arranging new information and facilitating its acquisition. Most textbooks include them.
- Presenting new vocabulary items before its employment in reading and activities. We can see this strategy in *Top Science 3* by Richmond and Santillana.
- Providing students with examples of expected answers. Activities that require full sentences, predictably above students’ linguistic level, usually include this aid. In picture 29 we can observe an exercise which provides a full example of the task and an example providing less information. This second example evidences a certain progression, as the textbook has already removed several elements from it. Then, students are expected to carry out the task by imitating the structure provided.

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Picture 29. Top Science 3. Richmond Publishing and Santillana. Page 14

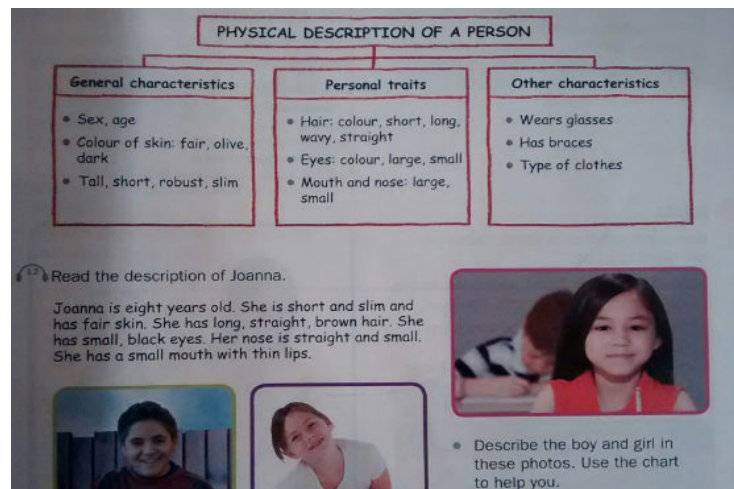
- Break down activities into steps: lowering the difficulty of activities by increasing the number of steps, including intermediate processes that are traditionally expected to only occur in students' minds. Picture 30 below is an example of a set of activities which includes intermediate steps before providing the learning outcome (activity in conclusions), since they encourage students to reflect on the elements that will be represented in the classification table (activities 1, 2 and 3) in order to achieve the activity's goal: to discover the variety of invertebrates present in the students' local area.



Picture 30. Natural Science 3. Ediciones Bilingües S.L. Page 88

Linguistic scaffolding is another type of support which textbooks include to deal with the issue of linguistic difficulty and cognitive development. Essentially, linguistic scaffolding consists on providing the student with linguistic aids so that they can carry out tasks without lowering the teacher's cognitive expectations. That is; employing a language which the learners can understand but still challenging thinking. Picture 31 shows an activity which provides linguistic scaffolding, as the textbook includes a chart in which descriptions of a person are structured and explained. Then, students are required to describe people. The

textbook does not expect the students to be ready to make descriptions according to those three criteria autonomously. Thus, it provides that diagram as a linguistic aid.



Picture 31. Top Science 3. Richmond Publishing and Santillana. Page 9

Cognition

Proposed checklist descriptor

16. The textbook provides sufficient and appropriate scaffolding for the development of cognitive processes.

CHAPTER 5

CLIL EVALUATION CRITERIA: COMMUNICATION

Among the four elements that form the basic dimensions of CLIL, communication in the foreign language can be considered as the core concept as it is the primary goal of language. For that reason, CLIL is more concerned with fluency than with grammatical accuracy (Coyle, 2008: 554). In other words, the CLIL approach, just like the LOE's methodological guidelines concerning ESL teaching, prioritizes communication over accuracy, as perfectly formed sentences are not entirely necessary for effective communication. In this respect, David Marsh states that students can be successful in communicating through a foreign language "even if their grammar is faulty, their knowledge of words is weak or their pronunciation is poor" (2000: 7). However, we do not mean that accuracy should not be considered an important element for the language learner. What we mean is that, in the feedback process, we should balance the benefit against the damage: there are some cases in which preserving fluency is more beneficial for communication than providing linguistic corrections to the students' interventions.

In the field of CLIL, it is necessary to promote foreign language acquisition both for communication and for learning. As it may be expected, teacher-student oral interactions in a CLIL setting will occur mainly in the foreign language, since the educator will tend to employ it for the instruction. In relation to student-student interactions in CLIL settings, it is necessary to say that more opportunities to use the target language in demanding and meaningful tasks emerge. Broadly, the employment of the students' mother tongue in the CLIL lessons is a controversial issue, as there are two diverging opinions: on the one hand, there are teachers who consider it acceptable to employ the students' L1 as a support for explanation (support function) and as a contributor to the students' lexicon and metalinguistic skills (learning function), whereas others state that students' L1 should be restricted as much as possible during instruction (Lasagabaster, 2013: n.p.).

5.1. SIMPLE AND ACCURATE LANGUAGE.

The role of language in a CLIL subject cannot be compared to that of the traditional foreign language subject, as they have different objectives. Coyle, Hood and Marsh (2010: 54) have suggested two major distinctions for delimiting this issue: learning to use language and using language to learn. Concerning the first one, the language subject has traditionally emphasized

progression in structures and vocabulary acquisition. However, CLIL is more concerned with “language using” as opposed to “language learning”, that is, aiming at fulfilling the communication and learning demands that emerge from the development of the content curriculum.

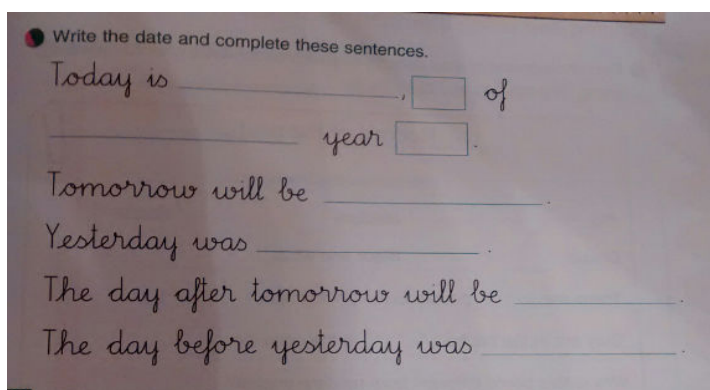
However, making the content linguistically accessible must not be done at the expense of grammatical correctness (Coyle, Hood and Marsh 2010: 55). Books should be avoided if they contain incorrect tenses or errors. If students need to use the past tense, for instance when reporting the results of research, they should be instructed at the appropriate level. This idea reveals that the ESL traditional sequence of grammatical concepts, from present simple to perfect tenses, is to be discarded in the CLIL approach. CLIL suggests a progression of linguistic contents based upon a more pragmatic approach to developing language through communication.

Communication

Proposed checklist descriptor

17. The textbook is written in an appropriately simple but entirely correct language.

The activity displayed on picture 32 is extracted from a from a 2nd-grade Science textbook. The proposed activity’s goal is that students are able to make temporal references, writing the current date as well as that of preceding and following days. Although such young students are normally not expected to employ the future and the past tense, the textbook provides students with authentic language through using the appropriate grammatical content for the task required.



Picture 32. Science 2. Anaya. Page 101

5.2. APPROPRIATE LINGUISTIC FUNCTIONS.

Coyle developed a language triptych in order to consider language holistically. This visual representation evidences that in a CLIL classroom three different types of language coexist: language **of** learning, language **for** learning and language **through** learning. The language triptych illustrates that the issue of language learning in a CLIL subject cannot be restricted to the mere acquisition of content-obligatory language (that is, key content vocabulary). Progression in form and functions is also to be ensured.

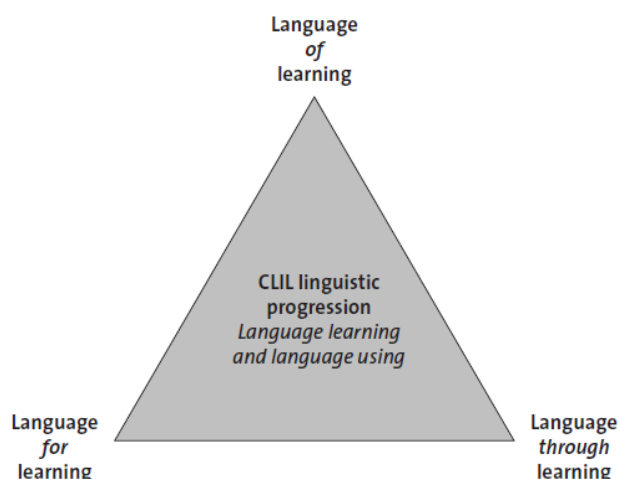
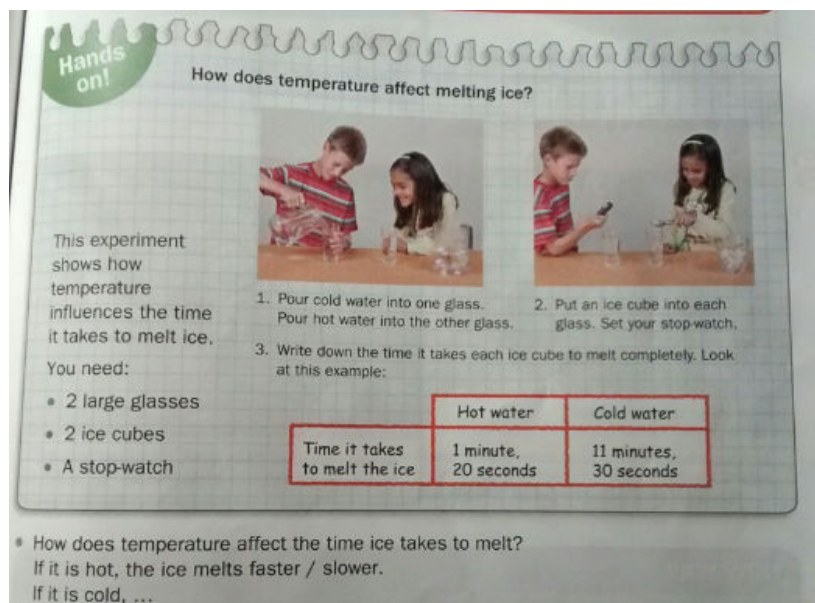


Figure 5. Language in CLIL. Extracted from Coyle, Hood and Marsh (2010.: 60)

Consequently, in a CLIL Science textbook for instance, both specific Science vocabulary and functions (i.e. report writing or carrying out laboratory experiments) need to be addressed in order to acquire the authentic “language of Science”. Coyle et al (2010: 59) explain that the “language of Science” includes both key items of specialized vocabulary (referred to as content-obligatory language) and understanding of language needed to operate successfully (summarized as content-compatible language).

Picture 33 is an example of what the following checklist item refers to. This activity essentially consists in conducting an experiment to determine under which conditions –hot water or cold water- the ice cube melts faster. Thus, the zero conditional is employed to describe a scientific fact: if the water is hot, the ice melts. It is appropriate that students learn this construction, as it is extensively used in this field for explaining facts which always happen under certain conditions. Its employment is also pertinent in this activity, since it permits students to draw conclusions from the experiment carried out.



Picture 33. Top Science 3. Richmond Publishing and Santillana. Page 91.

Communication

Proposed checklist descriptor

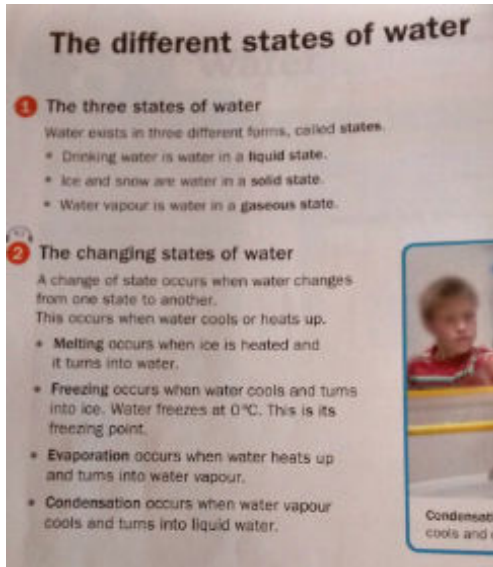
18. The textbook employs the appropriate linguistic functions for each task. (e.g.: defining, describing and hypothesizing).

The language of learning is composed by the knowledge that students need to acquire for the understanding of the content. It goes far beyond considering key thematic vocabulary items as it also includes situations in which that content is employed. (Coyle, Hood and Marsh, 2010: 61). For instance, when reporting the results of an experiment, students will need to know the correct structure and linguistic markers of a scientific report, including connectors and verb tenses. Thus, from the context into which the content is embedded several linguistic demands, from textual types to grammatical items will need to be addressed.

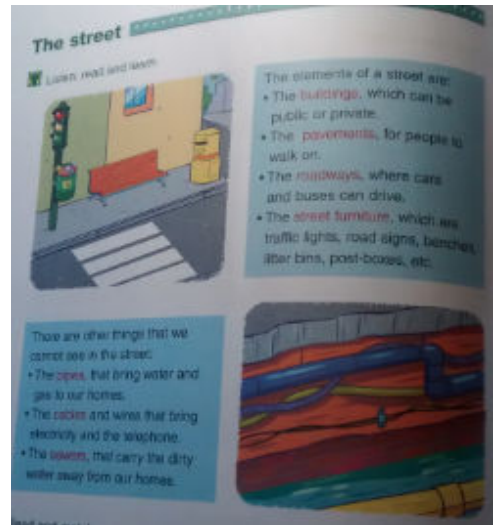
5.3. HIGHLIGHTING KEY VOCABULARY ITEMS.

The employment of a foreign language as the main means of instruction may be overwhelming for young learners. Students whose L2 command is limited must tackle page after page of English explanations. In this context, facilitating study should be imperative for every CLIL textbook. This could be done by highlighting essential elements. As pictures 34, 35 and 36 show, many publishing houses do this by using bold print and larger fonts, key concept charts or even selecting a different colour for core vocabulary items.

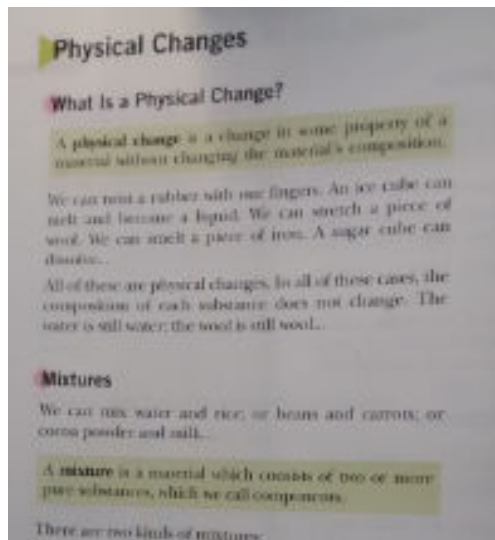
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Picture 34. Top Science 3. Richmond Publishing and Santillana. Page 90



Picture 35. Science 2. Anaya. Page 84



Picture 36. Science 6. Anaya. Page 54

Communication

Proposed checklist descriptor

19. The textbook highlights the core vocabulary items and phrases for each theme.

5.4. COMMUNICATIVE NEEDS PREDICTION AND LANGUAGE SUPPORT PROVISION.

The second element of the language triptych, namely language for learning, has been described as a major contributor to successful CLIL lessons. Essentially, it includes all the language that students will require in order to acquire knowledge. This can be as diverse as

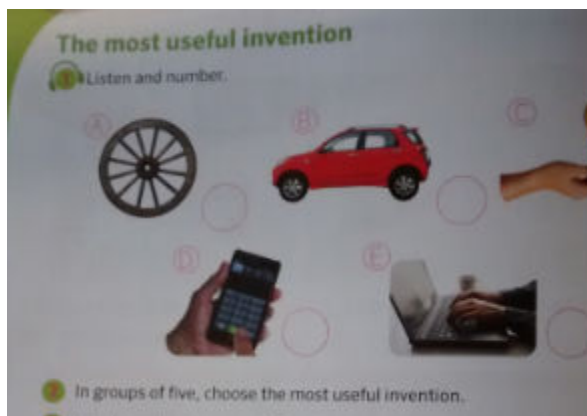
language that enables students to carry out research, argue and support their opinions or work cooperatively in groups. In other words, the language for learning aims at operating effectively in general learning situations.

In the teaching-learning process, not all the linguistic elements that will be required can be planned. Spontaneity also brings opportunities for unexpected linguistic and grammatical points to emerge naturally. Coyle calls this 'language through learning'. CLIL textbooks can –to a certain extent- predict which language issues will emerge from every task. Thus, their challenge is to prioritize and select language that will be relevant due to its importance for further teaching-learning. As an example, when dealing with the topic of healthy eating, students will spontaneously talk about their likes and dislikes. Additionally, learners will also have special interest in discovering where their favorite foods come from. The activity on picture 37 includes linguistic aids in anticipation of these communicative needs.



Picture 37. Natural Science 1. SM Savia. Page 43

However, the activity displayed in picture 38, which belongs to the same textbook for 1st grade of Primary Education, is an example of situation in which students may encounter communicative difficulties. Students are encouraged to select the most useful invention among the five pictures displayed in groups. However, they are not provided with any linguistic aids that will enable them to carry out the proposed task. One of the potential consequences of this omission is the employment of the students' mother tongue instead of the target language.



Picture 38. Natural Science 1. SM Savia. Page 110

Communication

Proposed checklist descriptor

20. The textbook predicts students' communicative necessities and provides the corresponding language support.

5.5. MAKING INTERACTIONS COMMUNICATIVE.

The previous selective criterion also stems from the fact that the student needs to build self-confidence in order to take certain risks when producing oral and written language. Appropriate language aids can transmit to the student the idea that success can be achieved, reducing his/her anxiety towards unknown vocabulary and structures. Therefore, the appropriate CLIL textbook needs to promote a stress-free environment where students feel capable of employing the language communicatively.

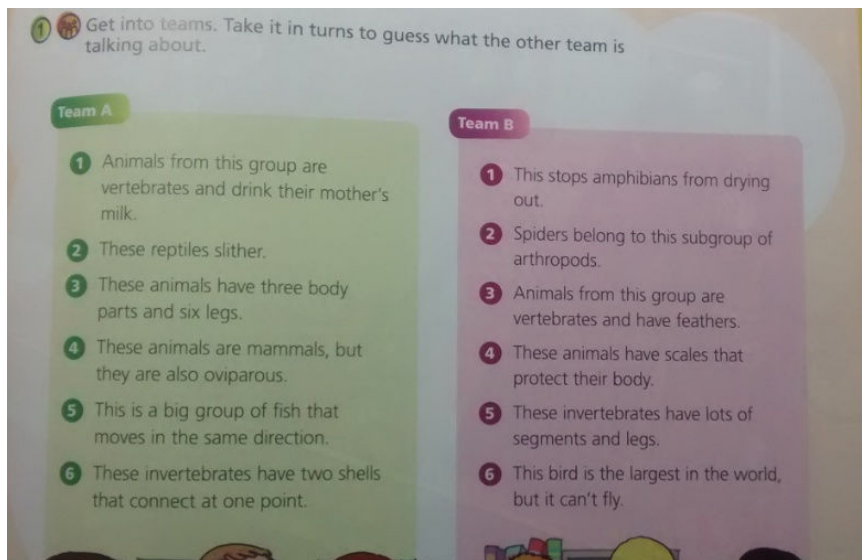
Long's Interaction Hypothesis (1996) suggests that the use of the target language in interactions facilitates the acquisition of the language. Likewise, Meyer (2010: 17) claims that "languages are acquired most successfully when they are learned for communicative purposes in meaningful and significant social situations". Essentially, providing situations where interactivity is strengthened, along with appropriate language support and a motivating context can foster students' oral interactions and therefore increase their learning opportunities significantly.

According to Meyer (2010: 17) real communication among students only takes place when there is a communicative gap, that is, when communication becomes meaningful due to a certain void in knowledge that needs to be filled. Three different types of communicative gap

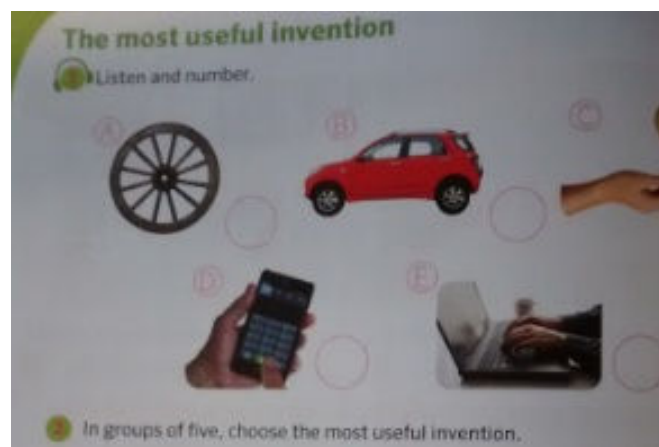
have been identified: information gap, which consists in transferring knowledge from one student to another or translating information into a different form to access knowledge (for instance from a text to a grid); reasoning gap, where the students' cognitive skills need to come to a concrete solution; and an opinion gap, which includes individuals' personal opinions.

Thus, suggesting a pair or group activity is not enough to address communicative purposes. It is also necessary that a communicative gap is detected and addressed.

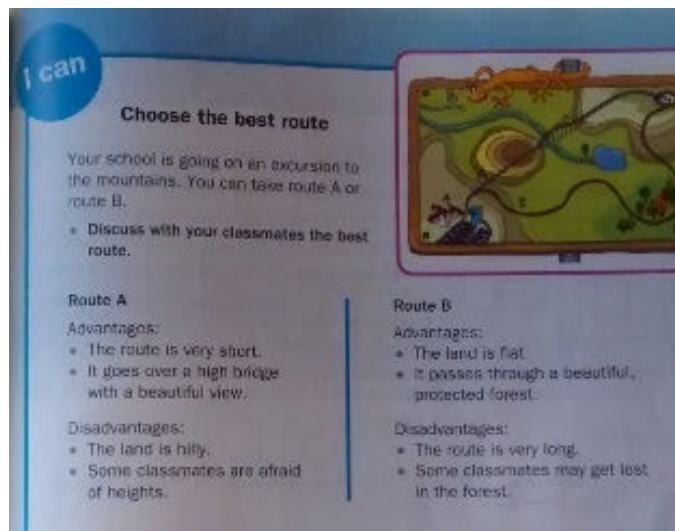
Pictures 39, 40 and 41 show an example of group work in which students' interactions become relevant due to specific information, reasoning and opinion gaps. Aiming at filling these gaps, students have a discussion in order to obtain the appropriate solution through cooperative reflection.



Picture 39. Natural Science 3. By me. Ediciones Bilingües S.L. Page 95



Picture 40. Natural Science 1. SM Savia. Page 110



Picture 41. Top Science 3. Richmond Publishing and Santillana.123

Communication

Proposed checklist descriptor

21. The textbook's activities create communicative gaps to allow students to use the language meaningfully.

5.6. VARIED GROUPINGS.

Nevertheless, CLIL has also been criticized on the grounds that most of the input is provided by the educator, resulting in teacher-led lessons where the students' amount of talking time is highly restricted. Dalton-Puffer (2007: 11) also highlights that students are listeners most of the time and explains that "simple arithmetic tells us that with 25 students in a class, if each has a say in a 50 minute lesson, their speaking time must be less than two minutes since the leader of the discussion also has to speak. It follows, by simple power of logic, that CLIL students are listeners most of the times".

However, cooperative learning (a methodology in which children work together to accomplish a shared goal) has been found to be effective in increasing the students' opportunities of conducting conversations. When students are divided into groups, the language becomes meaningful as they need to understand and be understood (Casal, 2008: n.p). Those groups also need to be of different types and will probably require adapting the seating arrangement to suit the specific needs of every task.

In other terms, variation of the grouping arrangements may be a suitable solution to increase the learners' opportunities to employ the foreign language communicatively. Besides,

as it was mentioned above, different learning styles tend to coexist in a CLIL lesson. For that reason, it is necessary that different group arrangements are employed so that all the students benefit from an opportunity to access knowledge, applying their personal learning styles to the teaching-learning process.

Communication

Proposed checklist descriptor

22. The textbook includes activities to be carried out in different groupings (individual, pair work, small groups and whole class).

CHAPTER 6

CLIL EVALUATION CRITERIA: CULTURE

Culture, the so-called “forgotten C” must be highlighted due to its potential value to enrich learning situations. It is a difficult concept to delimit, as it touches most aspects in life. Numerous attempts have been made to come to an appropriate definition on culture. Liddicoat et al (2003: 45) define culture as “a complex system of concepts, attitudes, values, beliefs, conventions, behaviours, practices, rituals and lifestyles of the people who make up a cultural group, as well as the artefacts they produce and the institutions they create”. However, John H. Bodley’s definition (1994 cited in Frank, 2013: 3) may be one of the most suitable ones, as it addresses the term in a wider sense as “what people think, make, and do.”

Cultural contents have an extensive tradition in foreign language learning syllabuses. The reason for this is that there is an interdependent relationship between culture and language (Ho, 2009: n.p). From the British-centric approach of the old days, when students would learn what ‘tea time’ implied, to nowadays when expressions are borrowed from American TV shows, culture is part of language. Coyle considers that culture’s rightful place is at the core of CLIL (2008: 10). Cultural awareness is said to be composed by “the gradual developing of the inner sense of the equality of cultures, an increased understanding of [the students’] own and other people’s cultures, and a positive interest in how cultures both connect and differ” (Tomlinson, Masuhara, 2004: 3). Although culture can be overwhelmingly broad, it contributes to enriching the foreign language acquisition process by covering an aspect which other elements such as grammar and vocabulary do not develop: the human dimension of languages.

6.1. RAISING INTERCULTURAL AWARENESS.

Nowadays our societies are defined by multiculturalism. This feature requires a positive attitude towards coexistence with other cultures on the part of students, resulting in the awareness and acceptance of their own identities and that of others. In this respect, Coyle, Hood and Marsh (2010: 54-55) consider that the understanding of the concept of otherness is a major contributor to a deeper understanding of “self”. In short, incorporating cultural diversity into CLIL lessons is essential to broaden students’ perspective and to deepen their cultural awareness.

Consequently, in a CLIL setting, intercultural references relating the content curriculum to what actually happens in other communities, countries or societies need to be promoted. This may occur in textbooks approaching the subject content through a cultural aspect which provides meaningfulness to it. Coyle, Hood and Marsh (2010) developed several clarifying examples of topics tackling intercultural awareness while addressing the curriculum:

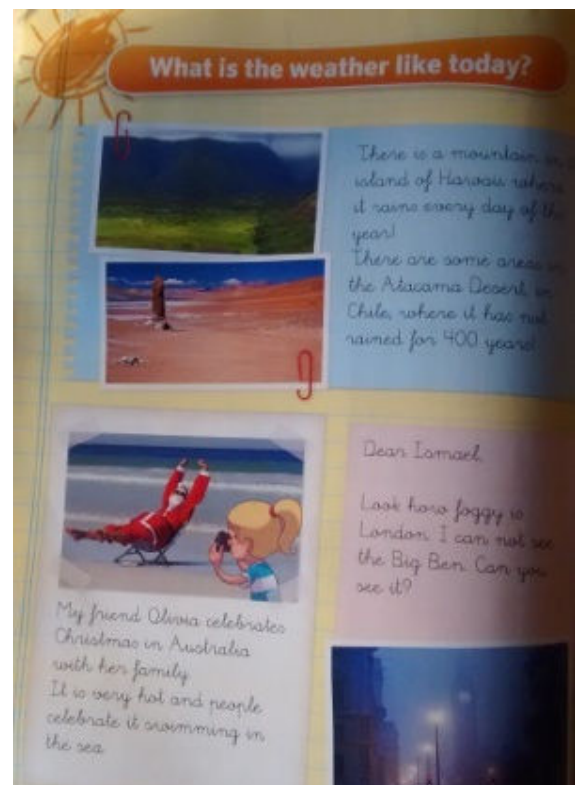
‘The bicycle as a means of transport across the world’ as a topic in a technology class; setting the context of the content in different cultures – for example, investigating patterns in Asian and European architecture in a mathematics or design class; discussing how learners in different cultures might approach the same content topic – for example, attitudes to recycling; or exploring and interpreting the curriculum as a global citizen (2010: 55).

Picture 42 shows an example in which intercultural content is added to a lesson on matter and energy. In this resource, students can discover how recycling is carried out in Norway. This may lead to an enriching discussion on how we recycle in Spain, leading students to a greater awareness of the procedures in their own country.

This strategy is also employed by the SM Social Science proposal. For instance, in picture 43 we see that, when covering the weather content, the students are presented with different areas of the world with diverse weather conditions.



Picture 42. Nora Around the World 1. SM Savia. Page 12



Picture 43. Ismael's diary 1. SM Savia. Page 6

However, these activities were taken from an attachment to the textbook, and not the textbook itself. In fact, most tasks aiming at promoting students' intercultural awareness are only present in the shape of auxiliary materials in this publishing house's design. This strategy reveals the idea that cultural contents will not be addressed in everyday lessons; at most that there will be specific and punctual moments for it. In other words, it evidences that culture is not integrated in the proposal. Cultural contents are not singled out because of their relevance but rather the opposite: they are expected to be used only "if we have time". Technically that moment is not frequent, as the curriculum –and the lack of time to cover all of its prescriptions– is always putting pressure on teachers.

It would be wrong to reduce CLIL culture to “the festivals and food” content, traditionally employed by EFL teachers to present identity features from foreign Anglo-Saxon countries. Employing Edward T. Hall’s (1976) “cultural iceberg” analogy, these cultural contents will only be looking at the “tip of the iceberg”. However, values and attitudes, also known as “deep culture”, which are equally important, are extremely difficult aspects to perceive by second-language learners.

Culture	Proposed checklist descriptor
	23. The textbook presents contents for promoting intercultural awareness at three levels: surface culture (food and specific holidays), sub-surface culture (notions of courtesy and body language) and deep culture (unconscious values and attitudes).

6.2.ADDRESSING CULTURE FROM DIFFERENT PERSPECTIVES.

Saumell (n.d.: 2) points at eleven aspects for arranging content through an intercultural perspective: food, clothing, recreation, government, education, language, religion, transportation, economy, environment and arts. Comparisons within these categories may be a suitable strategy to create new cultural knowledge in learners. By confronting the students' culture with a foreign one, students will have the opportunity to raise their cultural awareness as they look for similarities and differences. Byram and Planet (2000: 189) explain that “comparison makes the strange, the other familiar and makes the familiar, the self strange – and therefore easier to reconsider”. Thus, the challenge for CLIL textbooks would be to establish an enriching link between the curricular contents and other cultures, offering opportunities to promote a global understanding.

Culture	Proposed checklist descriptor
24. The textbook presents contents for promoting intercultural awareness at three levels: surface culture (food and specific holidays), sub-surface culture (notions of courtesy and body language) and deep culture (unconscious values and attitudes).	

6.3. RELEVANCE OF THE CULTURAL CONTENTS.

Nevertheless, opinions on what role culture should have are divided among educators. There is a growing movement against the fundamental role attributed to culture in Coyle's model. Some educators consider that squeezing culture into a lesson where the content does not require it should not be considered CLIL. A forum on cross-curricular teaching recently asked the question "What is the role of culture in CLIL methodology?" and these were some of the opinions expressed:

"It's a mistake to want to get culture into a CLIL lesson by hook or by crook. CLIL is mainly subject teaching in L2: the teacher's business is to teach the subject –make sure their kids get grades in maths or geography or whatever it is. That's crude but it's the truth." Anonymous (2010: n.p.).

"I think that culture is somewhat "forced" into the CLIL curriculum. Many teachers struggle to find a cultural point in anything (as photosynthesis), and it doesn't have [sic] any sense to do it". Anonymous (2010: n.p.).

The point is that cultural references should, above all, be relevant for the purpose of CLIL: to build, transform or present concepts through the foreign language.

Unit 11 from *Top Science 3* for instance deals with the content of villages and cities. It includes an intercultural activity (picture 44) that encourages students to communicate with foreign people in their neighbourhood. This enriches the content and gives it a more human dimension. In addition, it requires students to put themselves in the immigrants' shoes and reflect on the most distinctive features of their country. This activity is particularly useful in raising students' cultural awareness and contributes to a deeper understanding of the students' closest environment, which is the essence of the *Conocimiento del Medio, Natural, Social y Cultural* subject.



Picture 44. Top Science 3. Richmond Publishing and Santillana. Page 135

Culture	Proposed checklist descriptor
25. The textbook’s cultural references are pertinent (not forced) for content acquisition.	

6.4. THE THREE LEVELS OF INTERCULTURAL EDUCATION: THE STUDENTS’ CULTURE, THE FOREIGN CULTURE AND GLOBAL/UNIVERSAL CULTURE.

Hallet (1997) developed a model for acquiring intercultural competence. It was called “the bilingual triangle” and it essentially consists in raising students’ cultural awareness on three main levels: facts and phenomena about the students’ own country and culture, facts and phenomena about the foreign country, and the intercultural and global phenomena and facts.

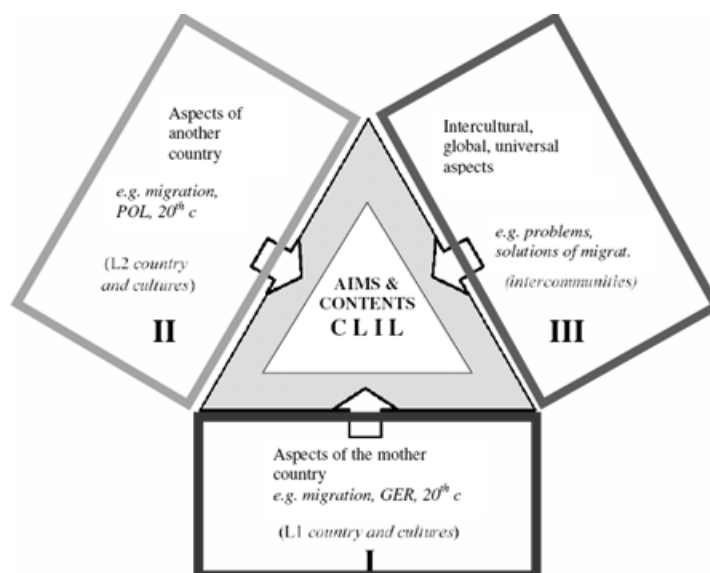


Figure 6. Hallett’s Bilingual Triangle Model (1997, p. 2)

Covering intercultural teaching holistically requires confronting students with specific aspects of individual cultures as well as universal perspectives in our globalized world. In this

respect, CLIL textbooks should include cultural themes on the three dimensions in order to promote global understanding and raise cultural awareness.

Culture	Proposed checklist descriptor
26. The textbook offers a perspective on the three levels of intercultural education: the students' culture, the foreign culture and global/universal culture.	

6.5. REFERENCES TO THE STUDENTS' CLOSEST ENVIRONMENT.

At this point we need to remember that helping the learner to discover their closest environment is the essence of *Conocimiento del Medio, Ciencias Naturales and Ciencias Sociales*. Developing knowledge of the main elements of the Asturian environment is emphasised within the Primary Education standards (BOPA 82/2014: 12).

Several publishing houses have developed a strategy for responding to the cultural differences within the Spanish territory: differentiated textbooks for each autonomous community with the aim of including regional references. However, this strategy was actually developed for non CLIL *Conocimiento del Medio* textbooks. CLIL textbooks are far from this level of specificity in terms of culture, as they seem to be more concerned with intercultural communication than with instructing students about their own local culture. Still, CLIL textbooks should include opportunities for covering and reflecting on their regional cultural aspects, which fosters the learners' understanding of their nearest environment.

Culture	Proposed checklist descriptor
27. The textbook includes aspects of the students' regional culture.	

6.6. BALANCED ETHNIC-GROUP REFERENCES.

Nevertheless, the previous checklist item does not mean that an appropriate CLIL textbook needs to validate the local culture over others. CLIL textbooks should, above all, offer a view on the diversity of ethnic groups and cultural differences among human beings. In the set of CLIL Science textbooks analyzed, with Spanish students as target and the Spanish curriculum as standards, we have perceived that there is a tendency towards cultural neutrality. Both the people and the landscapes appearing on pictures are varied and do not allow us to point at the students' majority ethnic group. Besides, stereotypes tend to be avoided in all CLIL textbooks

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examined, as people from different ethnic backgrounds, both men and women, are depicted at their jobs, helping at home or are engaged in different leisure activities. Thus, most pictures in CLIL textbooks attempt to show that people belonging to all ethnic groups can accomplish the same tasks. Pictures 45, 46, 47 and 48 are several examples from *Top Science 3* which try to deal with the different ethnic groups by showing two different racial groups in the same picture.



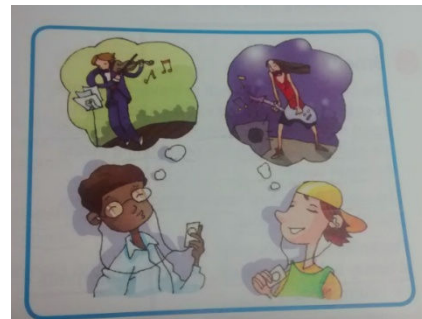
Picture 45. *Top Science 3*. Richmond Publishing and Santillana. Page 136



Picture 46. *Top Science 3*. Richmond Publishing and Santillana. Page 161

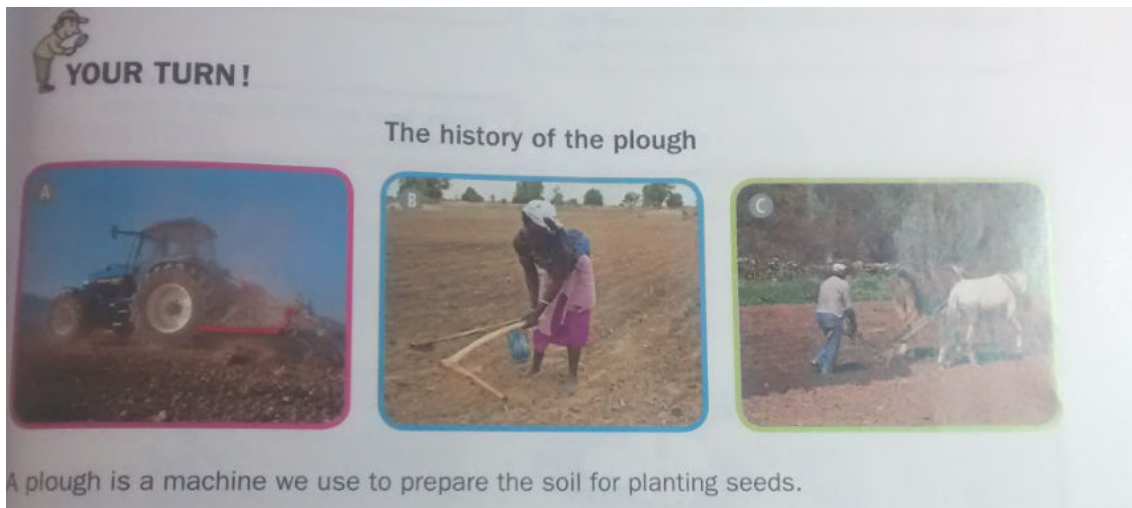


Picture 47. *Top Science 3*. Richmond Publishing and Santillana. Page 19



Picture 48. *Top Science 3*. Richmond Publishing and Santillana. Page 23

Picture 49 below shows us an attempt by a CLIL Science textbook to be culture-neutral. The textbook includes three pictures for explaining the history of the plough: we cannot locate the first one, as it could be taken in Spain or in any other rural area; the second one shows us a black woman, which may lead us to think about Africa; and finally, the third picture contains a white man ploughing with animals. This is just an example of how the textbooks tend to balance the presence of different ethnic groups.



Picture 49. Top Science 3. Richmond Publishing and Santillana. Page 69

From the previous discussion we can conclude that CLIL textbooks should offer a balance between the students' culture and others, not only because it permits covering interculturality more holistically (as appropriate learning opportunities may emerge), but also because it defines accurately the world students live in today, where different ethnic groups coexist.

Culture

Proposed checklist descriptor

28. The textbook includes balanced references to the students' culture and others.

CHAPTER 7

FINAL CHECKLIST TEMPLATE

CLIL SCIENCE TEXTBOOK SELECTION CHECKLIST ONE TEXTBOOK TEMPLATE		Very poor	Poor	Average	Good	Excellent	TOTAL
CONTENT		1	2	3	4	5	
1	The contents selected agree with those prescribed by the current educational law.						
2	The contents that are suggested by the textbook challenge learners' thinking.						
3	The contents that are suggested by the textbook are accessible for the students' cognitive level.						
4	The textbook activities integrate language development and content acquisition.						
5	The textbook offers opportunities for cross-curricular content to be addressed.						
6	The textbook offers varied educational situations such as experiments to facilitate content acquisition.						
7	The textbook includes multimodal input to address the visual, aural, tactile and kinesthetic modes of learning.						
8	The textbook offers opportunities for students to build on prior knowledge.						
9	The textbook promotes activities aimed at the production of observable outcomes.						
CONTENT TOTAL SCORE							/45
COGNITION		1	2	3	4	5	
10	The textbook is cognitively demanding for the target students.						
11	The textbook is well adjusted linguistically to facilitate cognitive progression. (i.e. it fits the students expected level or is slightly above						

	it).						
12	The textbook presents a cognitive progression in its content and activities						
13	The textbook provides opportunities for students to reflect on their own learning process.						
14	The textbook provides students with study strategies.						
15	The textbook suggests activities into which both high order thinking skills (HOTS) and low order thinking skills (LOTS) are promoted.						
16	The textbook provides sufficient and appropriate scaffolding for the development of cognitive processes.						
COGNITION TOTAL SCORE							/35
COMMUNICATION		1	2	3	4	5	
17	The textbook is written in an appropriately simple but entirely correct language.						
18	The textbook employs the appropriate linguistic functions for each task. (e.g.: defining, describing and hypothesizing).						
19	The textbook highlights the core vocabulary items and phrases for each theme.						
20	The textbook predicts students' communicative necessities and provides the corresponding language support.						
21	The textbook's activities create communicative gaps to allow students to use the language meaningfully.						
22	The textbook includes activities to be carried out in different groupings (individual, pair work, small groups and whole class).						
COMMUNICATION TOTAL SCORE							/30
CULTURE		1	2	3	4	5	
23	The textbook presents contents for promoting intercultural awareness						

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	at three levels: surface culture (food and specific holidays), sub-surface culture (notions of courtesy and body language) and deep culture (unconscious values and attitudes).						
24	The textbook presents contents for promoting intercultural awareness at three levels: surface culture (food and specific holidays), sub-surface culture (notions of courtesy and body language) and deep culture (unconscious values and attitudes).						
25	The textbook's cultural references are pertinent (not forced) for content acquisition.						
26	The textbook offers a perspective on the three levels of intercultural education: the students' culture, the foreign culture and global/universal culture.						
27	The textbook includes aspects of the students' regional culture.						
28	The textbook includes balanced references to the students' culture and others.						
CULTURE TOTAL SCORE							/30

FINAL SCORE						/ 140
	Very poor	Poor	Average	Good	Excellent	
COMMENTS					

CHAPTER 8

CONCLUSIONS

The main goal of this work was to design a tool to assist CLIL-Science teachers in selecting appropriate textbooks for the implementation of CLIL foundations. With this objective in mind, we designed an evaluative checklist that adapted the most relevant CLIL ideas into textbook features which could facilitate the teachers' task to contribute to the students' content and language learning. This checklist was conceived with the idea of permitting educators to compare different CLIL-Science proposals' strengths and weaknesses according to the evaluative criteria discussed in terms of content, cognition, communication and culture.

As we have discussed in earlier chapters, there seems to be a lack of guidance when it comes to select CLIL appropriate textbooks. This may result in a chaotic process where relevant features can go unnoticed, and eventually end up with the teachers' disaffection towards his/her initial choice. After all, a textbook which was analyzed broadly may not satisfy totally the teachers' expectations. It is important to highlight that a textbook is a useful pedagogic tool which may contribute to structure and sequence the contents; however, it can also turn out to be an obstacle to developing the teachers' ideas and therefore may constrain the educator's decisions. Thus, we consider that it is beneficial to promote a previous reflection on which textbook features could contribute to a suitable development of the CLIL approach and adapt more efficiently to the professionals' teaching style.

Although EFL textbook selection tools are abundant in literature,¹⁴ they have been harshly criticized due to their lack of rigour and reliability. EFL checklists are inadequate for the task at hand because of their shortcomings and because they do not address the dual focus approach. We must remember that EFL is concerned mainly with the acquisition of language and therefore may disregard content (in the sense of non-linguistic curriculum themes), one of CLIL's core dimensions.

This work can also guide textbook authors towards the educators' necessities, so they may modify activities which sometimes disregard either content or language and design more integrative tasks. It is generally acknowledged that teachers are CLIL materials developers, as it is extremely difficult to find materials which fully suit a specific group of students' level (referring to both content acquisition and foreign language development). However, the considerations of the designed checklist may be useful to create activities which may adapt to varied target groups and different learning styles. Thus, the adaptation time that educators

¹⁴ Miekley 2005, AbdelWahab 2013, Mukundan 2012.

need would be significantly reduced. The textbook writers may strive to match textbooks both with the identified needs of learners and the educators' teaching style.

The elaboration process of the checklist was encouraged by the secondary goal of delving into the CLIL textbook industry in Spain. It contributed to evidencing that the textbook is indeed a teaching material extensively employed by CLIL educators. Despite CLIL being a relatively new approach in Spain, publishing houses have already developed different textbooks addressing CLIL specifications. These publishing houses traditionally specialized in non-linguistic subjects, namely *Anaya*, *Santillana* or *Edelvives*, contributed most to the CLIL-Science catalogue. However, other textbook companies especially renowned in the field of foreign language acquisition are working cooperatively with Spanish publishers in order to develop interesting proposals both from the L2 acquisition view and the standards prescribed by the Spanish educational laws. This can be conceived as a first approximation to the issue of the checklist elaboration, as it made us aware of which textbook features are present in most CLIL textbooks and which aspects are largely lacking.

The literature review evidenced that there are three methods which have been traditionally used for selecting and evaluating textbooks: the impressionistic method, the checklist method and the in-depth method. These three methods were confronted so as to detect their main strengths and weaknesses. Among all of them, the checklist method seemed to be the most appropriate due to its systematicity and its user-friendliness. Since CLIL may be an overwhelmingly complex approach, combining many different aspects, we decided to employ a framework to address it holistically. Thus, we employed Coyle's 4 Cs framework not only because it is perhaps the best-known theory and CLIL teachers are familiar with it but also because it permits designing a checklist which responds to CLIL's integrative essence. Technically, the four categories conceived by Coyle (content, cognition, communication and culture) articulate the checklist's sections.

Each of the designed descriptors is explained, justified and illustrated following a similar pattern. Initially, we analyzed the foundations of CLIL so as to highlight the aspects which may define CLIL in terms of practice; that is, processes such as providing cognitive and linguistic scaffolding, activating students' prior knowledge or promoting communication. Then, we reviewed literature to discover what different authors had contributed to the study of each specific issue. Next, we provided an example from a real CLIL Science textbook and finally, we proposed a descriptor which represents a CLIL-friendly textbook feature.

However, it is necessary to highlight that this tool is not free of limitations. Its period of applicability may be limited by future developments in CLIL theory; requirements may vary from one target student group to another; and the rating scale needs to be specified for each descriptor.

We consider that the evaluative criteria employed may be subject to modification according to the latest discoveries in the fields of CLIL, language acquisition and education in general. Nevertheless, we also consider that this is a positive point, as the checklist is bound to evolve as users adapt it to different groups of students, come up with their own improvements, or CLIL principles get revised and reformulated. It is the nature of the employed method which allows us to update the evaluative criteria.

Teachers are aware that the activities which work well with a set of students can turn out to be ineffective when used in a different one. For this reason, a textbook marked as satisfactory may not address the specific needs of a certain group. The proposed checklist promoted its applicability by the greatest possible number of educators, considering a general scenario of average students, that is, with no special learning needs. An analysis of the current heterogeneity in schools in terms of disability and social and cultural diversity might have been interesting, but also beyond the scope of this work.

It is true that evaluation always have a subjective component. However, there is an aspect which was not addressed in this work and would contribute to increasing this checklist's objectivity to a certain extent: the specification of the rating scale for each descriptor. As it was initially considered, the items are evaluated according to five categories going from very poor to excellent. However, now it will be necessary to determine what "very poor" or "excellent" mean for every evaluative criterion. Only by defining these thresholds will we assure that this tool may be employed with similar results by different professionals. This task is not as simple as it initially may seem. Although there are some aspects such as determining the categories in terms of content from the curriculum that a textbook covers that would be easily represented by a percentage, there are others such as the cognitive challenge that seem to be more controversial and need further reflection. For this reason, this is an open line that could be studied in the future.

Finally, this checklist needs to be validated by educators. This would provide us with useful feedback about the tool and would allow us to adjust its descriptors and template to a more functional one.

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In short, this work attempted to provide CLIL Science educators with a tool to assist them in the textbook selection process. It did so by highlighting core features that could enable them to implement this approach. I hope that we have satisfied our main objective –at least to some extent– as we have designed a template which is reasonably exhaustive, as it includes features about the four acknowledged dimensions of CLIL; systematic, since it employs the same pattern for evaluating all the descriptors; and user-friendly, because it is visual and does not require further instructions.

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