

# Languages for learning

## The role of CLIL teachers

Silvia Minardi

Liceo Statale Quasimodo

More than 25 years have passed since CLIL was first introduced in schools all over Europe with objectives, methods and organizational structures that often also vary from one country to another. Time has passed, and still without a precise framework of reference, CLIL shows its great potential as well as its drawbacks. Using data from research conducted in Italy with four CLIL teachers who teach physics through a foreign language, this article aims to highlight the possibility that CLIL can serve to make every teacher, regardless of the subject, aware of the role that language can play in learning. The data collected, which refer to the Italian education system, emphasize the central role of the subject teacher in CLIL implementation. They also draw attention to the need for important changes in the CLIL agenda for the coming years.

**Keywords:** language for learning, the language dimension of all subjects, CLIL, pluriliteracies

If learning is seen as a semiotic process, a form of ‘*linguaging*’, we can use our understanding of language to model the processes of learning  
(Halliday, 2007: 91)

### Introduction

After more than 20 years since CLIL (Content and Language Integrated Learning) started being used in Europe, the 2017 Eurydice report *Key data on teaching languages at school in Europe* informs us that “in nearly all European countries some schools offer CLIL provision [which] exists in primary, lower secondary and general upper secondary education” (Eurydice 2017: 55–57). CLIL, which was initially used as a tool to improve the quality of language education in Europe, has demonstrated the key role of language in any kind of learning.

Within an area of research focusing on the role of classroom discourse in the construction of knowledge through language (Nikula et al. 2013; Cenoz et al. 2014; Llinares & Dalton-Puffer 2015; Llinares & Evnitskaya 2020), this article draws on a study on how classroom discourse can encourage learners to understand and express academic content both in the language of schooling and in their L2.

A major aim of this paper is to use the data collected and analysed in a PhD research, which was conducted in Italy between 2015 and 2019, to reflect on the profile of the CLIL teacher and on how important it is for any subject teacher to become aware of the role of language dimensions in teaching and learning. Before reflecting on the data, I examine how CLIL has developed in Europe and how it has been implemented in the Italian education system.

## CLIL in Europe

CLIL came to the fore in Europe in the 1990s as an instrument to achieve the European “mother tongue + 2” objective. Since then, CLIL has always been given considerable official and institutional support as “a way to improve the quality of language education in order to prepare 21st century professionals” (EU Commission Staff Working Document *Language Competences for Employability, Mobility and Growth*, 2012). Generally speaking, CLIL is seen to have the qualities to be the answer to a dual European need. On one side, CLIL, which theoretically can be provided in any language, is frequently presented as a tool to realise a multilingual, diverse European community, with multilingualism being a key component of a European identity based on “the diversity of cultures within the framework of a common European civilization, the attachment to common values and principles, the increasing convergence of attitudes to life, the awareness of having specific interests in common and the determination to take part in the construction of a United Europe” (*Declaration on European Identity*, 1973). On the other side, CLIL is still widely accepted as the most adequate approach to enhance effective language education. The 2017 Eurydice report informs us that CLIL is provided in all European schools “in order to improve students’ proficiency in another language” (Eurydice 2017: 55) and that “the aim of CLIL models is mainly to develop more efficient approaches to the teaching of FL through increased exposure to the target language and increased practice through the integration of language and core content knowledge” (Hélot & Cavalli 2016: 473). In the Commission Staff Working Document accompanying the document *Proposal for a Council Recommendation on a Comprehensive Approach to the Teaching and Learning of Languages* (2018), CLIL is paired with innovation: “Innovative language teaching practices include translanguaging (the use of different languages for communica-

tion and learning), content and language integrated learning (CLIL), the use of digital technologies and the use of creative subjects for language learning”. The two objectives have always been used to justify the introduction of CLIL in education: CLIL can help build a multilingual Europe while enhancing the quality of language learning.

In 2018, the document *Rethinking language education in schools* (European Commission 2018) timidly started adding an element of change as it states that “CLIL is an effective way to support language and subject learning, with benefits for education and other outcomes”. The last part of the quote – “with benefits for education and other outcomes” – suggests that we are probably at a time when some change is expected, “a shift from CLIL being very much a language-related phenomenon to one which is gaining increasing attention in the broader learning agenda” (Coyle 2019:76). The time may have come to go beyond CLIL (Meyer et al. 2018) with a different place for language(s) and the language dimensions of all subjects finally put at the core of learning.<sup>1</sup>

At an institutional level, several problems are to be considered: “the dominance of English in CLIL programs [which] means that other European languages are less frequently offered and that minority migrant languages have even less chances again of being included in CLIL provision” (Hélot, Cavalli 2016: 485), the need to define CLIL teacher education, the lack of both an agreed definition of CLIL and a shared theoretical framework.

## CLIL in Italy

After over ten years of bottom-up initiatives to introduce CLIL in schools at all levels of education, CLIL was made mandatory in upper secondary education in 2003. In the following paragraphs we will illustrate how the system has reacted to the change.

### The beginnings

The first CLIL projects in Italy date back to the mid-nineties with grassroots initiatives in various schools. In those early experiments, CLIL was used with the aim of improving learners’ language skills. Before 2003 the norm which had supported the introduction of CLIL in the Italian education system is the Regulation of School Autonomy (1999), which stated that “within the framework of teach-

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1. The various institutional references used in this paper highlight how much the EU institutions have encouraged the implementation of CLIL initiatives in education at all levels.

ing autonomy, professional development courses involving several disciplines and activities as well as teaching in a foreign language may be planned, also in accordance with the interests expressed by pupils”.

### The school reform laws of 2003 and 2015

A radical change came with the Reform Law 53/2003: CLIL was made mandatory in upper secondary education in Italy according to a precise scheme:

- a subject has to be taught in a foreign language in the final year at *licei*;<sup>2</sup>
- a subject belonging to the specialisation area has to be taught in English in the final year at technical schools;
- two subjects have to be taught in two different languages in the final three years of *Licei Linguistici*,<sup>3</sup> one starting in the third year and a different subject starting in the fourth year.

The 2012–13 schoolyear was the first year of implementation for *Licei Linguistici*, while starting from the 2014–15 schoolyear, the change would involve all *licei* and technical schools.

Italy is now the only European country to have made CLIL mandatory in its education system (Eurydice 2017: 57). This decision, which came to be considered strategic by the legislator, was confirmed by Law 107/2015 which insisted on “the enhancement and strengthening of language skills, with particular reference to Italian as well as English and other languages of the European Union, also through the use of the Content and Language Integrated Learning methodology”. Ever since 2003, CLIL has been seen in Italy as a tool for improving language education with CLIL teachers being subject teachers with specific qualifications, as illustrated in the next paragraph.

### The CLIL teacher

The CLIL teacher in Italy is a subject teacher who teaches his/her discipline, partly in the language of schooling and partly in an L2: it is up to the school management to designate teachers with the required qualifications to teach their subjects using CLIL. The qualifications which a CLIL teacher is asked to have are to be found in a complex system of norms and regulations, the first dating back to 2010:

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2. type of college preparatory secondary school.
  3. “Licei linguistici” are college preparatory secondary schools specialized in the study of three modern foreign languages for five years.

- according to the *decreto ministeriale* 249/2010 on initial teacher training, English language skills at B2 level are a prerequisite for obtaining the teaching qualification for any subject. The same decree allows universities to activate CLIL methodology post-graduate courses. Access to these courses is reserved to teachers who are already qualified to teach their subject in secondary school and have a certified language competence equal to or higher than a C1 level.
- the *nota ministeriale* 10872/2010 gives specific details of the profile of the CLIL teacher. In addition to having “mastery of the micro-language (vocabulary, types of discourse, genres and textual forms...) specific to the subject”, the CLIL teacher must “be able to transfer disciplinary knowledge into teaching terms by integrating language and content [...] both in cooperation with foreign language teachers and independently”.

According to the early norms, the CLIL teacher is an expert in his/her own disciplinary field with a high command of the language used and is able to adopt CLIL even without the support of a language teacher.

In order to be ready for the 2012–2013 schoolyear, the system needs CLIL teachers: the decision was then taken to train in-service subject teachers as CLIL teachers. A complex process begins with the *decreto esecutivo* n.6/2012 giving guidelines for the organisation of university CLIL methodology courses structured as follows: (a) language courses starting from a B1 level and targeting C1; (b) CLIL methodology courses designed as post-graduate courses (20 University Credits – 500 hours). The first methodology courses following such a scheme started in 2012.

### The temporary norms

In 2013 a period of “temporary norms” (*Norme transitorie*) began. In January, guidelines were issued to start the implementation of CLIL in *Licei Linguistici*. It was then chosen to start with a “gradual and flexible introduction of the teaching of a subject in a foreign language according to the CLIL methodology, considering that all the training activities will take more years to complete”. The number of CLIL teachers the system needs is much higher than their actual availability. The January 2013 guidelines gave CLIL teachers the possibility to teach in L2, “as a rule”, approximately 50% of the total amount of time allotted to their discipline, also considering the need to equip students with the mastery of the specific language of the discipline in L1.

In 2014, new temporary norms were issued: the *Nota Ministeriale* 4969/2014 – “Launch of the teaching of non-linguistic disciplines in foreign languages

according to the CLIL methodology in the third, fourth, fifth years of *Licei Linguistici* and in the fifth year of *Licei* and Technical Institutes (temporary norms for the 2014–2015 schoolyear)” reiterates the requirements to be a CLIL teacher: to be in possession of certifications in an L2 at C1 level at least, and to have passed a specific university preparation course for the teaching of a discipline in a foreign language according to CLIL methodology. Since these courses can also be accessed by teachers with certified language skills at B2 level who are attending a course to achieve C1 level, the School Management can ask teachers with a B2 level, as long as they are involved in preparation courses, to teach their subjects in CLIL. In any case – reads the note – “considering the gradual start of CLIL, the teaching of a subject can be experienced [...] also by teachers who are involved in the training courses to achieve a B2 level”.

It is clear that, within a few years, these measures have contributed to lowering the level of the linguistic competence required to become a CLIL teacher: according to the temporary norms of July 2014, teachers with a B1 level who are attending a language course to reach a B2 level can also be recruited to teach their subjects in CLIL.

### Official data on CLIL provision in Italy

The first official data on the implementation of CLIL in Italy can be found in the *First Monitoring Report* of the Ministry (2014) on the third classes of the *Licei Linguistici* where CLIL should have been introduced starting from school year 2012/2013. In 2016, the Catholic University of Milan, assignee of a ministerial project, carried out a second monitoring study always focussed on *Licei Linguistici* in the 2014–2015 schoolyear.

The following data and information all come from the second *Monitoring Report* (2016). At the time, there were 804 *Licei Linguistici* in Italy. “The respondents were 873 subject teachers working in 373 *Licei Linguistici* and 198 school principals of *Licei Linguistici*” (MIUR 2016: 7), i.e., the official data now available refer to less than 50% of all such establishments. As for CLIL teachers, the 2016 *Monitoring Report* reports that they are over 45 years of age (about 80%) and have been teaching for 21 years or more. 63.67% have a language certificate (almost 10% more than in the 2014 Report): 39.96% at B2 level; 29.82% at C1 level; 6.49% at C2 level. 41.91% of the teachers have qualified from a university CLIL methodology post-graduate course or are attending a course at university level. The respondents express the need for additional initiatives of professional development: 38.67% in language skills; 32.41% in methodology; 22.87% in testing and assessment. The *Report* informs that “according to the statements made by the teachers and their school heads, most CLIL teaching remains below the threshold of 50%

of the total number of periods of the discipline involved". As to the subjects taught in CLIL, History (32.72%) and Science (17.82%) are the most popular. A comparison with the data collected in 2014 shows a growing popularity for Physics (from 13.7% to 17.21%) and History of Art (from 7.41% to 10.48%), while Philosophy (from 9.15% to 5.88%) loses some position. The most popular language for CLIL is English (70.35%), followed by French (21.37%), Spanish (4.20%), German (3.84%), Russian (0.24%).

The choice of the Italian legislator has certainly contributed to a wider presence of CLIL. However, there is no data in the Ministry's monitoring report or in any other sources useful to demonstrate whether and to what extent the mandatory introduction of CLIL has contributed to improving language education, nor do we know if and to what extent some benefits have been brought to the learning of the non-linguistic disciplines concerned.

An aspect which requires careful consideration is the choice of English as the most popular language in CLIL, also in *Licei Linguistici*, i.e., the only type of schools with various world languages in their curriculum. One would expect a greater linguistic diversification during those three years, but this has not occurred.

The lack of CLIL teachers led the legislator to accept increasingly lower levels of linguistic competence: the temporary norms of 2014, which are still in force, give schools the possibility to introduce CLIL even with teachers with a B1 level in the language, who can teach their subjects in CLIL, provided they attend a course to reach a B2 level. According to the *Common European Framework of Reference*, the Independent User (B1) "can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans" (2002: 32). One wonders whether with this level of language proficiency it is possible for a CLIL teacher to teach academic content in an L2.

## The research

The research involves the classes of four physics teachers from different *Licei Linguistici* situated in different parts of Italy. They all teach physics in Italian and in CLIL. The initial hypothesis was that CLIL teachers, thanks to the professional development initiatives they are involved in, should be able to take full advantage

of the role of language when they teach their subjects, independently of the language used, to enhance academic learning.

### Theoretical framework

The entry point in the research project is the role played by language in the construction of academic knowledge. The research was strongly influenced by the projects of the Language Policy Programme of the Council of Europe with their main focus on the place of language in the whole school curriculum and its key role in any educational process.

Among the many resources and projects which have been developed by the Council of Europe, the research was especially inspired by:

- A. Council of Europe's Recommendation 5(2014), which insists that all learners should be exposed to diverse language-learning situations and that educators keep in mind the "cross-cutting effect" that language has on all learning processes. This implies the need for all language users to become aware of the ways in which they can use any language.
- B. The Platform of Resources and References for plurilingual and intercultural education, which is "an open and dynamic resource, with systems of definitions, points of reference, descriptions and descriptors, studies and good practices which member states are invited to consult and use in support of their policy to promote equal access to quality education according to their needs, resources and educational culture".
- C. *The Language Dimension in All Subjects – A Handbook for Curriculum Development and Teacher Training* (2016).
- D. The ECML<sup>4</sup> project *A Pluriliteracies Approach to Teaching for Learning* (2012–15).

Drawing on these resources, the following points have become central to the research:

- the role of language as a constituent part of subject literacy: "being good at science [...] also means being good at talking and writing about science, in a specific, conventionalized way" (Beacco et al. 2016: 23);
- the promotion of subject-specific literacies, as it has been developed by the PTL<sup>5</sup> project: "a pluriliteracies approach to teaching for learning (PTL) puts subject literacy development in more than one language at the core of learn-

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4. The European Centre for Modern Languages of the Council of Europe.

5. The acronym used for the project *A Pluriliteracies Approach to Teaching for Learning*.



ing because we believe subject literacies are the key to deep learning and the development of transferable skills. This approach focuses on helping learners become literate in content subjects or topics and to empower them to successfully and appropriately communicate that knowledge across cultures and languages” (Meyer et al. 2015: 2).

## Objectives and research questions

The purpose of the study was to analyse the role of language in content learning through an in-depth analysis of classroom discourse. One of the objectives of the research is to examine analogies and differences in the way CLIL teachers use language to teach their subjects in Italian and through an L2. More specifically, the study aimed to answer the following research questions:

- RQ1: What language resources are part of the “multilingual space” of a subject lesson?
- RQ2: How are the language resources mobilised to foster the cognitive development of learners?
- RQ3: Which cognitive-discourse functions prevail in the classroom discourse of a physics lesson?

The questions investigate classroom practices in physics and focus on three linguistic dimensions: the discursive dimension (question 1), the interactional dimension (question 2) and the cognitive dimension (question 3).

There remains a final question that aims to explore transversal elements:

- RQ4: Is there a common area of work (in terms of objectives, content, skills and strategies) between language teachers and CLIL teachers?

## Data and method

The data come from two main sources: lessons and interviews.

### *The lessons*

The participants are four L<sub>1</sub> Italian CLIL teachers and their classes of four *Licei Linguistici* located in Magenta (Milan), Bergamo, Bologna and Rome. All four teachers are subject specialists with a different degree of experience in CLIL (Table 1).

**Table 1.** Research: Participants

Teachers (name initials)	FL – level	Years of experience in CLIL teaching
SG	French: C1	5
EB	German: B2	4
CB	English: C2	12
BA	English: C1	4

Twenty-three physics lessons were video-recorded and transcribed, as shown in Table 2.

**Table 2.** Research data: Physics lessons

		Date	Class	Corpus	Topic	
BA	Italian	13.04.2017	5E linguistico	73'30"	7880	Fenomeni magnetici.
		15.04.2017				
	English	21.02.2017	5E linguistico	117'29"	7723	Renewable energies.
		23.02.2017				
		28.02.2017				
	02.03.2017				Presentazione video e introduzione alla visita ad un laboratorio di ricerca.	
SG	Italian	09.10.2017	5D linguistico	131'45"	14542	L'idea di "campo": Newton e Faraday.
		10.10.2017				
	French	11.05.2017	5B linguistico	127'48"	6464	La radioattività: – Histoire de la radioactivité – Comment mesurer la radioactivité? – Les applications de la radioactivité
		16.05.2017				
		01.06.2017				
CB	Italian	10.05.2017	4 linguistico	141'41"	14138	I principi e le leggi della termodinamica. Trasformazioni termodinamiche.
		11.05.2017				
		12.05.2017				
	English	12.10.2017	5 linguistico	138'16"	10958	Moto armonico – onda – suono
		13.10.2017				
		26.10.2017				

Table 2. (continued)

		Date	Class	Corpus	Topic	
EB	Italian	31.10.2017	5G linguistico	135'42"	13727	Parte 1: esperienza in laboratorio di fisica.
		03.11.2017				Parte 2: trascrizione dati in laboratorio di informatica.
		04.11.2017				Legge di Ohm.
	German	30.09.2017	5G linguistico	139'05"	5118	Coulombsches Gesetz.
		02.10.2017				Elektrisches Feld.
		06.10.2017				

The table provides information about the classes concerned and the topics dealt with by the four teachers in the lessons recorded. The column “corpus” gives the total number of words which are in the transcriptions of the twenty-three lessons. Italian and CLIL lessons do not last the same. This can be partially justified by the fact that during their CLIL lessons all the teachers used videos, which were not transcribed. Moreover, students commonly read aloud from their textbooks in SG’s CLIL lessons; these parts were not transcribed either. Finally, all the teachers have a much lower speaking speed in CLIL than in Italian lessons.

### *The interviews*

The four teachers agreed to be interviewed after their lessons had been recorded. Each interview, although based on a common set of questions, also included topics related to the specific situation of each teacher. The interviews contain exchanges on the choices made during the lessons, while the most important part of each interview is represented by the teachers’ reflections on their teaching practices, on the decisions taken when planning, on the choices of contents, procedures and materials. The analysis of the answers, which were recorded and transcribed, is based on Legitimation Code Theory, “a multi-dimensional framework for researching and shaping practice” (Maton & Howard 2018: 5). Within LCT the data were coded and analysed using the *autonomy* dimension: “each dimension comprises a series of concepts centered on capturing a set of organizing principles underlying dispositions, practices and contexts as a form of legitimation code that is named after that dimension” (Martin & Maton 2017: 29). Each dimension includes codes, i.e., “the organising principles of a practice” (Maton 2013). In LCT, there are five dimensions: “Specialization”, “Semantics”, “Autonomy”, “Temporality”, and “Density”. As to autonomy, its codes “explore the boundaries that practice establish around their constituents and the boundaries they establish around how those constituents are related together” (Maton & Howard 2018: 6).

It is the metaphor of boundaries, as used in LCT, that has led me to choose autonomy to study the role of language – an essential constituent part of learning – within the classroom practices of the four physics teachers. The codes are “positional autonomy (PA) between constituents positioned within a context or category and those positioned in other contexts or categories; and relational autonomy (RA) between relations among constituents of a context or category and relations among constituents of other contexts or categories. [...] Stronger positional autonomy (PA+) indicates constituents positioned in a context or category are relatively strongly from constituents attributed to other contexts or categories, and weaker positional autonomy (PA-) indicates such distinctions are drawn relatively weakly. Stronger relational autonomy (RA+) indicates where the principles governing how constituents are related together are relatively specific to that set of practices, i.e. purposes, aims, ways of working, etc. are autonomous; and weaker relational autonomy (RA-) indicates where the principles governing how constituents are related together may be drawn from or shared with other sets of practices, i.e., purposes, aims, ways of working, etc. are heteronomous” (*ibid.*).

All the dimensions within LCT use their specific codes on a plan. Figure 1 provides a mapping of autonomy codes:

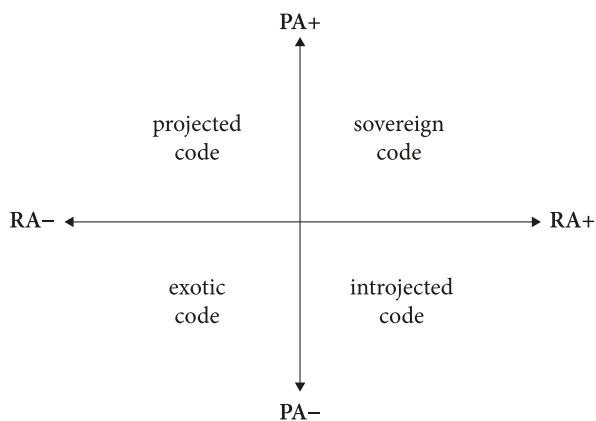


Figure 1. LCT: Autonomy codes

From the intersection of the two axes on which positional autonomy and relational autonomy are placed, four quadrants with their respective codes are derived. A sovereign code (PA+/RA+) occurs when “what is valued emanates from within the context or category and acts according to its specific ways of working” (*ibidem*). The opposite is an exotic code (PA-/RA-): in this case, “what is valued are constituents associated with other contexts or categories and ways of working from other contexts or categories: external constituents for external pur-

poses” (*ibid.*). In the case of an introjected code (PA-/RA+), we are faced with situations where “what is valued are constituents associated with other contexts or categories but oriented towards ways of working emanating from within: external constituents for internal purposes” (*ibid.*). Finally, a projected code (PA+/RA-) uses “internal constituents turned to external purposes” (*ibid.*).

It should be noted that this mapping does not assume these different positions to be permanent: during the interview, positions varied, for example, within the answer given to a single question. That is, it is not a question of enclosing the beliefs that underlie teaching practices within a single code, but of following the *variation* of positions, in our research, regarding the role given to the language dimensions in CLIL and in L1 lessons.

When analysing data, a translation device is needed for each dimension (Maton & Howard 2018:10). The starting point in the construction of the translation device is the definition of what LCT defines as the target. A target consists of two elements: a focus (content) and a base (how it is legitimized). The analysis always focuses on the base, i.e. the element that changes with respect to the beliefs and principles that governs choices and practices.

In our research, the base is language as a tool for (academic) learning. Starting from the assumption that every learning is also linguistic, the target chosen is the use that CLIL teachers make of language within their lessons. In my initial hypothesis, I expected CLIL teachers to be aware of the functions and role that language can perform in an academic learning content.

The concept of language adopted in the research can be summarised in the following points:

- language is a privileged tool for the construction and expression of meanings; it is not a simple system of rules;
- meanings are constructed, negotiated and expressed through texts;
- language is concretely realized in speech practices;
- language is one of the multiple semiotic codes that can be used in class to understand and express meanings.

Based on these guidelines the following translation device was devised. The lowest level indicates a lack of awareness of the role that language can play in learning academic content.

**Table 3.** “Translation device” for “autonomy” applied in coding the interviews

		Language dimensions are ...
PA/RA+	target	... central in knowledge building ... relevant in communication and language is seen as a system
PA/RA-	non target	... marginal ... non-existent

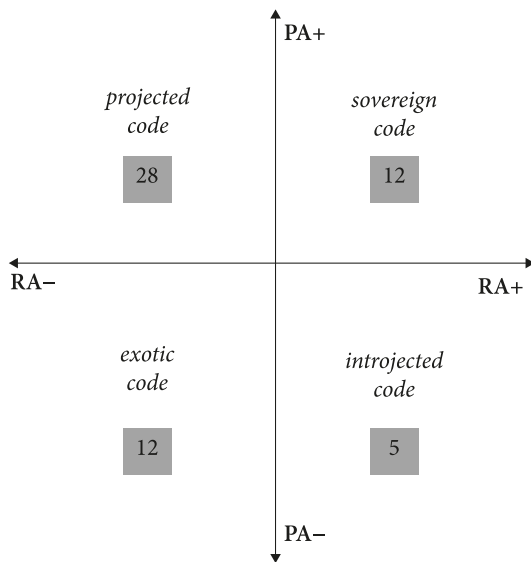
The questions which were used in all the interviews focus on the following points:

1. As in Italy physics and mathematics are often taught by the same teacher in a course or class, I wanted to investigate the reasons why the teachers had opted for physics when it came to introducing CLIL in their classes.
2. In Italy, all secondary schools should ensure that 50% of the time given to a subject in the last year of the course is used to teach the subject in CLIL. This means that a teacher chooses which part of the syllabus should be done in CLIL. Therefore, I wanted to investigate the criteria used when choosing the contents of the CLIL learning units or modules.
3. The textbook is an important point of contact between learners and academic discourse about the subject. Some teachers do not use it regularly in class, but learners use it for practice or personal study and revision. Some teachers read and comment on it in class, but they also use other materials (handouts, videos). I wanted to explore which sources were used and which materials were chosen most frequently. I was interested in learning about the criteria for the choice of a particular material or that lead a teacher to adapt material from a different source than the textbook.
4. The CLIL teacher teaches the same subject in the same class both in CLIL and in L1: what is taught in CLIL is not repeated in Italian and vice versa. I wanted to investigate if the teacher sees analogies and/or differences between the lesson in Italian and the lesson in CLIL in terms of language dimensions.
5. I asked each teacher if and how they prepared their lessons from a linguistic point of view. I also investigated the teacher's attitude to students' language mistakes. Finally, I asked if, to what extent, and for what purpose the Italian language was used in CLIL lessons.
6. The four teachers were asked whether language poses problems to learners during the lessons in the language of schooling and how these difficulties are tackled by the teacher.

### *Results*

If we examine the quantitative distribution of the answers on the autonomy plan (see Figure 2) and according to the levels of the translation device designed (see Table 4), a projected code dominates, i.e., the teachers involved consider the language as a tool for communication.

The teachers involved in the study are aware of the role that language can play in class, for example, as a tool that promotes interaction and the exchange of ideas, thus fostering students' participation in the lesson. The idea that language is a system of rules, and that the language of physics is a set of words, is evident to the point that two of the teachers interviewed consider the knowledge of academic vocabulary a priority objective of CLIL/AIDEL.



**Figure 2.** Distribution of the four teachers' answers on the Autonomy Plan

**Table 4.** The distribution of the answers according to the four levels of the translation device

Language dimensions are...			Nr of answers
PA/	target	... central in knowledge building	12
RA+		... relevant in communication and language is seen as a system	28
PA/	non	... marginal	5
RA-	target	... non existent	12

When coding them, some answers were placed on different parts of the plan: sometimes sovereign/projected, sometimes also sovereign/exotic or projected/introjected. In this regard, it is especially interesting to note that some answers have a different code depending on whether the answers refer to the teaching of physics in Italian or in CLIL. This could indicate a different way of handling the linguistic dimensions of physics, that is, the teacher does not give them much importance, especially if the lesson and the materials are in Italian.

As to the first research question – What are the language resources in the “multilingual space” of a subject lesson? – the answers allow several considerations. There is a certain level of awareness of the necessary distinction between everyday and academic discourses, each with its own structure and vocabulary.

This distinction is often described as problematic by the teachers because students tend to focus less on words in Italian than in CLIL and have to be guided to understand that a certain word has only one meaning in physics, while it can have various or other meanings in ordinary speech. At least two teachers suggested that the discourse in CLIL could be less formal: for example, one criterion that guided participant CB in choosing a specific textbook for his CLIL lessons is the level of low formality of the text. For participant EB, the academic discourse belongs to the conceptualisation phase which, in physics, requires high terminological precision. According to her, what distinguishes academic discourse is the specific terminology that must be learned in order to be used with precision.

The use of reformulation, a clarification strategy useful to initiate conceptualisation (Gajo 2007), occurs in various forms in the lessons transcribed, and it is commented on in the interviews as well. For instance, in the initial phases of a teaching unit, participant EB feels the need to rephrase sentences several times as a way to ensure that the message gets across, and uses everyday discourse to achieve this goal. After those initial stages, concepts start being reformulated in an increasingly academic discourse.

In a CLIL lesson there are at least two languages, Italian and the foreign language. Two teachers reckon that L<sub>1</sub> should never be used in CLIL. As to the other two, not only do they include L<sub>1</sub> in their lessons, but participant CB asserts the need to use Italian, for example, when it comes to explaining the different steps of a logical procedure. He adds that he believes that different discursive functions, such as description and explanation, may lend themselves to the use of different languages: if the foreign language does not pose any problems in the management of a description, it is, instead, to be excluded when explaining a phenomenon. The answers to the questions about the lessons in Italian contain, for two of the teachers, a very clear idea of how useless it is to concentrate on the academic discourse of physics in Italian: as it is the language of learners, they feel it is transparent.

Investigating the answers given during the interviews using the second research question (“How are the language resources used to foster the cognitive development of learners?”) allows us to understand the attitude of the four teachers regarding how language can be used when it comes to conceptualising, negotiating meanings, and learning academic content, regardless of whether the lesson is in Italian or in CLIL. The question focusing on class discourse finds some partial answers in the interviews. Participant BA thinks that interaction is more evident in CLIL lessons than in L<sub>1</sub> lessons. Participant SG recognises that he “speaks too much” and “gives too much information” in his lessons in the language of schooling, that is, he clearly implies that he lectures more in Italian than in CLIL lessons. He also admits that, in order to be able to help students follow a complex reasoning, a very high level of linguistic competence is required. Such a statement



seems to imply the recognition that a perceived limited linguistic competence on the part of the CLIL teacher sometimes impels him to opt for other forms of communication in CLIL lessons, so as not to be obliged to use the L2 in an important and continuous way. Yet, even here, it is necessary to combine this information with what emerges from the analysis of the lessons: it is true that none of the CLIL video-recorded and transcribed lessons include sequences classified as “monological exposition by the teacher”, but it is equally true that, when watching video materials or reading aloud, monological exposition by the teacher is replaced by monological exposition by the person lecturing in the video or through the textbook pages. All the four teachers agree that the CLIL lesson takes more time, which has the advantage of helping students to understand better and in more detail: participant EB says that “the concepts acquired in CLIL remain longer”, while what is learnt in Italian seems to be volatile and unsteady.

The third research question (“Which cognitive-discourse functions prevail in the classroom discourse of a physics lesson?”) finds only a few partial answers in the interviews. In particular, participant CB states that physics is to be preferred to mathematics in CLIL because the former allows the “description of phenomena”. Describing phenomena and procedures (experiments) occurs regularly in physics together with the function of explaining phenomena. The textbook and the materials used often encourage the learner teacher illustrates produce written and oral texts, in which the L2 is used to describe and explain. However, under no circumstances is any mention made of how students can acquire the linguistic-discursive tools necessary to express these two functions.

In an answer given by participant SG, the teachers illustrate the phases through which the macro-genre of a subject lesson is developed from the point of view of class speech: the isolation of keywords is deemed essential to the comprehension of a text, which implies conceptualising the so-called “concept-words” before using them in tasks. There is no description by the teacher of what he means by “using concepts”, while “defining” is, in SG’s answer, a necessary step in the exploration of the “physical situation of a concept-word”.

As to the fourth research question (“Is there a common area of work (in terms of objectives, content, skills and strategies) between language teachers and CLIL teachers?”), participant CB mentions collaborative work he has already done with his fellow English teacher:

another thing we used, with CC [indicates the name of the English colleague of the course], we read some passages written by two English physicists, Newton and Young, some short passages in original about the debate they were involved in whether light was corpuscles or waves. The texts were discussed while we were in class together. But this is something we managed to do only once in a year.

In mentioning this common work on texts originally written in English, CB says it only happened “once in a year”. This poses some problems: transversality would require a degree of continuity which, in the case of CB, obviously did not occur. Moreover, CB does not say if and how the lesson was prepared together, if and how it became part of both teachers’ syllabi, nor which interaction and management strategies were adopted in class. From a practical point of view, the answer also raises other organisational problems: for example, co-teaching is not provided for in the Italian education system and organizing it in a systematic way requires additional resources that schools do not always have. What is more, in an informal exchange, the same teacher complained that not all English colleagues are willing to cooperate.

Participant SG also highlights problems when cooperating with his French-speaking colleague:

it is not yet possible to find a way so that my CLIL lesson is seen positively or even used in some way by my French colleague and vice versa. That is, in the sense that I can teach a part of the vocabulary that maybe the French language teacher will never cover because it is only used when reading a non-literary text. This is the point: we could share contents and the language teacher could test and assess comprehension of both literary and non-literary texts.

There is a desire to cooperate and share content. However, transversality requires space and time and for it to become routine, it implies awareness of the role that each teacher can and must give to the construction of learning, which needs language to become competent. But even before resources in terms of time and space are needed, conceptual tools are lacking. Both language and subject teachers need professional development activities so as to understand the importance of a common work on the language dimension of learning.

## Concluding remarks

In an effort to connect the micro-aspects of CLIL teaching with the macro-aspects of language policy we can learn various lessons at various levels.

Assuming language plays a role in deeper learning, micro-level research has shown that:

- at discourse level, a CLIL lesson combines different semiotic resources and various registers within at least two languages (L1 and L2) are used; what is often neglected or even, at times, avoided is the use of L1 in CLIL lessons. In addition, the learner’s repertoire, which may also include languages which

- are different from the language of schooling and the L2 used in CLIL lessons, should start to be taken into systematic account. From that point of view, in-depth studies about the use of translanguaging in CLIL lessons are needed;
- in classroom interaction, various forms of communication exist and specific subject genres should be explicitly used and taught. This requires careful planning on the side of the CLIL teacher. Questions such as “what kind of texts do I want my learners to be able to read and to produce?” may help to activate specific classroom activities in subject lessons;
  - the cognitive level shows how the concept of subject literacies or, in CLIL, pluriliteracies should start to be approached holistically: learning physics also means learning the language of physics, which implies wondering what physicists do when reading (e.g. they ask “why?” more than “what?”; they interpret data, charts, illustrations; they try to understand concepts),<sup>6</sup> when writing, and when thinking.

Considering CLIL as a language education policy in accordance with Shohamy’s (2006) description of such policies as being “imposed by political entities in a top-down manner, usually with very limited resistance”, three different initiatives are needed.

First of all, it is time to define CLIL, which now comes in different shapes and sizes. Without a clear definition of CLIL in terms of aims and objectives and without a shared conceptual framework of reference, there is a risk of missing the chance to fully exploit the key role of language in learning.

A second element which has now become evident is the widespread use of English as the only language of CLIL (Bolitho & Rossner 2020) with little or no space at all for other foreign or second languages. Instead of being a way to promote plurilingual education, CLIL risks becoming an instrument for the promotion of English as one of the languages of schooling in various education systems.

Another highly demanding aspect is the need for CLIL teachers to have a high level of proficiency in the language(s) of instruction as well as in “language knowledge for content teaching” (Morton 2018), which allows awareness of key language dimensions and their relation to the learning of specific disciplines. Knowing how to effectively teach language in content areas is an issue for the provision of democratic and inclusive education.

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6. See also work by Lent (2016).

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## Riassunto

Sono passati più di 25 anni da quando il CLIL è entrato nelle scuole di tutta Europa con obiettivi, modalità di realizzazione, strutture diverse da un Paese all'altro. A distanza di tempo e in assenza di un preciso quadro di riferimento, il CLIL mostra oggi limiti evidenti accanto a enormi potenzialità non completamente realizzate. Usando i dati di una ricerca condotta in Italia con quattro docenti CLIL di fisica, l'articolo vuole mettere in luce la possibilità che il CLIL possa servire per far comprendere a ogni docente, indipendentemente dalla disciplina che insegna, il ruolo che la lingua può svolgere nell'apprendimento. I dati raccolti e riferiti al contesto italiano di cui si illustrano le caratteristiche mettono in evidenza la centralità del ruolo del docente di disciplina detta non linguistica, un ruolo talmente importante da meritare vera attenzione nella definizione dei prossimi passi di quella che viene chiamata "CLIL agenda" per i prossimi anni.

## Resumo

Pli ol 25 jaroj pasis depost la enkonduko de ELIL (Enhave kaj Lingve Integrita Lernado) en lernejojn tra tuta Eŭropo, kun celoj, metodoj kaj organizaj strukturoj kiuj ankaŭ ofte varias de lando al lando. Tra la paso de la tempo, kaj ankoraŭ sen preciza referenca kadro, ELIL montras sian grandan potencialon kaj samtempe siajn limigojn. Utiligante donitaĵojn el esploroj faritaj en Italio de kvar instruistoj de ELIL kiuj instruas fizikon per fremda lingvo, la artikolo celas lumigi la eblecon, ke ELIL povu servi por konsciigi ĉiun instruiston, sendepende de la instrutemo, pri la rolo kiun la lingvo povas ludi en lernado. La kolektitaj donitaĵoj, kiuj rilatas al la itala eduka sistemo, emfazas la centran rolon de la unuopa instrutema instruisto en realigo de ELIL. Ili ankaŭ atentigas pri la bezono de gravaj ŝanĝoj en la tagordo de ELIL en estontaj jaroj.

## Address for correspondence

Silvia Minardi  
Liceo Statale Quasimodo  
via Novara, 79  
20013 Magenta (Milan)  
Italy  
[silvia.minardi@gmail.com](mailto:silvia.minardi@gmail.com)

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