



CLIL

TRAINING GUIDE

*Creating a CLIL Learning Community
in Higher Education*

CLIL
CONTENT AND LANGUAGE
INTEGRATED LEARNING



FICHA TÉCNICA

TÍTULO

CLIL Training Guide
Creating a CLIL Learning Community in Higher Education

AUTORES

Margarida Morgado
Margarida Coelho
Mária del Carmen Arau Ribeiro
Alexandra Albuquerque
Manuel Moreira da Silva
Graça Chorão
Suzana Cunha
Ana Gonçalves
Ana Isabel Carvalho
Mónica Régio
Sónia Faria
Isabel Chumbo

CAPA

Luciana Oliveira

PAGINAÇÃO

Carlos Gonçalves

IMPRESSÃO E ACABAMENTO

Printhauss

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DE FACTO EDITORES
Rua Dr. Francisco Sá Carneiro, 34 – 3.º Dto
4780-448 Santo Tirso – Portugal
geral@defactoreditores.pt
www.defactoreditores.pt



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LIST OF ABBREVIATIONS

CEFR	Common European Framework of Reference for Languages
CLIL	Content and Language Integrated Learning
ECML	European Center for Modern Languages
EFL	English as a Foreign Language
EMI	English-Mediated Instruction
ESP	English for Specific Purposes
FL	Foreign Language
HE	Higher Education
HEI	Higher Education Institution
L1	First Language or Mother Tongue
TBL or TBI	Task-Based Learning or Task-Based Instruction
ReCLes.pt	<i>Associação em Rede de Centros de Línguas do Ensino Superior em Portugal</i> [the Portuguese Network Association of Language Centers in Higher Education]

INTRODUCTION

The ReCLes.pt CLIL Training Guide presents the theoretical and practical basis for the creation of a CLIL Learning Community of foreign language teachers and subject teachers with the topics organized across four chapters. In Chapter 1, the objectives and structuring of the ten hours of sessions and the learning outcomes are presented with an introduction to CLIL design in higher education (HE), forms of interdisciplinary cooperation/collaboration, and a number of models for classroom management. Chapter 2 provides enriching material to help teachers better understand the principles of a CLIL Learning Community and CLIL itself, including interactive and student-centered methodologies, a focus on oral interaction and critical dialogue, suggested activities, and the key points for organizing a successful CLIL module. In Chapter 3, on CLIL materials and resources, sections cover the definition and examples of scaffolding and activating prior knowledge as well as the selection and adaptation of scaffolding materials, including the use of electronic media and a terminology-based approach.

The proposed terminology-based approach focuses on the collection, description, processing, and systematic representation of concepts and their designations. As such, the use of terminology can become a key construct in CLIL teaching, involving the search, production, use, and dissemination of information. International organizations, networks, and multinational professional communities are involved in these steps within the global communication process, providing real motivation for students participating in the CLIL learning process.

The final chapter covers the essential research design which has made the ReCLes.pt CLIL project possible. It is included in the hopes of providing a road map for other

education organizations or institutions interested in implementing a similar project on their own.

Although the pilot experience that resulted in this *ReCLes.pt CLIL Training Guide* was exclusively in English, most of the recommendations here addressed also apply to other languages.

If you are interested in obtaining any logistical support or advice for your projects, feel free to contact us at <http://gaie.iscap.ipp.pt/recles/index.php/contactos>.

CHAPTER 1

INTRODUCING THE CLIL LEARNING COMMUNITY

This chapter explains the objectives of developing a CLIL Learning Community and offers details on these objectives, learning outcomes, and activities of the ten-hour training course developed for that HE learning community. It further summarizes the four stages of CLIL course design – needs analysis, review of genres and materials, analysis of language and content, and planning – some of which will be developed in more detail in chapter two. The chapter closes on some notes on the importance of promoting the CLIL Learning Community in HE institutions (HEI) and offers suggestions on further interdisciplinary work that might be developed from this CLIL experience as well as some tips on desirable CLIL classroom management.

1. OBJECTIVES

The overall objectives for the CLIL Learning Community are the following:

- Create a cooperative shared space (Wenger 1998) of foreign language (FL) teachers, and subject teachers;
- Learn about the CLIL approach and its differences from other approaches, such as EMI, EFL, or ESP in higher education;
- Learn about CLIL methods and skills;
- Find context-appropriate CLIL designs;
- Define common ground for a comparative CLIL pilot study across different institutions and subject areas.

2. THE TEN-HOUR TRAINING COURSE

The objective for the ten-hour CLIL Learning Community is to provide a number of types of expertise. To that end, the FL teacher will:

1. Provide strategic guidance on HOW to teach the subject in a foreign language;
2. Encourage and provide tools for the growth of a toolkit for the correct use of the FL;
3. Direct subject teachers toward the Best Practices in teaching and learning through a FL and promote competence in the FL itself;
4. Promote positive attitudes toward the metacognitive and meta-affective awareness that is required in intercultural settings, represented by the co-mingling of languages and cultures in the same classroom.

Note that while the FL teacher cannot help specifically with WHAT is to be taught about the subject, advice on HOW to teach the subject in a foreign language is the foundation of any CLIL Learning Community. In developing these primary objectives, subject teachers will have the opportunity to:

- acquire fresh ideas for teaching subjects in English;
- understand the nature and benefits of code-switching in language learning as a natural result of working in two (or more) languages;
- be able to subdivide and effectively deliver classroom instructions to maximize student comprehension as well as students’ ability to successfully complete any tasks required;
- work with feedback to understand its positive contribution toward student motivation;
- gather prepared teaching materials which can then be adapted;
- establish relationships with colleagues from other departments and schools;
- work inter and intradepartmentally;
- recognize the value of the L1 in teaching/learning a FL;
- integrate the network of shared responsibility of the FL teacher and the subject teacher;
- design tasks to optimize CLIL teaching/learning;
- assess the challenges to the educational environment involved in the model change that CLIL implies.

3. LEARNING OUTCOMES

The learning outcomes for subject teachers involved in the ten-hour training course will include the competence to:

- sustain an ever-growing positive attitude toward language (and culture) learning as a lifelong pursuit for everyone involved – teachers, students, and HEI;
- demonstrate more security and confidence in their developing language competences (see the Common European Framework of Reference for languages – CEFR);
- identify clearly how knowledge of the FL can support teaching of the subject;
- construct lesson plans that integrate teaching of the FL into teaching of the subject;
- create autonomy-building formative assessment that considers both aspects of the subject and the FL;
- develop tasks for the subject that involve a variety of lifelong learning competences – critical thinking, creativity, initiative, problem solving, risk assessment, and decision taking;
- learn to not only feel more confident with their own foreign language competence but also learn how to model that language for their own (CLIL) students;
- break down the apparent animosity (Hillyard 2011) between FL teachers and the subject teachers in training;
- learn to judge the cognitive demands of the materials to be created.

FOCUS ON STRATEGY DEVELOPMENT

1. Ask subject teachers to identify the most relevant objectives in sections 1 and 2 and discuss their choices.
2. Subject teachers can analyze the activities to be carried out during the ten-hour training course (section 2) and select and discuss the 3 most and least relevant activities.
3. Discuss the potential difficulties of any of the points under learning outcomes (section 3).

4. CLIL DESIGN IN HIGHER EDUCATION

It is important to define what kind of CLIL partnership you wish to implement in the community of learning. Note that this community of learning is essentially about language teachers and subject teachers collaborating to implement a CLIL module, which raises a number of issues, including:

- Understanding the role of the FL teacher as informant, consultant, collaborator;
- Setting up a team;
- Determining Best Practices for FL teachers and other subject teachers to work as colleagues;
- Balancing the content to be taught and the language teaching within the course module for optimum CLIL design. Language learning aspects should not, in any case, be perceived as less important than specialist content knowledge learning;
- Making effective use of student feedback in language and content by designing strategies to receive student input and involve students in teaching decisions.

Generally, the course design process is divided into four stages, namely a needs analysis, a review of the materials, an analysis of language and content, and planning the CLIL module. The stages can be broken down as follows:

Stage 1 – Needs analysis

- student language needs (in terms of level to be acquired)
- what students may find motivating
- subject specific goals
- what the students are expected to be able to do

Stage 2 – Review of genres and materials used in the subject area

- an online lecture on the subject
- a newspaper article on the subject
- a text from a textbook or introductory textbook
- CLIL materials in the subject area
- a list of useful resources in English

Stage 3 – An analysis of language and content

From the perspective of the FL teacher, this stage serves to determine the FL competence level of the students and validate the corresponding material to be used. From the perspective of the subject teacher, it is an opportunity to analyze the level required by the content.

These resources will have to be adapted from their initial target audience of native language users to the purposes of a CLIL module. Therefore, still within Stage 3, the following steps must be carried out by the two teachers, who together will further identify:

- relevant language elements, namely terminology
- the features necessary for understanding
- the language that may contribute to promote student language development
- collocations

Once these language and terminology decisions have been made, the main specialist competences to be acquired can be more readily defined (see chapter 3 for more details).

Stage 4 – Planning the CLIL module

The CLIL module should focus simultaneously on the FL and the subject as a hybrid of both a competence- and a text-based approach (Krekeler 2013). By integrating language and content in teaching, the students are expected to acquire competences to learn, think, speak, and write about specific content in English with increasing confidence (see chapter 2 for more detail on the educational principles of planning a CLIL module for HE).

FOCUS ON STRATEGY DEVELOPMENT

1. Subject teachers can assess their own language competence in English by applying the CEFR self assessment grids (easily downloaded from http://www.coe.int/t/dg4/education/elp/elp-reg/Source/assessment_grid/assessment_grid_english.pdf) and then discuss whether they would use it to assess their own students' English levels.
2. Subject teachers can collect examples from sample materials described in stage 2 to plan their CLIL module. Suggest that they consult the section on *Using Electronic Media* in chapter 3 to find CLIL resources for their own subject areas. These materials will be used in later stages of the ReCLes.pt CLIL training course to model scaffolding and adaptation techniques.

5. FORMS OF INTERDISCIPLINARY COOPERATION/COLLABORATION

HE campuses may be prepared to set up these CLIL training courses immediately or FL teachers may be helping the organization to take on this challenge. In either case, interaction with the establishment will require that FL teachers create or maintain the sense of urgency that these classes are essential for positive learning outcomes of HE students.

Fomenting positive relations with the Board or Presidency will be fundamental and that can be the first step toward interdisciplinary collaboration. FL teachers should ensure that they include the stakeholders in their plans and vision so that more and better change will be possible with support from higher up. Knowledge creation and sharing are important factors in multiplying their commitments.

In terms of other subjects, the cross- or interdisciplinary approach blends in with the European key competences for lifelong learning, identified as

Communication in the mother tongue	Communication in FLs
Mathematics and basic Science & Technology	ICT competence
Learning to learn	Social and civic competences
Sense of initiative and entrepreneurship	Cultural awareness and expression

Table 1 – European Key Competences for Lifelong Learning
Source: European Parliament and the Council (2006)

This plethora of skills means that any crossovers will promote more than one competence area and contribute to overall student competence.

In just a few examples of this cross-fertilization in action, students in the two areas of Sports and Communication & Multimedia can be encouraged to work together to promote a sports event while Engineering & Environment students can collaborate with future child educators to write and illustrate student books that will motivate young ecologists and humanitarians. Yet another interdepartmental challenge could involve Hotel Management students in collaboration with the Catering degree to build the ideal communication instrument to reduce loss in food spoilage or to better control exposure to potential food allergies (for more detail on how this works, see Arau Ribeiro 2015). These are just a few ideas to get you started. Indeed, the more involvement the students have with other skill set areas, the better developed they themselves come to be for optimum participation in their professional and personal future.

Inter and intradepartmental collaboration, even with other schools, can make use of Web 2.0 tools (see chapter 3 on “Using electronic media”). This includes teaching exchanges and even promoting learner activities across campuses.

FOCUS ON STRATEGY DEVELOPMENT

1. In small groups, develop the 8 key competences with examples and discuss the results in terms of how to integrate these aspects into their own subjects.
2. Brainstorm more examples of cross-fertilization.
3. Quick check at the beginning: Solicit examples of Web 2.0 tools to see if the Learning Community has a good grasp of these interactive tools.

6. MODELS FOR CLASSROOM MANAGEMENT

Among the numerous models for classroom management, a favorite is the teacher-lecturer model. Despite years of development and evolution in the Sciences, the teacher-lecturer model has not lost much of its appeal and this is most unfortunate for students everywhere. These CLIL Teacher Training courses must be an important front in the crusade to diversify the variety of models for classroom management to improve learning outcomes and create a positive environment for learning.

Some of the recommended approaches are as simple as learning the names of your students and arranging a seating formation that both the teacher and students are comfortable with. If you intend to encourage interaction among the students, the traditional model, where the students are all facing the teacher, will not help. A popular complaint is that there are too many students to bother to learn their names; if that is indeed true, learn just a few and the rest may think you know their names too! If you really cannot remember names, nameplates on top of desks, with photos even, are reasonable memory helpers.

Other details that help to establish a positive classroom climate are the availability that you project as a teacher. This is not just in the sense of setting and keeping office hours but also your availability to listen when a student needs more support or to pause for a smile when things are moving too fast. This behavior also encourages students who may perceive that you are recognizing their individual differences and their response to your feedback will be positive. Finally, another way to contribute to a more positive learning environment is to establish clear expectations for student learning and behavior. The distraction of cell phones or their use may be an issue for you, so provide guidelines for their best use; the course may require plenty of extra hours outside of class working on research and writing because you recognize that metacognitive skills are most thoroughly cemented via the act of writing so be sure to let the students know that at the start. Furthermore, classes should truly begin on the first day. Every learning moment is precious and so a class that is dedicated

solely to presenting the aims of the course is a missed opportunity for teachers and students alike.

FOCUS ON STRATEGY DEVELOPMENT

1. Discuss the pros and cons of starting with real material on the first day of classes.
2. Brainstorm situations in which teachers are most unprepared to be available to their students. Consider ways to promote availability.
3. Consider the importance of making classroom rules clear right from the start and discuss cases in which this makes a big difference.
4. Do you know any tricks for remembering students' names? Share.
5. Discuss the disadvantages of the teacher-lecturer model.

CHAPTER 2

UNDERSTANDING CLIL

This chapter on CLIL methodologies and educational principles should assist CLIL learning communities in understanding what CLIL is and is not. It starts by describing some of the principles that assist in creating a CLIL learning community. Next, activities are presented to support interactive and student-centered methodologies. A series of student difficulties are highlighted and learning activities are suggested to promote student learning and development of their competence in listening, speaking, reading and writing. Finally, key points for organizing a successful CLIL module stress the language aspects to be reinforced, since it is the subject specialist that will be developing the CLIL module.

1. PRINCIPLES OF A CLIL LEARNING COMMUNITY

During the ten-hour CLIL training course, FL specialists and other subject specialists have the unique opportunity to come together in a number of ways to learn about how to implement a CLIL module successfully.

1. The ideal situation is to create a **community of learning**. Communities of learning are shared spaces of trainers and subject teachers where there is scope for the discussion of personal interests, the aims and objectives of each individual, as well as how best to identify the means to achieve them. This is truly important as each disciplinary area will have preferred ways of organizing content, methods, interaction with students, and so on.

2. This CLIL Learning Community should ideally be shaped as a **space for inquiry**. HE lecturers and professors have their own preferred ways of teaching and their convictions on how students learn, which are a starting point.
3. The ideal CLIL learning situation is one of **co-learning**. The CLIL Learning Community works best when all participants are welcome to share their individual interests. Identify the specific interests of the participants early on (even before the course begins, if possible) and focus debates on those aspects.
4. Introspection on **teaching and learning habits** is fundamental.
5. Based on their experience, participants should consider **student difficulties in both language and content** (the CLIL approach), reflecting on these questions:
 - What do students consider appropriate and inappropriate?
 - What are their priorities?
 - How would students react to these materials in English, among others:
 - reading and/or writing assignments
 - descriptive assignments, such as identifying differences between texts/processes
 - vocabulary retrieval and other vocabulary building exercises
 - understanding textual and rhetorical traditions of academic English
 - interactive discussions using both languages (FL and L1)
 - quizzes with multiple choice questions and answers to review content
6. The CLIL Learning Community must provide a clear notion of what is important from **the language point of view**, so that subject teachers can feel empowered to then combine the language perspective with their aims and objectives for the competences to be acquired.

The point of CLIL is NOT to make the foreign language a mere by-product of what goes on in the classroom. In an integrated way, language and content should be learnt together for a common purpose of (1) cognition + (2) knowing the cultural contexts of the discipline + (3) content/competences + (4) communication. Participants need to work with the FL teacher to best determine a number of aspects of the language that students will specifically need to use in the FL, namely terminology of the domain or subdomain; content/competences of the field. This will be further detailed in the next chapter in the section “A terminology-based approach to CLIL”.

FOCUS ON STRATEGY DEVELOPMENT

1. In the first session of the Learning Community, participants write down the three most important questions they would like to see addressed in the course. These questions contribute toward defining a line of inquiry that the FL teacher can help to direct and resolve.
2. Encourage the free exchange of comments and questions on all matters of teaching and learning.
3. In relation to teaching and learning habits, brainstorm about:
 - Which patterns of teaching and learning do you consider effective? Why?
 - Who are your role models?
 - Can you name one good example of how teaching and learning is effective in your disciplinary area?
 - Which changes would you be prepared to introduce in your teaching practice?
 - How can you effectively transition into these changes?
 - What do you consider fundamental to develop the professional identity of the students in your classes?
4. Invite subject teachers to write for one minute on the most important concepts (use the Lightning Notes technique, for example). These texts are then to be corrected by other subject teachers for both content and language.

2. INTERACTIVE AND STUDENT-CENTERED METHODOLOGIES

Student-centered methodologies promote interactive learning that is more stimulating to both the teacher and the student than traditional teacher-oriented classrooms. Note, however, that student-centered does not mean that the teacher “abandons ship” but rather that the tasks designed have student needs clearly in mind and that the nature of classroom discussion successfully integrates the students in a balanced manner.

Adult learners acquire competence most effectively and are more motivated when they understand WHY they are doing something. Communication and discussion of the reasoning behind and the rationale for the activities selected is a prerequisite in the classroom. The following chart juxtaposes the traditional characteristics of the classroom with those of a truly interactive class.

Teacher-centered classroom characteristics	Student-centered classroom characteristics
Teacher lectures	Students engage in discussion on the topic based on individual or group readings and remember it better
Lots of teacher talk	Lots of student talk
Questions are asked at the end of a topic	Regular interruption and discussion takes place throughout any topic presentation
Students take copious notes on lectures	Students write their own and group interpretations of the material then confirm it through their own reading and teacher correction of their writing
Teacher controls the lesson	Students feel more empowered as they participate constructively
Students learn privately	Students learn collaboratively

Table 2 – Teacher-centered and student-centered classroom characteristics

When the previous learning structure (in the case of the subject teachers, their traditional higher education academic training or, in the subject teachers' respective classrooms, the high school experience) has not emphasized student-centered learning, these behavior patterns are more difficult to jump right into so do not give up too soon. Students will be surprised that they are being given a different role in the classroom and, when they find evidence that it is true, they will rise to the occasion. Teachers will find that their students are more comfortable when they are provided with appropriate classroom language to effectively communicate.

The types of activities that promote interactivity involve tasks that promote student talk in the classroom. All of these tasks can be practiced in the CLIL Learning Community before actually being used in HE classes, using content competences and the topic of interculturality as a basis.

Small groups	Discussion to reach a consensus on a problem presented by the teacher. Think-Pair-Share and ConcepTests (conceptual multiple-choice questions, http://serc.carleton.edu/introgeo/interactive/conctest.html)
Lightning notes	One-minute writing activities where the students describe the most important concepts learned or identify areas of ongoing difficulty
Demonstration Prediction	After beginning a laboratory demonstration, the teacher pauses to give students the opportunity to write out their prediction of the steps to be followed and the possible results. Following the end of the demonstration, students can compare their predictions to what actually occurred

Case studies	Students come to conclusions, making their decisions based on the details of the case study (which can be drawn, for example, from the peer-reviewed collection of more than 510 cases in all areas of science at the American National Center for Case Study Teaching in Science) http://sciencecases.lib.buffalo.edu/cs/collection/results.asp?search=&subject_headings=&educational_level=Undergraduate+lower+division+&type_methods=&topical_areas=&x=38&y=16
Peer-review	The student is the teacher, correcting colleagues' written work according to previously established criteria
Picking the next victim	Students, in turn, get to choose the next person to respond to a question from their peers or from the teacher
PBL	Problem-based learning, which can be the resolution of a complex, multilayered problem and its various steps, either individually or in groups, http://groups.physics.umn.edu/physed/Research/CRP/on-lineArchive/crcecm.html
Invent a procedure	Before learning about the topic, students propose procedures to reach the desired conclusions. Here the purpose is not so much a "correct" response but the discussion and analysis involved, http://www.cwsei.ubc.ca/resources/files/Teaching_Expert_Thinking.pdf
Concept mapping	Students create visual representations of what they have learned theoretically, interconnecting all of the key steps and topics, http://www.flaguide.org/cat/conmap/conmap1.php
Guided discovery worksheets	Students work through particularly troublesome problems, following a chain of logic, http://www.physics.montana.edu/physed/lecture-tutorial-samples.pdf

Table 3 – Types of activities that promote interactivity in the classroom

Other diversified activities include visualizing, predicting, responding to feedback, testing intuitions, carrying out virtual experiments, analysis of findings and procedures. To make the activities even more attractive, integrate them into Web 2.0 applications.

FOCUS ON STRATEGY DEVELOPMENT

1. Ask participants, in pairs, to carry out one of the activities listed in table 3 through a practical activity using materials they have already collected to teach their own CLIL module. The others will role play the students of a CLIL module.
2. Create a list of effective classroom language as a group project. Ask someone to record the ideas on the board but the recorder does not need to think; the others should instruct the recorder on what to include in the list. Discuss the results.
3. Brainstorm Web 2.0 applications for some of the activities and discuss why they may be more attractive this way.

3. ORAL INTERACTION AND CRITICAL DIALOGUE

The dialogic dimension in the CLIL classroom has to be viewed as a requisite in order to develop and exploit the natural use of language while teaching contents in other non-language areas. Students should feel engaged to participate actively in the CLIL classroom. It is important to weigh what is being communicated and its purpose, how it is being communicated, and what interaction patterns are used to communicate content/competences (Llinares García, Morton, & Whittaker 2012).

The focus of the content/competences and the CLIL approach will definitely influence the students to engage in cognitively demanding and meaningful activities, which in turn will give them more opportunities to communicate and feel more motivated to do so (Llinares García 2013). In order to promote dialogue, teachers should adopt a less instructional register, so that student participation increases and teacher talk becomes more like a regulatory maestro of a symphony, indicating when and who should speak, why more consideration/information is needed, and generally keeping order in the classroom while bringing a wide variety of students into the discussion.

Nonetheless, many claim that the students' oral output in CLIL classrooms is minimal due to the lack of student proficiency in the foreign language. CLIL approaches try to overcome this problem by creating dialogic/interactive communication with the students and by providing meaningful activities in which they are meant to intervene and participate fully.

CLIL methodology supports the development of a repertoire of speech acts that play a central role in CLIL lessons to cover the following functions:

- Describing – identifying, defining, and classifying;
- Explaining – providing examples, to elaborate or simplify;
- Asking questions – drawing concept maps and questioning;
- Evaluating – arguing or providing evidence;
- Drawing conclusions – concluding and explaining.

This dialogic approach to teaching allows students to participate in interaction using a more complex language, to learn communication strategies through active usage (when and how to intervene, how to express or clarify ideas, to show agreement or disagreement, to negotiate, among other functions), and to recognize different perspectives on a topic.

CLIL requires the implementation of student-centered learning and excellent results for FL acquisition can be obtained using both a task-based methodology and

cooperative learning. In order to develop activities based on tasks, which require *doing things through language*, students must manipulate information for a variety of reasons:

- to solve problems;
- to share ideas and knowledge with other classmates;
- to discuss solutions and to (re-)examine assumptions.

Questioning

Good teaching depends directly on good questioning. Asking questions in the student-centered classroom fulfils a number of desirable goals in the CLIL classroom since questions can serve at least the following functions:

- review and summarize previous lessons;
- evaluate students' preparation and check on homework or class work;
- develop interest and motivate students to become actively involved in lessons;
- develop critical thinking skills and inquiring attitudes;
- nurture insights by exposing new relationships;
- assess achievement of instructional goals and objectives;
- stimulate students to pursue knowledge and acquire competences on their own.

At least three types of questions can be identified, each with specific purposes in the CLIL classroom.

Procedural questions support classroom management and routines.

They do not indicate any content learned or the competences acquired; instead they inquire about the process of learning, as in

- “Is everything clear?”
- “Any problems?”
- “Did you understand?”
- “Can you see that...?”

Display questions help the teacher test student knowledge and understanding.

Although the teacher already knows the answers but the student is still required to respond, revealing the knowledge or competence in question, as in, “Where did the Tunnel Boring Machines start to dig the tunnel?” or “What happens in a comminuted fracture?” All display questions are convergent or information-seeking in nature so that they do not require original thought or critical reflection. As a result, these simple elicitations of factual information have limited possible answers.

Referential questions stimulate authentic language production in response to a genuine question. The teacher does not know the answer and is interested in hearing the students' responses to questions, as in the following examples:

- “What’s your favorite historical period?”
- “Why would you agree that white-hat hackers are actually important?”
- “What would you like to learn about this topic?”

These questions may be either convergent, like display questions, or divergent such that they require a higher level of thinking, like interpreting, evaluating, inquiring, making inferences, and synthesizing.

FOCUS ON STRATEGY DEVELOPMENT

1. Practice eliciting information from each other in a role play of teacher-student. Be sure that each participant gets the opportunity to try both roles.
2. Discuss the impact of each type of question on the student-teacher relationship.

4. CLIL ACTIVITIES

CLIL learning activities are designed to generate genuine need and desire to communicate via the foreign language. Based on the point in the learning process and what the teacher has understood as the learner's preferences, a variety of tasks should be created and provided for learning to occur. For all receptive and productive purposes – listening/reading and speaking/writing – CLIL tasks are designed to be subject-oriented so that both language and content are included.

Some activities will focus on receptive skills, which are of a genre known as *read/listen and do*, when reading/listening activities are followed by activities such as:

- label a diagram/picture/map/graph/chart;
- complete a table;
- make notes on specific information (e.g. dates, figures, times);
- reorder information;
- identify location/speakers/places;
- label the stages of a process/instructions/sequences of a text;
- fill in the gaps in a text.

Other tasks of this genre include, but are not limited to:

- jigsaw reading and jumble tasks;

- comprehension and/or vocabulary tasks, like matching words to definitions or pictures and discovering the meanings through the text.

Speaking activities can be designed based on:

- question loops and partial sentences with Q&A, terms, and definitions;
- class surveys using questionnaires;
- word guessing games;
- the game *20 Questions*, with a support framework for asking questions;
- group discussions and impromptu individual/group presentations;
- the creation of visual aids, posters, and poster presentations.

Best results are expected when these activities are set in a content/competence rich classroom environment that is founded on task-based learning activities and supported by scaffolding (to be described in chapter three).

FOCUS ON STRATEGY DEVELOPMENT

1. Ask subject teachers to consider a topic they usually teach and then adapt it according to the suggestions given in section 4 for reading/listening and speaking activities in English. Subject teachers are encouraged to also use the material they initially collected.
2. Role play at least three of the activities in section 4.

5. KEY POINTS FOR ORGANIZING A SUCCESSFUL CLIL MODULE

The development of reading skills and strategies will include not only vocabulary building but also key pronunciation and intonation, sentence construction, and grammar recognition – including the identification of the use of different voices (passive or active) for better communication. Examples of difficult pronunciation in English are the 5 (or 6 and more!) sounds of *-ough*, short and long vowels, the influences of the letter *r*, and blends, digraphs, and diphthongs.

A great focus on the positive contribution of large quantities of reading and writing to the development of general language competences and metacognitive skills. The activities involved in recycling the reading and writing topics, involving relevant feedback whenever possible, should involve taking initiative, problem solving, risk assessment, and decision making to integrate lifelong learning competences as well.

To help subject teachers design tasks for any 30-hour CLIL course or module, strategies for acquiring these basic competences must be included:

- meeting, greeting, and talking with/about others and yourself;
- considering the past and motivation for the future;
- visualizing, understanding, using, and describing contextual components: people, spaces, objects, and tools;
- labeling and itemizing surroundings;
- comparing and contrasting situations and behavior;
- observing, analyzing, and critically engaging;
- discovering and re-creating.

Scaffolding (see chapter 3) is at the heart of all CLIL teaching and, as the FL teacher, you can model this appropriately supportive teacher behavior by remembering to:

Model whatever you are presenting with examples that can be imitated	Create bridges that build on previous knowledge structures
Develop student learning skills for planning, monitoring, and assessing	Contextualize by adding more content to sometimes more difficult academic language
Build thinking frameworks and charts to help illustrate ideas	Present the same content through a variety of genres

Table 4 – Appropriate CLIL teacher activity (adapted from Walqui 2006)

Overall, the aim is for the future CLIL modules and courses of your subject teachers to be constantly connected, correlated, and integrated into their classes so that each of the following teaching skills are carried out:

Provide opportunities for students to experience and explore topics	Reinforce all competences and knowledge visually, aurally, and kinesthetically
Multiply their opportunities to describe the processes and components of a task, experiment, process	Give feedback for all written and performed oral activities
Create tasks that require identification and labeling	Assess student development in terms of acquired competences in both content and language
Practice the input in every imaginable way ...	Decide whether to maintain the activity or change the activity for the next lesson plan

Table 5 – Teaching skills

A factor that will reduce anxiety during the training course is to make it clear that their L1 is not to be checked at the door; the subject teachers, as language learners, can make valuable use of their L1s when learning a FL and that fact should be honored with their own students in the classroom as well.

Subject teachers must also be made aware that the more diverse languages and cultures represented in a classroom, the more likely it is that the dynamics and noise level will be influenced. Student interaction, reinforced by your instructional strategies, necessarily means more noise.

Also diverse are the multiple intelligence strategies brought to the classroom by each individual. These should be optimized so that learning tasks cover many different means of expression – musicality and physical involvement as well as oral and written communication can promote a positive classroom environment.

Breaking the cycle of teacher-generated questions is a challenge but subject teachers can learn to give this responsibility to their students in group activities that are appropriately scaffolded by the teacher. Subject teachers should also be instructed in the difference between knowledge checking or display questions and referential questions that generate interactions that better reflect social communication.

To conclude, by the end of the sessions, all participants in the CLIL Learning Community will fully grasp the need to:

- Stop having all the answers
- Give the power to the students
- Let students build content
- Provide interesting, stimulating basic blocks on which to build, which takes time
- Correct student work – oral and written – in a timely fashion

FOCUS ON STRATEGY DEVELOPMENT

1. Rather than the particular material that the subject teachers are processing, reflect on a “triarchic model” of the componential, experiential, and contextual facets of intelligence. What are the learning benefits of this approach?
2. What are the possible (dis)advantages to giving power to your students?
3. The conclusion lists five behavioral goals for the Learning Community. Discuss what will be most difficult to put into action and what they are prepared to do more readily.
4. Consider these aspects for developing material:
 - Have you considered breaking the topic down into its parts or components?
 - What about considering other ways to bring the topic to life rather than just reading or hearing about it?
 - Can you put the topic into other contexts?

CHAPTER 3

CLIL MATERIALS AND RESOURCES

This chapter focuses on how to select, adapt, and recreate teaching and learning materials for CLIL and introduces scaffolding as a multifaceted teaching technique and learning tool to facilitate understanding and student production by building on their prior knowledge. The incorporation of electronic media to promote student-centered and interactive learning in the CLIL modules is a valuable resource for CLIL courses as is the terminology-based approach to CLIL so that subject teachers and their students understand and use specific tools and concepts in particular discourse domains.

1. SELECTING CLIL MATERIALS AND RESOURCES

It is important to remember that your students' English levels do not irretrievably limit the level of the materials to be used. B-level students may be at level B1 but their reading materials can certainly be up in level C1. The beauty of B-level learners is that they are *independent* language users and can thus use their own toolkits to comprehend and produce ever-new language. Please note that, in addition to effective classroom language, future CLIL teachers will want to learn and promote polite language, which improves with the use of modal verbs.

Materials that the CLIL subject teacher will want to become familiar with are inextricably related to the teaching objectives and the learner outcomes. These include documents to help subject teachers with the following areas:

- **Vocabulary teaching**, which will involve teaching objective 1, *Provide strategic guidance on HOW to teach the subject in a foreign language*
- **Grammar requirements**, which will involve teaching objective 2, *Encourage and provide tools for the growth of a toolkit for the correct use of the FL*

- **Assessment strategies**, which will involve teaching objective 3, *Direct subject teachers toward the Best Practices in teaching and learning a FL and promote competence in the FL itself*
- **Reading material to stimulate discussion and debate**, which will involve teaching objective 4, *Promote positive attitudes toward the metacognitive and meta-affective awareness that is required in intercultural settings, represented by the co-mingling of languages and cultures in the same classroom*

Authenticity will be the primary guide to selection of material for any CLIL course. Subject teachers will need to consider the sources of their materials selections to determine their relevance and timeliness. You will need to create an ethic in your subject teachers so that their selections are meaningful, motivating, and even life stimulating. To determine the authenticity of the CLIL course overall, consider the content, which accounts for 48%, the language (24%), and materials and tasks (both accounting for 13%), among other factors (Dafouz Milne & Llinares García 2008).

Specific terminology is essential to the content so the vocabulary acquisition will not only include the consultation of glossaries and terminology databases available online but also, and more importantly, the creation of material by the students themselves, including conceptual maps and vocabulary lists. The skills of critical thinking and creativity are of great use in acquiring more relevant vocabulary with material that concentrates on tools for vocabulary building.

FOCUS ON STRATEGY DEVELOPMENT

1. To build vocabulary in English, learners must know the most commonly used prefixes and suffixes. Brainstorm and then compare the results with a list.
2. Knowing that polite classroom language can make an enormous difference, review the use of modal verbs.
3. Examine documents for authenticity and appropriate cognitive level. Discuss.

2. ADAPTING AND SCAFFOLDING MATERIALS

CLIL learning materials can be either existing authentic documents or adapted from different sources, in a variety of media and formats and developed with the CLIL's specific dual-focused approach of content and language.

CLIL quality learning materials support the creation of enriched learning environments and are cognitively highly demanding for learners. They also incorporate enhanced scaffolding and other learner support mechanisms, help students to build a sense of

security in experimenting with language, content, and the management of their own learning, and are both highly integrative and multilayered (Mehisto 2012).

The selection of CLIL materials should consider the students' interests and language proficiency, relevance to the content covered, to the course, and to the learning outcomes. Besides these general rules, selecting and/or designing appropriate CLIL materials should meet these other specific characteristics:

- *meaningful, challenging, and authentic* (Meyer 2010: 13), based on paper support and/or video clips, Flash-animations, web quests, podcasts, infographs, and/or other interactive materials on English language websites;
- *multi-modal input* that allows for the presentation of subject specific matters in a multiplicity of ways (maps, diagrams, etc.) and thus creates a diversified teaching environment;
- different learning styles and multiple intelligences are taken into account;
- visual literacy is promoted to better enable a deeper understanding of the specific content and competences and better illustrate and clarify complex matters presented in English.

The 4Cs framework – addressing Cognition, Content, and Communication as interrelated and all drawing on Cultural Contexts – is the flexible theoretical and methodological foundation generally used for selecting and developing innovative materials and planning motivational classes (Coyle 2008).

Another way to think about learning materials is to conceive them as information and knowledge devised to support the achievement of intended learning outcomes. Additional criteria for the development of quality CLIL materials (adapted from Mehisto 2012: 16-25) should serve to:

- help create a safe learning environment;
- foster cooperative learning and critical thinking;
- make the learning intentions and process visible to students, covering the language, content, and learning skills proposed;
- foster cognitive fluency through scaffolding of content, language, and learning skills development;
- seek ways of incorporating authentic language and authentic language use;
- systematically foster academic language proficiency;
- include self, peer, and other types of ongoing assessment;
- foster the development of learning skills and learner autonomy;

- allow student to reach well beyond what they could do on their own;
- help to make learning (more) meaningful.

Above all, CLIL materials must support the three cornerstones of furthering the inclusion of all students, contributing to the development of sustainable practices, and avoiding stereotypes and cultural clichés.

3. DEFINING SCAFFOLDING

Scaffolding is the metaphor used in CLIL to describe the process through which teachers and more competent student peers provide temporary support to help the learners move forward in their knowledge and to facilitate their understanding and production of language and competences in a given content.

In general terms, scaffolding aims at empowering the learners to apply these strategies and skills autonomously and helps them to “feel more confident about their foreign language skills and adopt a more communicative approach to language learning” (Girbau & Walsh 2012: 12). Gradually withdrawing scaffolds as students begin to demonstrate mastery of language and content, the teacher is also assisting students to become more independent in the classroom and shifting the responsibility for learning from themselves to the students.

Wood, Bruner, and Ross (1976) first applied the metaphor of scaffolding for construction of buildings to learning, underlining the importance of providing children with enough support – *scaffold* – in the initial stages of learning a new subject. For learning, the key features of scaffolding include:

1. **Extended understanding** – pushing students beyond their current abilities and levels of understanding, so that they internalize that understanding and use it on their own
2. **Temporary support** – allowing for autonomous work by the students who know that the scaffolding will not always be present
3. **Macro and micro focuses** – respectively, the goals and activities prepared by the teacher and both the spontaneous student-teacher and student-student interactions in class ((for more detail see Hammond & Gibbons in Hammond (ed.) 2001)

Scaffolding occurs when support is designed into activities developed in advance by the teacher and/or given in class, when the teacher spontaneously identifies an opportunity to not only develop a concept but also extend student understanding. This support can be offered by some of the following uses of Q&A (Sharpe 2001):

- *asking questions*

- *creating a particular line of thought for class discussion based on student responses*
- *encouraging the development of thought through further elaboration and/or redefinition*
- *consolidating vocabulary by repeating/reformulating/elaborating on students' remarks*

Above all, the features of scaffolding are best characterized by the following terms, which should provide ample cause for discussion in the CLIL Learning Community:

(dis)continuity	flow	intersubjectivity
contextual support	contingency	handover/takeover

Table 6 – Characterization of the features of scaffolding (adapted from Walqui 2006: 164)

These features are present in the most successful types of instructional scaffolding strategies identified below:

- **Modeling** – when the teacher provides examples, demonstrating what to do
- **Bridging** – connecting student's prior knowledge with new input
- **Contextualizing** – enriching learning either visually, with images, graphs, charts, and so on, or verbally, with metaphors or comparisons, to make the input more accessible
- **Schema building** – when the teacher helps students to organize their knowledge by creating representations of the input (e.g. charts or advance organizers)
- **Re-presenting text** – or presenting the content in another genre, written or visual (e.g. a play into a painting)
- **Developing metacognition** – in which students learn how to assess themselves and how to build learning skills strategies (e.g. planning and monitoring)

Another way to verify the use of scaffolding in the classroom is to identify whether the teacher is consistently carrying out the following activities (adapted from Mehisto, Marsh, & Frigols 2008: 29):

- building on students' existing knowledge, skills, attitudes, interests, and experience
- repackaging information and competences in user-friendly ways and cutting these down into manageable and logical chunks
- responding to different learning styles in each student and across the classroom
- fostering creative and critical thinking
- challenging students to take yet another step forward rather than remain in their comfort zone

4. EXAMPLES OF SCAFFOLDING

Scaffolding should always be considered when CLIL materials are being adapted so that content, language, and learning skills are dealt with appropriately. What follows is

a checklist (adapted from Mehisto 2012) to guarantee variety in the classroom through a number of activities that not only foster cognitive fluency but also support growing student autonomy.

Language can be scaffolded by:

- brainstorming related language and/or concepts before launching an activity;
- grouping language according to use (procedures, equipment, personal attitudes);
- presenting information in separate boxes that contrast two different language registers;
- embedding electronic pronunciation and dictionary links for difficult terms;
- using Web tools to create personal or group glossaries or clouds of vocabulary;
- rewriting texts so that;
 - ... new nouns are repeated frequently instead of substituting with pronouns;
 - ... sentences and paragraphs are shorter and more accessible;
 - ... confusing or distracting commentary is eliminated;
 - ... synonyms are given immediately in parentheses;
 - ... explanations of key vocabulary and expressions appear in hyperlinks or in the margins of the text.

Content can be scaffolded by:

- avoiding language that is expressed in compound or complex sentences;
- rewriting text with direct language whenever possible;
- highlighting or underlining key ideas or facts;
- using other graphics to organize new information and competences through Venn diagrams, tables, and charts;
- making material more accessible by dividing it up and creating useful subheadings;
- helping students connect individually with the topic by writing an introductory paragraph or assignment;
- providing an advance organizer to activate prerequisite knowledge and competences to help establish connections between new competences and possible prior knowledge;
- providing sample answers or examples of good work;
- indicating the clear parameters of a given concept;
- providing electronic links to animated descriptions and useful infographs (see section on Use of Electronic Tools).

Learning skills can be scaffolded by:

- providing a sample correct answer at the start/midpoint of an exercise;
- spotlighting samples of student work that is well-done;
- providing a commented sample of poorly executed student work;
- including planning, monitoring, and evaluation tasks;
- asking students to guess meaning from context;
- providing electronic samples of recasting and error correction techniques.

5. ACTIVATING PRIOR KNOWLEDGE

Scaffolding instruction in the classroom involves using strategies like those above to provide examples of outcomes before assigning a task and activating students' prior knowledge. By engaging learners, their competence or knowledge on the topic of a lesson is activated, which then provides an internal and effective link with the competences to be acquired in the learning process.

By preparing students to understand (new) competences and content and (new) language, student awareness of their own learning is enhanced; the gaps and differences between the present and future points in the learning process are made clear.

This strategy carries a number of additional benefits beginning with an increase in the students' intrinsic motivation to learn the competences and content of the lesson due to the more robust structure and creation of expectations about what is to come. Moreover, activating prior competences and knowledge not only helps learners to focus on the topic and the language of the lesson but also makes clear to both students and teachers the differing interests, learning styles, and multiple intelligences of the students. The prior activation demonstrates the value of both gathering information from student peers and accessing their alternative styles of learning. By stimulating cooperative learning, learners can help each other through the process of making sense and producing language and content while simultaneously acquiring competences.

To effectively activate prior student knowledge and competences, teachers can start by engaging their attention and reviewing what they already know about the topic. This can be done, for example, by designing *pre-reading tasks*, which will also help students to develop reading strategies across the subjects:

- sequencing pictures describing the content of a text;
- discussing a picture closely related to the text;
- matching pictures (fluxograms, infographs, or hierarchical charts) to words;
- discussing the title of the text;
- guessing which words or ideas might be used in a text with a particular title;

- providing words from the text and inviting students to guess what the text might be about;
- predicting content by using true/false questions (adapted from Tanner 2013: 6).

Other effective ways to activate students' past knowledge and competences include:

- brainstorming activities with open questions at the beginning of the lesson where learners share ideas with peers to stimulate their curiosity;
- Think, Pair, Share activities;
- K-W-L scaffolding or a learning log (a 3-column chart, for example) helps the students organize and reflect upon what they already KNOW, WANT to know and then LEARN from the lesson;
- vocabulary games (hangman, tic-tac-toe, anagrams, crosswords and so on).

To then validate new learner knowledge, CLIL teachers can prepare a quiz or a summary to fill in or correct, prepare a debate, carry out a survey or even a Webquest, and ask students to present the results.

In some CLIL contexts, when students are of the same mother tongue, communication is likely to be characterized by code-switching for the more advanced language learners and by simple substitution and translation for the less advanced. In the activating stage of the lesson, as students may never before have encountered the concepts, competences, and/or words, they may need to base the new terminology – general and specific – on their L1 before, during, and/or after they acquire it in English as well (Dale *et al.* 2010; Shellagh & Christine 2007: 9).

To further create a basis of understanding for the students to understand new content and competences before they begin to work on their own, CLIL teachers demonstrate correct and relevant language forms and grammatical structures to serve as models for student production with peers and/or on their own. Knowing what is expected can facilitate student participation in CLIL classes while helping them to not feel overwhelmed with the task(s) so their activities can be completed more confidently.

CLIL teachers who balance teacher-directed activities and design appropriate learner-directed activities will create the context for successful learning. To provide further scaffolding and motivation, the CLIL teacher will want to serve as appropriate language role models and, as a consequence, will actively demonstrate and teach the performance of fundamental language operations that are required for the communication of the content and competences to be acquired. These include language structures for the functions of **analyzing** or **interpreting** pictures, maps,

satellite images, and/or video clips and **verbalizing** complex higher order thinking processes (Meyer 2010: 14).

6. USING ELECTRONIC MEDIA

Technology persistently surrounds us in the form of computers, mobile phones, gaming consoles, tablets, smartphones, and laptops. Students are very familiar with most of these devices and they frequently use different media at the same time. The use of various electronic media and new technologies can strengthen their interest and commitment to a variety of subjects, which can, in turn, be harnessed by CLIL teachers. Given the multimodal role recognized for ICT in CLIL learning and teaching, the resources for multidisciplinary learning drawing on the media can simultaneously stimulate, guide, and facilitate student efforts to express themselves appropriately and effectively in English (Vlachos 2009).

Using ICT as a teaching resource not only facilitates active student participation and self-expression but also has provided a growing number of benefits for CLIL teachers (Bertaux et al 2010), who can easily:

- search for and download authentic material for use in the classroom;
- help students develop media literacy;
- guide students in using ICT in ways that are new for them and that enhance learning;
- guide students in maintaining an appropriate balance between the use of electronic and non-electronic sources;
- articulate ethical and safety issues surrounding the use of ICT;
- use ICT with students to establish interregional and/or international exchanges.

Multimedia materials make the CLIL teaching and learning environment a fascinating dialogic experience through the use of sound, video, and animation. A good desktop slide presentation (.pptx or prezi) is perceived as an effective way to transmit and absorb information. Its simplicity is based on the ability to include images, ranging from maps to cartoons, pictures, and videos alongside the text. Other authentic materials, from video clips and Flash-animations to Web quests and podcasts, are highly adaptable for use as CLIL materials.

Synchronous and asynchronous modes of interaction and collaboration can be built into CLIL materials supported by a number of mobile devices – wireless laptops, mobile phones, digital interactive TVs, MP3/MP4 players, and tablets, among others. The CLIL teacher and students must select the mode of interaction and the respective devices to be used.

Considering that the target language is the vehicle of communication, a number of different tasks can be implemented to promote the content and competences to be acquired. As previously pointed out, some more general tasks may involve:

- **describing:** identifying, defining and classifying;
- **explaining:** providing examples, to elaborate or simplify;
- **asking questions:** drawing concept maps and questioning;
- **evaluating:** arguing or providing evidence;
- **drawing conclusions:** concluding and explaining.

The following links provide a glimpse of the abundance of Internet tools that can be adapted for specific CLIL purposes. Please note that, as technology resources are always evolving, this list is limited in time and space.

Online educational platforms

Moodle

<http://moodle4teachers.org/>

This free, online learning management system self-described as enabling educators to create their own private website filled with dynamic courses that extend learning, anytime, anywhere. Designed to be responsive and accessible, the Moodle interface is easy to navigate on both desktop and mobile devices. CLIL teachers can work and share activities and materials in forums, wikis, glossaries, database activities, and much more.

Ted talks

www.ted.com

These videos on cutting edge topics with accompanying text guides or subtitles may be very useful for your CLIL materials.

Forums and chat rooms for different purposes

These forums can provide a useful discussion place where CLIL teachers and students can engage in conversations by posting messages on a board. This attractive channel helps to foster interaction, interesting conversations, and improved language and content/competence awareness.

<http://www.chatroomss.com/education-chat>

<http://forums.eslcafe.com/teacher/viewtopic.php?t=2623>

Software to create forums

<https://www.phpbb.com/> <http://www.simplemachines.org/>

Chat rooms

<http://www.chatzy.com/advanced.htm>

This real-time collaboration and discussion can lead to deeper processing of CLIL material.

Other synchronous activities

<https://www.anymeeting.com/AccountManager/AnyMeeting.aspx>

Video conferencing, Web conferencing, phone conferencing, and webinars can be used to promote additional interaction with the students.

Blogs

<http://clileducation.blogspot.pt/> <https://wordpress.com/> <http://education.weebly.com/> <http://edublogs.org/>

When students publish entries and comment on their peers, this engagement in a lively literacy community provides the additional benefit of enabling students to share their writing easily and regularly.

Wikis

<http://www.creativeeducation.co.uk/blog/index.php/2011/06/class-wiki/> <http://www.wikispaces.com/>

On these collaborative websites, users (whose participation can be controlled via a request to participate) can contribute to the construction and updating of the page.

WebQuests

<http://www.phpwebquest.org/>

This student-centered lesson format looks like a website and is therefore quite user-friendly. The teacher prepares the WebQuest, following a few simple and pre-established steps, to provide guidance for students to learn about a specific point or reach a conclusion about an issue in a collaborative manner.

Other social networking activities

Some functions available via social media that are helpful for individual work and further classroom interaction are:

- Creating videos/presentations on Powtoons <http://www.powtoon.com/> and **Animoto** www.animoto.com
- microblogging on **Twitter** www.twitter.com and social networking on **Facebook** www.facebook.com

Clilstore unites copyleft content and language integrated teaching materials in different languages. This site uses **Wordlink**, a Web-based facility which links arbitrary webpages automatically, word by word with online dictionaries, which in turn uses **Multidict**, a multiple dictionary lookup facility which makes use of freely available online dictionaries. Both Wordlink and Multidict were developed as part of the European-funded POOLS-T project (2008-2010) and more recently as part of the TOOLS project (Ó Donnáile 2012). CLIL teachers can create a unit for Clilstore at <http://multidict.net/wordlink/?navsize=1&sl=pt&url=http://multidict.net/clilstore/page.php?id=896>

Wordle at <http://www.wordle.net/> generates word clouds – personalized with different fonts, layouts, and color schemes – from a source text to give greater prominence to the most frequent words.

Dipity at <http://www.dipity.com/> generates timelines, combining the power of multimedia and social media content with trends like timestamps, geolocation, and realtime updates. Manually create timeline events or easily connect your existing web services, like YouTube, Facebook, Google, Twitter, Pandora, Flickr, and Blogspot, to import content to your timeline.

Glog® at <http://www.glogster.com/> is a poster generator/interface for mixing text, audio, video, images, graphics, and data. Glogs provide canvas freedom with portrait and landscape options, an editing tool, and a simple drag & drop function for adding media.

conceptME

http://www.conceptme.pt/conceptme/index.php/Main_Page

This web based platform helps develop conceptual models through group editing, discussion, and negotiation in teams that can include domain specialists and students.

Create quizzes

<http://www.edcreate.com/learnmore.php> <http://www.purposegames.com/create>

Create your own games, host CLIL teacher or student peer groups/classes, or study for a test.

Online games

http://www.onlinequizcreator.com/?utm_campaign=Listly&utm_medium=list&utm_source=listly

Gamified learning integrates game mechanics into the process of learning. (High) scores, levels, achievements, immediate feedback loops, and time pressure are some of the game mechanics, whose dynamics make it fun to play and, in CLIL, can help teach new content and competences.

Quizinator

http://www.quizinator.com/?utm_campaign=Listly&utm_medium=list&utm_source=listly

This online resource library organizes and manages collections of questions, allowing CLIL teachers/students to group and categorize. To create a new quiz, select what you would like to test from your question library, then drag & drop questions in a particular arrangement and save. Since everything is conveniently centralized online, users can manage and print documents and library components anytime from any browser.

Online Quizzes in different languages

<http://www.syvum.com/squizzes/>

<http://www.quiz-tree.com/>

Educational games and quizzes on many subjects, including Mathematics, Reading, Spanish, Geography, Spelling, Music, and more, are integrated with animated interfaces, fun sounds, and other features that make learning more enjoyable.

No single electronic media source will meet the needs and competence levels of all students. CLIL teachers will need to explore the possibilities to determine which practices best adapt to their students. Their varying levels of technological expertise will mean that, while one student may benefit greatly from interacting on Facebook and Twitter, another may be more motivated by the use of inspirational videos in the pursuit of linguistic and non-linguistic knowledge, competence, and experiences. To conclude, “ICT provide the media and the applications that facilitate CLIL students in their inquiry for linguistic and non-linguistic knowledge and experiences, and cater

for opportunities for active learning, for experimentation with the target language, for collaboration and for the development of competences and strategies” (Vlachos 2009).

7. AN INTEGRATED TERMINOLOGY-BASED APPROACH TO CLIL

Terminology plays a crucial role in the development of communication processes as well as in information and knowledge sharing, which has led us to consider the need to create a methodology that specifically addresses its use in CLIL environments. In fact, when a field is truly new to students, their first contact with this reality will be terms, either when listening to the CLIL teacher or when reading class material on their own. They will then have to learn how to recognize terms related to the domain-specific information and organize them in a meaningful way.

CLIL and a terminological approach – or TerminoCLIL – share a mutually beneficial dialogical relation. Terminology is the link between the two dimensions of CLIL: knowledge and competences (concepts and know-how) and language (discourse on that knowledge). Together, these dimensions can result in non-ambiguous and more efficient communication about specialized knowledge since there is no term (language) without a concept (knowledge). Therefore, one of the aims of terminology is to organize, structure, and classify discourse (linguist) and knowledge (expert).

7.1 Why is terminology important for CLIL?

Due to the extra-linguistic nature of knowledge, it is generally through discourse that knowledge and its representations are reached. Knowledge, which can be organized by both students and experts as they construct their own competences, is always transferred by a verbal or non-verbal text. Words are, thus, the privileged means to represent knowledge and the relation between Concept, Text, and Term (figure 1).

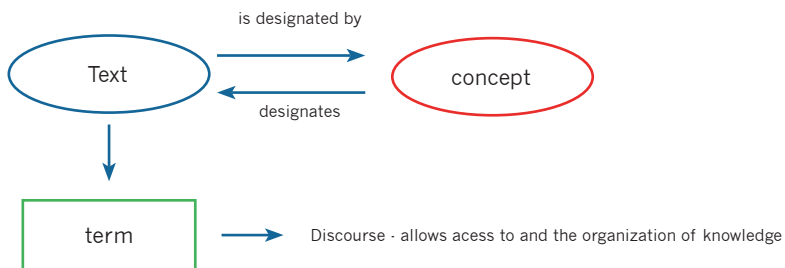


Figure 1 – Relation between Concept, Text, and Term

The texts prepared by CLIL teachers are aimed at the transmission/acquisition of knowledge and competences. The new reality in a FL increases the need to anchor this knowledge in an organized discourse or text.

7.2 From discourse to concept: The terminology-based approach

The terminology-based approach to CLIL follows Bloom's taxonomy throughout a scaffolded learning process (figure 2).

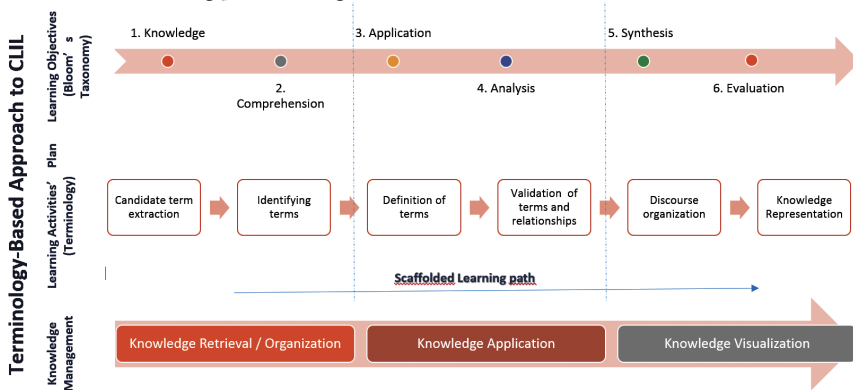


Figure 2 – Integrated Terminology-based approach to CLIL: A high-level cognitive representation

In the CLIL learning environment, with strong linguistic and extra-linguistic input, terms will allow students to access and acquire knowledge and competences which will then be further elaborated as they use that knowledge. Building a Learning Activity Plan using a TerminoCLIL approach involves three stages to determine the categories labeled Actions, Outcomes, Questions, and Tools.

Stage 1: Knowledge Retrieval/Organization

This stage involves recalling information, observing reality in the field of knowledge and finding/extracting information in/from texts. When given a specialized source text, students will try to recognize both known and new concepts to better understand the new reality.

But when the field is truly new to the students, their first contact with this reality will be terms, either when listening to the CLIL teacher or when reading class material on their own. They will then have to learn how to recognize terms related to the domain-specific information and organize them in a meaningful way. With the CLIL teacher, they can initially use an extraction tool and then refine the search and gather more information.

By extracting and listing all possible terms, definitions and other relevant information from the texts, students will find and establish relations among domain concepts and begin to organize some of them in order to understand the domain.

FOCUS ON STRATEGY DEVELOPMENT

Check the activity plan and consider the example in 7.4; about marketing and using a term extractor and the creation of a concept map. Suggest that they do the same for some of the sample material they have gathered.

Stage 2: Knowledge application

At this stage, students will use knowledge in a new situation to be examined in detail so that they are already more aware of the knowledge field and can link (at least some of the) terms with concepts. Students will also be more aware of synonyms, polysemy, and levels of language. They probably will begin to discover that using terms is contextually linked to issues of who is speaking or writing, which level of knowledge is involved, and the purpose of the given communication.

Moreover, and since they are accessing knowledge in a foreign language, students will be frequently tempted to find equivalents in their mother language. This can be a tricky exercise, since concepts and terms do not map easily across languages; the association of term meanings, from different languages, to concepts, raises the problem that the terms used to designate a particular concept in the conceptual system may not have a match both in the textual representations of the domain or in the different classification systems and taxonomies. CLIL teachers will have to provide language-independent frameworks of information (e.g. images) since differences in language, culture and conceptualization must be explained and known/understood before a multilingual term base/glossary can be built. This will help students not only to organize their knowledge with cultural awareness but also to define terms and correctly present specialized information in multilingual contexts.

Stage 3: Visualizing knowledge

At this stage, students who organize discourse and represent their knowledge to acquire specialized knowledge will be able to understand reality from an expert point of view. Texts continue to be important, but texts will be an outcome instead of being simply a starting point (as in stage 1) or a bottom-up method to access knowledge.

Since most of the relations between concepts have been refined and validated with the CLIL teacher (expert), students will be able to represent domain knowledge (top-down) in at least two ways: (1) In a **conceptual map** (see 7.3), for instance, domain-specific knowledge can be represented by using electronic tools and the semantic relations previously studied; and (2) Building **glossaries**, an engaging but demanding task, provides an opportunity for students to better understand the new concepts, the way they relate to each other and their position in the overall knowledge structure of the new domain.

Provided that the learning process was initiated as a multilingual approach (or has touched on this aspect), these activities can be carried out both in a foreign language and in the L1.

7.3 A TerminoCLIL Learning Activity Plan

During the development of these stages, the set of learning objectives according to Bloom's taxonomy, is defined and reinforced with specific terminology activities and related tools in conjunction with the communicative and cognitive skills to be developed. A TerminoCLIL Learning Activity Plan follows Bloom's taxonomy in a scaffolded learning process as shown in tables 7 to 9.

Knowledge Retrieval/Organization			
Knowledge		Comprehension	
Recall of information, observation		Finding information from the text	
Identifying Terms		Textual Match	
Actions	Outcomes	Actions	Outcomes
Identifying Terms	List of (candidate) terms	Classifying	Collection
Finding Terms	Quiz	Comparing	Explanation
Selecting Terms		Exemplifying	List
Extracting Terms		Inferring	Quiz
Questions?	Tools	Questions?	Tools
What is [term]?	http://taws.tilde.com/plaintext	How would you distinguish between a generic and a specific term?	Visual Thesaurus
What is the definition?	http://www.nactem.ac.uk/software/termine/	Can you establish a relation between some of the terms?	http://www.clres.com/semrels/umls_relation_list.html

Knowledge Retrieval/Organization		
Complementary information	http://termostat.ling.umontreal.ca/	Can you describe the connection between the terms?
		Can you identify the concept?
		Can you illustrate the terms?
		Can you name synonyms/antonyms?
		Can you find a definition?
		Can you link concept/term?

Table 7 - Learning Activity Plan (Knowledge Retrieval/Organization) based on Bloom's Taxonomy

Knowledge Application			
Application		Analysis	
To use in a new situation		To examine in detail	
Definition of terms		Validation of terms and their relationships	
Actions	Outcomes	Actions	Outcomes
Implementing	Demonstration	Integrating	Termbase
Executing	Texts	Analysing	Glossary
Translating	Presentation	Structuring	Terminology File
Using	Simulation	Organising	
Questions?	Tools	Questions?	Tools
How would you use this terminology to describe graphs, images, or tables?	www.wordnik.com www.onelook.com/ www.wordsense.eu	Can you make a distinction between contexts/ communication levels...?	Advanced search
Which context is the most suitable?		How would you... select relevant terms?	Textual corpus analysis Concordance analysis
Can you formulate a definition of a term?		... distinguish between domain (un)suitable terms?	www.webitext.com/bin/webitext.cgi
Can you find an equivalent in Portuguese?		... rate the exactness of the terms that designate the concept?	www.tradoo.it.com/
		... define the concept?	http://corpora.ids-mannheim.de/ccdb/ http://www.webitext.com/ http://www.termbases.eu/

Table 8 - Learning Activity Plan (Knowledge Application) based on Bloom's Taxonomy

Knowledge Visualization			
Synthesis		Evaluation	
To change or create into something new		To make judgments according to standards	
Discourse Organization and Knowledge Representation		Specialized Knowledge	
Actions	Outcomes	Actions	Outcomes
Designing	Visual Conceptual Map	Solving	Content acquisition through terminological units and semantic relations
Constructing	Multilingual maps and texts		Effective Communication (context, level of language, knowledge transfer)
Planning			Cognition development (lower and higher order)
Making			Culture awareness (through language management and translation)
Questions about your glossary or database	Tools	Questions?	Tools
Which template/model would you use to build it up?	http://cmap.ihmc.us/	Based on what you know, how would you explain ... ?	Surveys
Which levels and fields would you use?	http://www.mindmeister.com/pt	Has terminology helped you increase your knowledge of the field of studies?	Tests
Can you propose a (new) translation for the terms?		Do you agree with the actions/ outcomes?	

Table 9 - Learning Activity Plan (Knowledge Visualization) based on Bloom's Taxonomy

7.4 Concept maps

*Yet in each word some concept there must be...
Goethe's Faust (Part I, Scene III)*

In CLIL classroom language, with a foreign language as the means for communication and the source of terminology, concept maps can be used for the analysis, structuring, and dissemination of specialized knowledge. CLIL teachers and students need to understand the complexity of the field of study and the semantic diversity required for expression; then, they must find a method to represent it.

As an effective means of representing and communicating knowledge, concept mapping is a process of visually linking concepts with propositions. The concepts

constructed are enclosed in shapes and propositions of (semantic) relationships among the concepts indicated by linking words. When concepts and linking words are carefully chosen, these maps can be useful classroom tools for observing nuances of meaning, helping students organize their thinking, and summarizing subjects of study.

Concept maps support knowledge representation, both individually and collaboratively, and promote a more efficient way to share knowledge. They help to visually and graphically access and represent domain-specific information, knowledge, and competences. They are the backbone of a discovery-learning environment, where students can first draw a concept map of the information they have learned or gathered on a specific topic, then share their concept maps with the group, and finally consider other examples of peer work and suggestions to analyze them, offering constructive criticism, diagnosing misunderstandings and restructuring the information with the help/validation of the teacher.

Student creation of concept maps provides effective feedback on their understanding of the domain knowledge and competences through semiformal knowledge representations. The degree of complexity grows when concept maps are used to develop a multilingual representation. These cognitive tools can complement the learning process as in the following example, where a marketing plan is mapped out into its multiple concepts (figure 3):

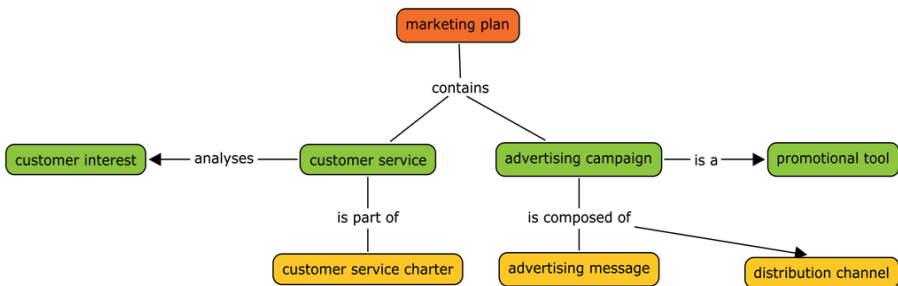


Figure 3 - Concept Map

To avoid any distraction from the understanding of the workflow and of the different proposed tasks, the different steps required must be clearly defined and explained to accompany the students throughout the entire life cycle of the process, which, like scaffolding, can be expressed through a building metaphor (figure 4).



Figure 4 – An analogy of scaffolding in the life cycle of a building (adapted from Martins 2006)

The active participation of the expert/teacher resolves problems that are:

- conceptual – knowing the domain can help to avoid ambiguity and increase their semantic precision
- linguistic – familiarity with the specialized language and recognition of most of the terms to be used in different languages will speed up the time needed to find the proper equivalent
- pragmatic – awareness of the use of the term and its acceptance by peers can make it easy to understand and anticipate meaning based on the context

The terminology-based approach described can be applied by the CLIL teacher but the starting point for the students will be the proposed CLIL texts in a bottom-up learning approach. Note that, in a contrasting top-down learning approach, all knowledge acquisition must be validated at every stage by the CLIL teacher expert.

CHAPTER 4

RECLES.PT CLIL PROJECT RESEARCH DESIGN

This chapter considers the issues raised by CLIL in terms of assessment and evaluation of student work and progress and offers suggestions on assessment, evaluation and feedback strategies that will support the CLIL learners and help monitor their progress.

Assessment of this CLIL project is also considered based on the results of the CLIL module to be taught by the subject teachers. Since the modules will be taught on different subjects and topics and in a number of HE institutions, it is important to make clear what will be assessed and evaluated and how it can be planned into the CLIL module.

At the end of the chapter you will find samples of evaluation and assessment tools that can be adapted to each learning community.

1. ASSESSMENT, EVALUATION AND FEEDBACK: SUPPORTING LEARNING IN CLIL

Assessment is not something that comes after instruction, but is an indispensable part of instruction. It is by thinking about assessment that we really start to sharpen up our idea of what CLIL is about and the role of language within it.
(Llinares García et al. 2012: 280)

According to McLaughlin and Vogt (1996: 104, 106 in Echavarría et al. 2008), assessment is “the gathering and synthesizing of information concerning students’ learning”, while evaluation involves making judgment of that learning, thus following assessment (in Echavarría et al. 2008: 172) and determining the quality of feedback provided to students on their performance and achievements.

One of the most intricate aspects in CLIL, especially given its interdisciplinarity and subject-specificity, is to decide *what* to assess in learners' performance (e.g. knowledge, problem-solving skills, interpretation, analysis), *how* to do it (e.g. formally or informally; individually, in pairs or in groups; using Q&A or task-based learning), what stage of the learning process is the most appropriate to conduct it – *when* (e.g. at crucial learning stages such as the end of each content unit or continuously), and *why*, that is, the purpose or relevance of assessing students. On the other hand, several questions arise which may determine the assessment strategies and tasks adopted and that relate to the role of the CLIL teacher as a subject specialist who is proficient in the foreign language used as a medium of instruction/communication: Can content be separated from the language and assessed independently or does the specialist teacher assess language together with content (Hönig 2009)?

Therefore, when preparing and designing a CLIL course, it is essential to develop needs analysis (see section 4 in Chapter 1). Aspects that need to be taken into account include:

- personal information about learners – personal characteristics and motivations; previous learning experience in both the content area and the language; attitudes to learning and learning styles;
- professional information about learners – previous professional experience; professional contexts in which they will need to use the language;
- language learning needs – gap between their knowledge of the language and the professional target situations);
- what learners want and expect from the course;
- the environment in which the course is developed – learning policies, regulations and requirements defined by the institution and the wider higher education system; needs and expectations of the labor market; involvement of other participants in the program; the support of stakeholders (adapted from Dudley-Evans & St. John 1998).

Grasping these aspects will help the CLIL teacher define the learning outcomes and the teaching/learning strategies, resources and materials to adopt, but also the methods of assessment and feedback that will support learning in CLIL.

As in other fields of education, assessment in CLIL aims to monitor student learning progress and achievements, “measure the final results (summative assessment)” and “improve education through the analysis of processes and results” (Maggi 2011). The main aspect that distinguishes CLIL from other areas, however, is the fact that,

by using a foreign language as a medium of instruction/communication to discuss and reflect on content, students focus mainly on the positive aspects of learning, namely “what they can do through the foreign language” rather than on linguistic mistakes (Maggi 2011). The focus is then on *meaning* and language acts as a resource to achieve this meaning. There is, therefore, “a triple focus on language, content and learning skills” (Bertaux *et al.* 2010: 7). According to Coyle’s 4Cs – content, cognition, communication and culture (Coyle 1999; Coyle *et al.* 2010), content learning in CLIL should be understood as a complex cognitive process of communication, determined by one’s cultural knowledge and environment, both (inter)personal and professional.

According to Briggs *et al.* (2008), there are three types of assessment:

1. “assessment OF learning”, which is mainly summative, assessing knowledge acquisition and level of competence, usually in the form of tests and exams, and grading it in a quantitative manner (though it may also qualitative);
2. “assessment FOR learning”, whose purpose is formative since it continuously monitors learners’ performance and has the main goal of informing both teachers and learners about future teaching/learning practices needed; and
3. “assessment AS learning”, which “increases the awareness about the learning processes” (Barbero in Quartapelle 2012: 39) and where “[s]tudents and learners share learning intentions and success criteria and evaluate learning also through alternative forms of assessment, such as self- and peer assessment, and through tools such as portfolios, observation grids and other instruments” (*idem*).

Therefore, assessment should be multidimensional and composed by a variety of formal and informal assessment strategies and tasks (Poisel 2007) so as to understand both what students can do with support and the areas in which they are already autonomous and to inform the CLIL teacher on what still needs reteaching and/or improvement. These strategies should be selected according to the learning outcomes defined (what teachers expect their students to be able to achieve when they finish a specific task, module or course), students’ level of learning in the subject field and in their education as well as their stages of achievement in the learning process, whether it should be an individual or group activity and how long it will take to complete it. In addition, students’ *multiple intelligences* (Gardner 1983; Puchta & Rinvolucris 2007), learning styles and “various backgrounds, needs and usage scenarios” (Anderson 2011: 64) should also be taken into consideration in order to make learning an inclusive process where all learners, despite their different ways of learning and levels of achievement, are addressed. Hence, “[a]ll parts of the process should serve to support

appropriate learning” (Klapper in Coleman & Klapper 2005: 80). Also depending upon their relevance to the subject field, assessment instruments can include, for example:

Diagnostic Tests – This early-stage assessment tool allows teachers to identify students’ previously-acquired knowledge and help them decide on their future teaching methodologies.

Task-based Learning (TBL) – Or task-based instruction (TBI) focuses on the use of authentic language and meaningful real-life communicative processes and helps the teacher to observe and monitor learners’ performance and skills already achieved and/or those to be developed. This can be done, for instance, with the help of visuals or realia/authentic material in a pre-task activity (e.g. brochures, newspapers, videos of professional situations, etc.), which establish the relevance of the topic and the real evidence of learning. Task-based learning is learning by doing.

Peer Assessment – This is a collaborative learning strategy in which students question/reflect on their own practices and their colleagues’, either in pairs or in small groups. By following clearly defined assessment criteria to provide feedback on each others’ work, learners realize what it takes to convey their ideas clearly to be understood by others and that there are different ways to achieve that. In addition, peer assessment promotes teamwork skills, thus fostering collegiality, and enables learners to practice polite and vague language in the foreign language used as a medium of communication, thus contributing to student improvement of not only their linguistic and subject skills but their relational skills as well.

Role-play – In role-play, students act out a specific role according to the knowledge they have acquired (e.g. acting out as a waiter/waitress or a hotel receptionist and a customer/guest making a request or complaining in a Customer Relations subject in the field of Tourism and Hospitality), while the teacher assumes an observer’s position, taking notes for providing feedback to students at a later stage. This enables the teacher to understand what are students’ main difficulties and aspects to improve and it is also a formative way for students to become aware of their own and their colleagues’ main strengths and/or aspects in need of improvement. Role-plays must be followed by students’ own reflection on their performance and by the provision of feedback on the part of the teacher. Role-plays have the advantage of providing fun while learning.

Self-assessment – This usually corresponds to students’ filling in information about their own progress on questionnaire grids and in response to open-ended

questions, but it can also be done, for instance, in relation to homework. Instead of asking students to develop a specific task for homework which has been previously defined by the teacher, CLIL teachers may allow students to decide what are the topics they still need to revise and the aspects they need to improve and, though with guidance, let them choose the strategies they prefer to undertake. This will concede to different learning styles and motivations, at the same time that it will make students more aware of their learning process, thus promoting their pro-activity and fostering a more bottom-up approach to teaching/learning.

Projects – To undertake an individual or group project (group projects further promote teamwork and negotiation skills) involves the activation of research skills, mandatory for any higher education student who thus engages in autonomous learning. Despite this autonomy, projects require a high level of support from teachers in guiding and advising students through the development of the project and probably more contact hours used in helping students decide on research methods, guiding them in resorting to different sources of information, supporting in the organization of the project in different phases, advising on the content structure, among others. When assessing a project, and despite the fact that the CLIL teacher should have previously-defined clear assessment criteria, “each individual project will need distinct outcomes appropriate to the topic” (Klapper in Coleman & Klapper 2005: 87). Given the depth of development required in a project, this assessment tool allows different formative and summative stages and the development of different cognitive, content, linguistic and interactive/interpersonal skills.

Portfolio – A portfolio is a compilation of the tasks elaborated by learners themselves over a specific period of time. The portfolio enables teachers to better perceive of each student’s ongoing performance – documented over time – and fosters the possibility of developing different tasks which activate distinct skills. The inclusion of self-and peer-assessment components would also include the student’s own comments and/or comments resulting from peer-assessment on the different tasks.

Oral Presentations – Oral presentations allow students to present the results of their individual or group content research (through analysis, synthesis, exemplification, argumentation, among others), contribute to the development of their oral communication skills in the target language, to greater awareness of their body language and general presentation skills (including gestures, facial expressions, eye contact, voice projection and intonation), and promote the development of interactive

and discussion skills with the audience, not to mention the practice of working with visual aids, when applicable.

However, the main problem in assessing oral presentations is the fact that the information provided is transient, unless the presentation is (audio or video) recorded, and there is high probability for the teacher to miss aspects pertaining to previously-defined assessment criteria, contrasting with a written assignment which is a clear record of what the learner is able to do in writing. Oral presentations are also time-consuming and typically result in more subjective assessment.

Reading Comprehension Activities – This may include matching pictures to vocabulary, true/false exercises, gap-filling, and jumbled text (sentences or paragraphs) to correct mistakes and organize, order, and classify information.

Matching Exercises – Matching exercises (e.g. matching sentence halves; matching concepts with their definitions; placing information into categories) allows the teacher to focus on meaning and test factual knowledge and comprehension.

Multiple Choice – These consist of tests or exercises which include questions or incomplete statements where a set of possibilities (the correct answer and two or three incorrect ones) are provided for the student to select the appropriate answer. Although it is a more common strategy at lower levels, it can be adapted to any level when well constructed to prevent guessing.

Labeling – Particularly useful at an introductory stage of the lesson, when labeling, students demonstrate their competences by identifying images of concepts, ideas and situations with associated words or expressions.

Essays – Although the development of ideas required to write an essay demonstrates student knowledge and understanding of a given topic, some students may in fact not have any previously-acquired essay-writing skills, which will necessarily have a negative impact on the organization and consistency of their arguments. A possible preventative strategy is to hold a training session on essay planning and writing strategies before assigning the essay in question. Note that a more specific essay topic will make it easier for the students to focus their arguments and for the teacher to set the assessment criteria. Topic specificity also helps to reduce the possibilities of subjective interference in the assessing process.

Short-Answer Questions – Here students can provide short answers to questions previously constructed by teachers. This strategy can be used not only to assess student accuracy in their responses but also to assess student abilities in summarizing information and supporting a direct argument.

Surveys – Especially used in ongoing assessment, surveys are a particularly important tool for CLIL teachers to discover what their students have achieved so far and what additional support they need. Surveys can include closed questions, where students should provide an unambiguous answer (a more quantitative approach), and open-ended questions (a more qualitative approach), where the emphasis is placed more on student perception of the learning process (metacognitive skills) rather than on end results or student achievements.

Reviewing/summarizing – Reflecting, summarizing and wrapping up can contribute to a final review when students consider the challenges encountered through the learning process, their achievements and then identify aspects to be improved. This assessment is crucial in a student-centered process where learners, based on their social and cultural backgrounds, personal experience and vocational needs, build the content. This way, students are empowered in their learning process and understand what they have to do and what they want to learn more clearly (Diaz-Lefebvre 2006), thus facilitating critical thinking and making the learning process more meaningful. A wrapping up/review strategy includes using outcome sentences that should be completed by students, either orally or in writing, as follows in table 10.

I wonder...	I learned...
I discovered...	I still don't understand...
I still want to know...	I still have a question about...

Table 10 – Suggested outcome sentences (adapted from Echavarría *et al.* 2008: 170)

Reviewing can be done in groups, through brainstorming, in small groups or individually, and may provide important information for the teacher to decide upon any additional teaching strategies or on summative evaluation and its format.

Achievement or Summative Testing – This is usually done through progress and final tests, which are formal assessment tools to grade student knowledge acquisition at crucial stages of the learning process – at the end of a learning unit or full course. These tools should consist of different types of questions of varying depth and length.

Assessing and evaluating student competences, performance, and knowledge acquisition plays a significant role in the way students learn and organize their study.

Whatever the assessment instrument adopted, its criteria or scoring (whether quantitative or qualitative), CLIL assessment must not only correspond to the content and competences studied but also reflect the teaching methodologies selected throughout the learning process.

Above all, the learning process should be organized in such a way that the teaching practices and the methodologies adopted correspond to the learning outcomes and assessment criteria defined, depending not only on student levels of learning complexity and abstractness but also on their relational skills (see Bloom's taxonomy, http://courseware.monash.edu.au/DELTA/blooms_pyramid.html). The “measurable evidence of competence” (Klapper in Coleman & Klapper 2005: 81) – the quality of student outputs, including strengths and difficulties – should be clearly communicated (via feedback) so that they know what is expected and what they need to improve.

2. RESEARCH DESIGN

Four fundamental questions guide the implementation period. Each of the guiding questions will be dealt with more specifically below.

- (1) “What should be monitored?”
- (2) “How to monitor?”
- (3) “What should the research questions be?”
- (4) “When to monitor?”

2.1 What should be monitored?

The assessment of the effectiveness of CLIL as a pedagogical strategy should consider how students and teachers perceive CLIL and how their views and perspectives may affect the implementation of the program.

2.2 How to monitor

A number of data collection methods and elicitation tools may be used. Most often, researchers make use of qualitative and quantitative introspective methods of inquiry, such as semi-structured questionnaires and individual or group interviews. The choice of using both quantitative and qualitative methods enriches data in the attempt to balance the weaknesses of one of the methods. Due to the nature of the investigation, researchers may also make use of videos of classroom practices. By using a multimethod approach, the results from one form of data collection method will help refine the other data. In the end, the researcher is able to corroborate or discard the findings of another method.

2.3 What should the research questions be?

The main objective of this CLIL Teacher Training research is to combine the participants' attitudes and expectations, which can be achieved through two key research questions:

1. How do participants (subject teachers and FL teachers) perceive the implementation of CLIL methodology and strategies?
 - 1.1. What advantages do the participants recognize when using CLIL methodology?
 - 1.2. What disadvantages do the participants recognize when using CLIL methodology?
2. What are their attitudes and perceptions toward CLIL during and after the implementation process?

Other research questions may arise based on observations during the implementation period covering the following significant aspects:

- student and teacher proficiency in the foreign language
- the balance between content and language learning
- the availability and preparation of materials, among others

When a more thorough analysis of the implementation process is necessary, the FL teacher might consider administering language and/or content learning tests. Alternatively, language and content learning outcomes may be based on personal and subjective evaluation by the students and teachers.

2.4 When to monitor?

Student and teacher experiences and attitudes should be elicited and interpreted at the beginning and at the end of the implementation process. However, depending on the length and aims of the CLIL course or module, data can also be elicited during the course or module implementation.

3. FROM CLIL TEACHER TRAINING COURSE TO CLIL MODULE IMPLEMENTATION

To assist other educational organizations that may be interested in creating a CLIL Learning Community from the roots up, the following guidelines in table 11 were created to support our network of ReCLES.pt FL teachers working in HE in Portugal, which clearly documents the work to be executed effectively on a clear timeline.

Research Stage	Objectives	Activities	Period	Expected results	Data collection tool
2	Objective 1: Training seminar	Write CLIL guide (draft) Guide - final version	5 months	ReCLES.pt CLIL Training Guide (working version) on paper + online	Comments online while joint editing the Guide by FL teachers.
	Objective 3: Prepare CLIL materials for modules			7 seminars (IPCB; IPP; IPG; ISCAP-IPP; IPB; ESHTe; UÉvora)	Learning logs by FL teachers with comments on seminars
2	Objective 2: Plan jointly for comparable data	Write in learning log (FL and subject teachers)	1 month	Field notes on CLIL seminar by IT and T	Assessment grid on competences acquired during the training seminar
		Prepare CLIL module materials (see Strategy Development in guide)		CLIL materials	Learning Logs by subject teachers during preparation and during implementation
2		Prepare initial needs assessment questionnaire for students taking part in the CLIL module (adapted by each T)		Needs assessment questionnaire for students	Needs assessment questionnaire for students
		Prepare interview scripts for T and students taking part on the CLIL module		Interview scripts for subject teachers and students	Interviews to: subject teachers and students

Research Stage	Objectives	Activities	Period	Expected results	Data collection tool
3		Prepare final questionnaire to assess CLIL module: version for subject teachers and version for students		Final Questionnaire data: parallel study	Final questionnaire to assess CLIL module: version for subject teachers and version for students
	Objective 1: 1 CLIL module per institution	Monitoring meetings of learning logs of the Learning Community	6 months	CLIL modules CLIL resources	Learning logs/ field notes
	Objective 2: Perfect and review CLIL resources and strategies	Define CLIL supervising team meeting		Monthly meetings of CLIL practice communities	Meeting minutes
		Evaluation		Meeting to assess implementation and introduce corrective measures if necessary	Meeting minutes
		Final evaluation questionnaire (on CLIL module) to subject teachers and students, Interviews			Implementation reports
		Final supervising team meeting		Comparative evaluation report and academic article	Research paper

Table 11 – Implementation of the ReCLes.pt CLIL Project (Morgado)

4. DATA COLLECTION TOOLS

The implementation period, like every other, will require a number of data collection tools for gathering any pertinent information. In this section, you will find examples of these tools that will help you to show the results of your efforts.

4.1 Examples of data collection tools

Pre and post training questionnaire

This questionnaire can be given to your subject teachers at the beginning and end of the 10 hours of meeting with the Learning Community. By recording the responses, you can determine the average level of competence for your training group. It is also useful to classify the change in their competences at the end of the 10-hour training period (see 4.2).

Needs assessment

As suggested in chapter one, the English competence level of your subject teachers and of their respective students may be assessed through the CEFR self-assessment grid available at http://www.coe.int/t/dg4/education/elp/elp-reg/Source/assessment_grid/assessment_grid_english.pdf.

Please note that it is also important to assess attitudes and perceptions of learning through English (advantages and predictable difficulties). As you adapt your documents, be sure to maintain coherence by repeating similar questions in the final questionnaire when assessing the CLIL module and during the interviews.

Interview script

To carry out the interviews that can complete information gathered in the questionnaire and the needs-assessment, you can create a battery of questions to assess attitudes and perceptions of learning through English (advantages and predictable difficulties). If you can manage the time, you may want to use the same script on the CLIL students when the module is being implemented.

Learning logs

It is important to write daily entries on aspects of the Learning Community and on the variety of reactions, comments, and especially the way problems were dealt with. Learning logs, which are also relevant during implementation of the individual CLIL modules by the subject teachers, should be written by both the FL teacher and the subject teachers. The FL teacher will need to monitor the CLIL experiences closely (see “Field notes during implementation of the CLIL module” below; also see section 4.4 below for suggested document format as well as a suggested for implementation at www.uiowa.edu/~c07s187b/Teaching_Log_Assignment.doc)

Assessment grid on competences acquired through the Learning Community

This is an assessment grid adapted from Bertaux *et al.* (2010) called “The CLIL Teacher’s Competences Grid”. It matches competences for the 10-hour training with the CLIL teacher’s competences grid (see 4.3).

Research notes from specialist seminar

Keep your eyes open for conferences and seminars where you can keep up-to-date and share the updates with your colleagues.

Meeting minutes by IT supervising team

If you are working within a group of various FL teachers, be sure that you have previously stipulated the need to coordinate amongst yourselves.

Field notes during implementation of the CLIL module

FL teachers can take on one of two roles during implementation of the CLIL module: (1) you can participate in the CLIL module; or (2) be an observer. It is highly recommended the CLIL module be observed at the beginning, in the middle and towards the end. For an excellent definition of *participant observation*, see <http://assessment.aas.duke.edu/documents/ParticipantObservationFieldGuide.pdf>.

Your field notes of the CLIL module can be divided into the following four aspects:

1. Student and teacher CLIL language proficiency levels
 - managing interaction in the classroom
2. The balance between content and language learning
 - lesson planning
 - how plans are translated into action
3. The availability of appropriate CLIL materials for scaffolding
 - Materials Development/Preparation
 - Use of scaffolding techniques
4. Attitudes and perceptions regarding CLIL
 - Reactions and attitudes of students
 - Reactions and attitudes of your subject teachers

Implementation report by FL teacher

For complete documentation, you will need to prepare the implementation report for each CLIL module that your subject teachers have prepared.

4.2 Assessment grid for contextualizing CLIL in the big picture

For a “can do” approach, especially at the end of the series of CLIL Teacher Training seminars, we recommend the following format in table 12 for assessing competence based on Bertaux *et al.* (2010), which can be also copy/pasted directly to a document or made available online.

What level of competence do you attribute to each of these areas? Consider CLIL in terms of definition, adoption, adaptation and integration of CLIL into the curriculum within the local context (1 - very difficult; 6 - not difficult at all)

<input type="checkbox"/>	a) I can explain the key elements of the CLIL approach.
<input type="checkbox"/>	b) I can describe the benefits of CLIL to encourage students to participate.
<input type="checkbox"/>	c) I can help other teachers understand CLIL better.
<input type="checkbox"/>	d) I can learn from the teaching and learning experiences of others.
<input type="checkbox"/>	e) I can learn from my own teaching and learning experiences.
<input type="checkbox"/>	f) I can prepare balanced lesson plans to contemplate content and language goals.
<input type="checkbox"/>	g) I can select from a number of activities to provide the best scaffolding.
<input type="checkbox"/>	h) I can identify the specific needs of students and link them to parameters of the content.
<input type="checkbox"/>	i) I can help stakeholders (students, administrators, non-CLIL teachers) to manage their expectations about CLIL targets.

Table 12 – Assessing CLIL in context (Morgado & Arau Ribeiro, adapted from Bertaux *et al.* 2010)

4.3 Pre and post training CLIL questionnaire

For administrative purposes, for the other teachers involved, and for your own curiosity, you will want to ask your subject teachers to complete a pre-training questionnaire. We suggest the following in table 13, which can be copy/pasted directly to a document or made available online.

What level of difficulty do you attribute to these aspects of your future teaching in English?

(1 - very difficult; 6 - not difficult at all)

<input type="checkbox"/>	a) I can select the contents of my subject to be taught in English.
<input type="checkbox"/>	b) I can design original learning activities in English with the appropriate cognitive level.
<input type="checkbox"/>	c) I can find authentic materials in English to be used in class.
<input type="checkbox"/>	d) I can create my own materials (worksheets, presentations, diagrams, hand-outs) in English to be used in class.
<input type="checkbox"/>	e) I can find appropriate vocabulary when preparing written materials in English.
<input type="checkbox"/>	f) I can prepare my own lecture notes in English.
<input type="checkbox"/>	g) I can identify when my own or other authentic material has the appropriate language level for my students.

<input type="checkbox"/>	h) I can find technical terminology in English.
<input type="checkbox"/>	i) I can correct my students' English pronunciation of technical terms.
<input type="checkbox"/>	j) I can assess my students' level of English.
<input type="checkbox"/>	k) I can adapt original English materials to my students' needs.
<input type="checkbox"/>	l) I can maintain the quality of classes similar to that of my classes in Portuguese.
<input type="checkbox"/>	m) I can maintain students' interest when teaching in English.
<input type="checkbox"/>	n) I can see that my students become enthusiastic when I work with them.
<input type="checkbox"/>	o) I can explain myself clearly in class.
<input type="checkbox"/>	p) I can explain ideas and concepts in different ways so that more students understand me.
<input type="checkbox"/>	q) I can give a clear answer to students' questions even when I am unprepared.
<input type="checkbox"/>	r) I can react to student activity spontaneously.
<input type="checkbox"/>	s) I can find the appropriate words when I speak English in class.
<input type="checkbox"/>	t) I can give appropriate examples even when I am unprepared.
<input type="checkbox"/>	u) I can correct students' comments and questions in class.
<input type="checkbox"/>	v) I can suggest reformulations of what students are trying to say in class.
<input type="checkbox"/>	w) I can evaluate my students' oral performance.
<input type="checkbox"/>	x) I can explain language patterns (give linguistic feedback) to students.
<input type="checkbox"/>	y) I can prepare written tests in English.
<input type="checkbox"/>	z) I can correct and make suggestions on my students' written work.
<input type="checkbox"/>	aa) I can evaluate my students' written work.
<input type="checkbox"/>	bb) I can also...

Table 13– Pre and post training CLIL questionnaire (Arau Ribeiro, adapted from Woźniak 2013)

In the follow-up to your Teacher Training seminars, by asking your subject teachers to again respond to the post-training questionnaire (the same questionnaire above), you will be able to draw some conclusions about the impact of your CLIL learning community.

4.4 Learning logs

Writing in a learning log is an ongoing task that will require you and your subject teachers to briefly summarize thoughts regarding the experience in the CLIL Learning Community. A typical learning log entry is 5-10 lines and requires no more than 15 minutes to complete.

The purpose of the learning log is to record impressions on:

- leadership/teaching within the Learning Community
- the usefulness of the CLIL Training Guide, tasks and other materials
- reactions, attitudes, suggestions and comments

To create a learning log, table 14 can be copy/pasted and expanded by adding lines according to the number of sessions planned for the CLIL Learning Community.

Learning Log	Learning Community
School	
FL Teacher	
Session One	
Date _____	
Participants:	

Table 14 – Learning Log for a CLIL Learning Community (Morgado & Gonçalves)

During implementation, you will want to adapt the Learning Log to focus on the following aspects:

- Lesson planning and how plans are translated into action
- Lesson materials
- Scaffolding techniques used
- Managing interaction in the CLIL Learning Community
- Reactions and attitudes of participants in the CLIL Learning Community
- What subject teachers say/write about your work with them

Learning Logs are valuable forms of data collection to better understand what is going well and why and then how to improve in future sessions. Be sure that the FL teachers and subject teachers complete their own learning logs and that the writing is in fact individual.

For a variation on the written version, you could also opt for an audio version, where participants record their comments in audio or video files. These are media-rich sources of information but are far more time-consuming to work with when you need to prepare a report.

CONCLUSION

The creation of a CLIL Learning Community was absolutely new in Portugal since there is not even a single expression of CLIL in the primary and secondary education system. The vision, preparation, and production of this ReCLes.pt CLIL Training Guide, including the creation of data collection tools and a focus on strategy development at the end of each section, has been the result of an enriching collaborative writing experience – the specific authors are listed on the cover – by foreign language teachers in higher education in Portugal, namely from the following schools:

- Escola Superior de Hotelaria e Turismo de Estoril (ESHTE)
- Instituto Politécnico da Guarda (IPG)
- Instituto Politécnico de Bragança IPB)
- Instituto Politécnico de Castelo Branco (IPCB)
- Instituto Politécnico de Portalegre (IPP)
- Instituto Superior de Contabilidade e Administração do Porto do Instituto Politécnico do Porto (ISCAP-IPP)

Their respective schools are all founding members of ReCLes.pt – the Portuguese Network Association of Language Centers in Higher Education. In previous phases of the ongoing CLIL research project, collaborators from other FL teachers associated with ReCLes.pt have joined in from the member institutions at the Instituto Politécnico de Beja, the Universidade do Algarve, and the Universidade de Évora.

Margarida Morgado, of the Instituto Politécnico de Castelo Branco (IPCB), has been our point person and fearless leader, successfully securing financing for this publication

via IPCB and the FCT and collaborating especially with Margarida Coelho, of the Instituto Politécnico de Portalegre, to publish articles on CLIL in higher education in the early phases of the project. Other relevant research to support this project has also been published in peer-reviewed journals and/or presented in recent national and international conferences. Margarida Morgado and María del Carmen Arau Ribeiro have also provided valuable editing skills to bring the various parts of the ReCLes.pt CLIL Training Guide together.

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- CLIL Resources/Repositorios*, http://www.isabelperez.com/clil/clicl_m_5.htm
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- Council of Europe CEFR self-assessment grid*, http://www.coe.int/t/dg4/education/elp/elp-reg/Source/assessment_grid/assessment_grid_english.pdf
- European Framework for CLIL Teacher Education*, http://www.unifg.it/sites/default/files/allegatiparagrafo/20-01-2014/european_framework_for_clil_teacher_education.pdf

INTERACTIVE CLASSROOM ACTIVITIES

- Teaching Expert Thinking*, http://www.cwsei.ubc.ca/resources/files/Teaching_Expert_Thinking.pdf
- Literacies through Content and Language Integrated Learning: effective learning across subjects and languages*, <http://www.ecml.at/F7/tabid/969/Default.aspx>
- Classroom Assessment Techniques – Concept Mapping*, <http://www.flaguide.org/cat/conmap/conmap1.php>
- Mechanics Problems - Conservation of Energy and Conservation of Momentum*, <http://groups.physics.umn.edu/physed/Research/CRP/on-lineArchive/crcecm.html>

Lecture-Tutorials for Introductory Astronomy, <http://www.physics.montana.edu/physed/lecture-tutorial-samples.pdf>

National Center for Case Study Teaching in Science, http://sciencecases.lib.buffalo.edu/cs/collection/results.asp?search=&subject_headings=&educational_level=Undergraduate+lower+division+&type_methods=&topical_areas=&x=38&y=16

Starting Point: Teaching Entry Level GeoSciences – ConceptTests, <http://serc.carleton.edu/introgeo/interactive/conctest.html>

Teaching Log Assignment Seminar: Student Teaching English/Language Arts, www.uiowa.edu/~c07s187b/Teaching_Log_Assignment.doc

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