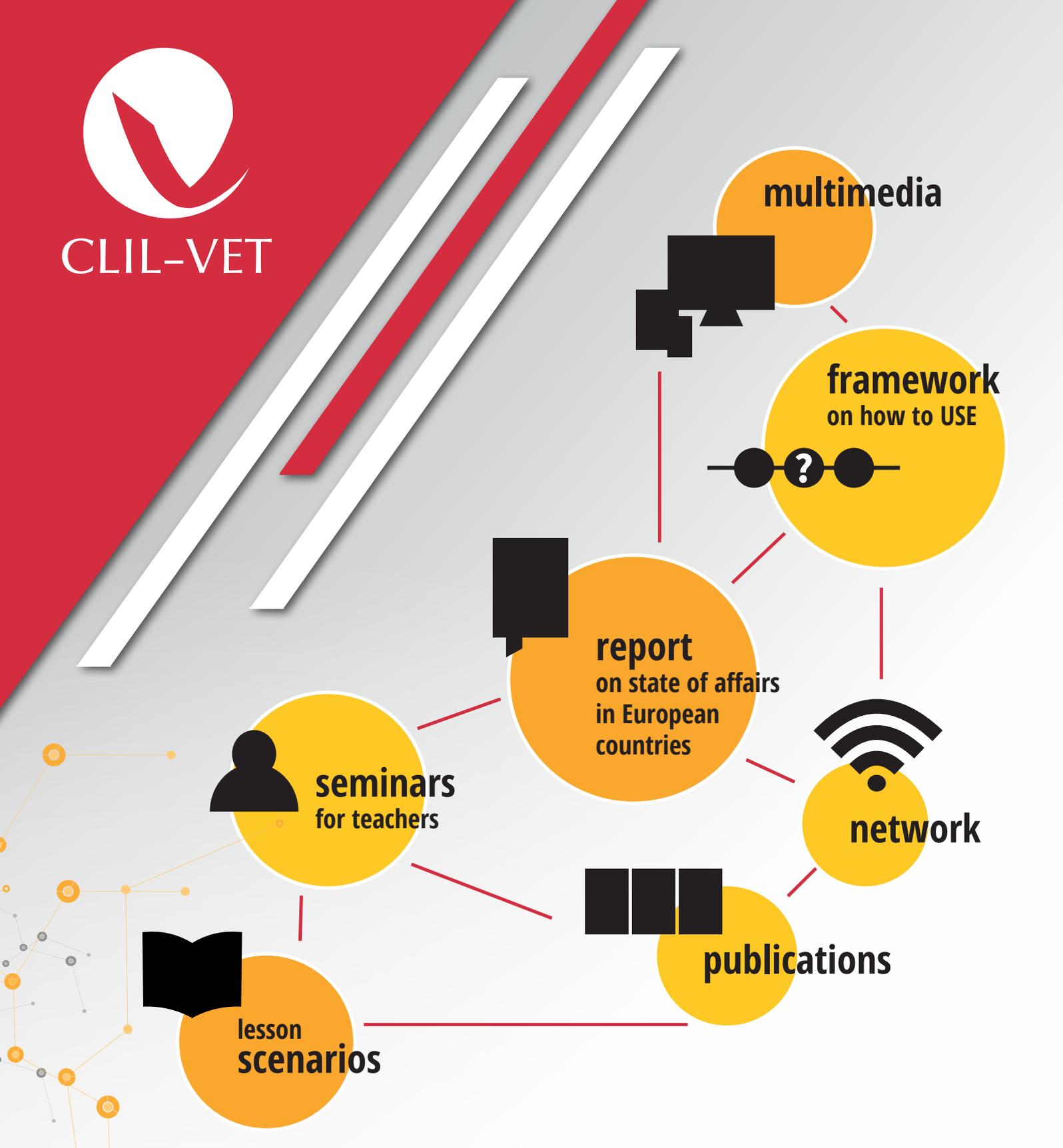




CLIL-VET



# Framework



# PARTNERSHIPS

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## 1. INTRODUCTION

This document was produced within the project “Implementing the CLIL-VET model in vocational schools”. It is an international educational project launched under the Erasmus+ Programme, Key Action 2: Strategic Partnership, Cooperation for Innovation and the Exchange of Good Practices for vocational training and education (project number: 2017-1-PL01-KA202-038309; realization time: November 2017 – April 2020) and coordinated by the Institute for Sustainable Technologies-National Research Institute (ITeE-PIB), based in Radom, Poland.

The Project Consortium consists of the IES Puertas del Campo, University College of Teacher Education Vienna, the University of Pitești, Eduexpert, and University of Warsaw. The consortium includes institutions active in research and teacher training as well as vocational schools.

This document is intended as a resource for vocational trainers focusing on the specific demands in a vocational school context (called CLIL-VET, cf. chapter 4 for more discussion). It integrates present-day CLIL research results with the views and experiences of in-service teachers and CLIL practitioners. This document does not raise any claims to completeness or in-depth coverage, with some issues dealt with only briefly and others left out altogether. The overall criterion for inclusion has been the usefulness of CLIL-related data for the intended target audiences. Suggestions for further reading have been included in the reference section.

Chapter 2 presents an overview of the theoretical aspects of CLIL. Chapter 3 looks at what goes on in the CLIL classroom, with guidelines for CLIL teachers on preparing, conducting and modifying their CLIL lessons. Chapter 4 explains the specifics of vocational subjects and what that means for the CLIL-VET methodology. Chapter 5 rounds up this document with case studies of CLIL-VET lessons. Finally an extensive list of references allows the reader to explore the topics that could only be covered briefly in the present document in more detail.

# INTRO

*This document is intended as a resource for vocational trainers focusing on the specific demands in a vocational school context*

## 2. THE CONCEPT OF CLIL

### 2.1. Definition

In this document we subscribe to the following definition of CLIL:



*CLIL (Content and Language Integrated Learning) is a dual-focused educational approach in which an additional language is used for the learning and teaching of content and language with the objective of promoting both content and language mastery to predefined levels.*

(Marsh, et al., 2011)

(Coyle, et al., 2009) explain that the language focus and the content focus are interwoven, even if the emphasis is greater on one or the other at a given time. (Marsh & Marsland, 1999) allows for the L2 to be used for some or all of the curriculum. The same sentiment is echoed in (Marsh, 2002). CLIL refers to situations where subjects, or parts of subjects, are taught through a foreign language (for more discussion of this issue, cf. section 2.4).

CLIL may also be defined in terms of its far-reaching educational and social goals, that go beyond the immediate language and content gains. Thus, as noted in (Marsh, et al., 2001), CLIL is also about installing a hunger to learn in the student and about metalinguistic awareness: CLIL gives opportunity for the student to think about and develop how s/he communicates in general, even in the first language.

In the European context, CLIL-type teaching is often referred to as bilingual education or content-based instruction (Marsh & Wolff, 2007).

## DEFINITION

*“a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language”*

Marsh, et al., 2011

## 2.2. Advantages

The following collection of possible advantages of CLIL-based education raises no claim to completeness, but does represent the mind-set of the European educational authorities and researchers.

- CLIL leads to **better English proficiency** (Coleman, 2006).
- CLIL induces the learner to be **more cognitively active** during the learning process (Van De Craen, et al., 2007).
- Meeting the European Union's goal of introducing **plurilingual education in Europe** (Wolff, 2002).
- Improves **quality of foreign language teaching** (Muñoz, 2006) (Muñoz, 2015), with a notable improvement in the didactic and methodological skills of CLIL teachers and a possible impact on L1 teaching (Poisel & Putz-Mayerhofer, 2014).
- Improves **content-related competences**, due to task design and non-homogeneous perspectives on content issues (Marsh, et al., 2008).
- Increases **linguistic competences** (Muñoz, 2006) (Muñoz, 2015).
- **General improvements of cognitive skills** (Opacki, 2017).
- Development of a **European and an international orientation** (Marsh, et al., 2008).
- **Development of scientific literacy**, that is to use scientific knowledge, to identify scientific questions and to draw evidence-based conclusions in order to understand and help make decisions about the natural world and the changes made to it through human activity (OECD, 2012).

As noted in:



*CLIL is a very European-oriented approach and, even though it has developed differently in different European countries, the pan-European networks that have been set up give the approach a single educational framework.*

(Ludbrook, 2008)

This stresses the importance of European educational guidelines, like the present document, to ensure compatibility of the teaching outcomes across different countries, regional differences notwithstanding.

## 2.3. Concerns

Concerns about CLIL are well known at least since (Baetens-Beardsmore, 1988) and (Gajo, 2007), cf. also (Lyster, 2007), (Dalton-Puffer, 2007a), (Dalton-Puffer & Smit, 2007b). The major areas of concerns fall into four major categories, cf. (Baetens-Beardsmore, 2002):

- **The L1 problem:** Will L1 be negatively affected, given prolonged exposure to an L2?
- **The L2-problem:** Will L2 really develop better if it is used systematically as the language of instruction?
- **The school knowledge problem:** Given the inherent complexity of the curriculum subject, will L2 instruction additionally slow down progress in the content subject?
- **The socio-psychological problem:** Is bilingual education appropriate for any student profile?

To this list **concerns about inadequate teacher training** and lack of expert teachers / and teaching materials should be added. (Coonan, 2011).

## 2.4. Models

A major strength of CLIL-based teaching is the great flexibility of the model – it can easily be adapted to suit the needs of all stakeholders involved – students, parents, teachers, educational authorities. As revealed in the British Council's Profile *Report on Bilingual Education (English) in Poland* (Marsh, et al., 2008) for example, there are four major operating curricular models of bilingual provision:

- **Extensive English language medium instruction:** In this model English is predominant.
- **Partial English language medium instruction,** with both languages getting an equal share of class time and frequent code switching between the source language and L2 English.
- **Limited English language medium instruction,** with L1-L2 code switching. The learners' L1 takes up to 90% of the allotted class time. This approach favours modular CLIL provision (e.g. project-based teaching).
- **Specific English language medium instruction.** Here English is restricted to some predefined specific contexts and/or purposes. The model is therefore applicable even in cases where the teacher's L2 competence is limited.

The first three types – most directly relevant for effective CLIL tuition – are reported to appear in two models: single focus (content tuition) and dual focus (with content and language both attended to). As argued in (Coyle, et al., 2010), however, partial and extensive CLIL provision should have a clear triple focus on content, language and cognition.

Decisions about the appropriate model should not be taken lightly and should be preceded by a careful in-depth analysis of the stakeholders' needs and expectations. The choice of the model will influence all other pedagogical decisions – about teaching goals, learning outcomes, lesson frameworks, exercise formats, assessment models, etc.

As noted in (Coyle, et al., 2010), the inevitable shifts between the first language and the CLIL vehicular language in partial and limited English language instruction should take the form of planned translanguaging, i.e. systematic code switching for specific purposes (cf. section 4.5.1).

## 2.5. Areas of integration

### 2.5.1. Integrating language and content knowledge

Content is presented through a foreign language, so students have to deal with content knowledge through the medium of L2, in which they probably have limited competence. CLIL activities can either focus on language or on content as the context demands, but they have to contain both elements.

### 2.5.2. Integrating grammar and lexicon

The focus on specialized vocabulary frequently leads to the exclusion of a grammatical focus. To the extent that linguistic issues are addressed in a CLIL course (and we strongly suggest that they should) these activities can focus on specialized vocabulary and on grammar to varying degrees, but they have to contain both elements. Importantly, grammar and vocabulary tasks must be embedded in the subject matter, so that both linguistic and disciplinary expertise is required for a language task to be solved correctly (a level-1 requirement).

### 2.5.3. Integrating receptive and productive skills

For communication we distinguish between the receptive skills, listening and reading, and the productive skills, writing and speaking as defined in the Common European Framework for Languages (CEFR, 2001). CLIL task sequences have to cater for all four skills in order to enable the students to communicate successfully.

### 2.5.4. Integrating different learning styles

For the benefit of the students, CLIL tasks should employ a variety of different techniques, such as working with visuals (pictures, diagrams, graphs), sound (songs, videos, etc.), and encouraging students to get actively involved. CLIL teaching should be based on three guiding principles in this context: students should be encouraged to use their preferred learning style (Coffield, et al., 2004), task design and the range of proposed activities should adapt to the student's individual abilities, evaluation (assessment) of learning should be diversified accordingly, cf. (Invernizzi & Redaelli, 2011).

## 2.6. The 4Cs Framework

A successful CLIL course which reflects the integration criteria in 2.5 is compatible with the 4Cs framework:



*The 4C Framework integrates four contextualized building blocks: Content (subject matter), communication (language learning and using), cognition (learning and thinking processes) and culture (developing intercultural understanding and global citizenship).*

(Coyle, et al., 2010)

### 2.6.1. Content

Content is progression in knowledge, skills and understanding of a defined curriculum *both for the language and subject areas.*

### 2.6.2. Communication

Likewise, communication, narrowly defined for CLIL classroom purposes as the use of language to gain and share content knowledge, hinges on the interplay between foreign language lexico-grammatical competences and subject-related needs.

### 2.6.3. Cognition

Content is related to learning and thinking. Thinking processes have to be analysed for their linguistic demands. Tasks have to be designed to develop cognitive skills which foster the seamless creation of concept association, understanding and language.

### 2.6.4. Culture

As for culture, it encompasses and shapes the remaining cornerstones of CLIL methodology. There are cultural patterns to be explored in language (e.g. formulaicity, metaphors, pragmatic routines), content (e.g. terminology, data analysis, evaluation of events), communication (social roles of discourse participants, communicative strategies, discourse functions) and cognition (task design and task selection reflect the desired communicative use of the knowledge / skills / competences that CLIL lessons address). Additionally, in exposing learners to alternative perspectives, CLIL courses aim at broadening their cultural sensitivity and (self-) awareness. At this juncture the philosophy of CLIL overlaps with most intercultural teaching models, of which we would like to highlight Byram's ICC (Byram, 2015).

## 2.7. Coyle's 3As planning tools

The 4Cs model (Coyle, 2005) works as a guide for the overall planning of a CLIL unit. To get down to planning the details of the task sequences Coyle's 3A model might be very useful. It is based on a pragmatic use of language approach, defining the language needs, sometimes very specific ones especially for VET, to develop conceptual understanding. Coyle differs between three stages:

Stage 1: Analyse content for the language of learning.

Stage 2: Add to content language for learning.

Stage 3: Apply to content language through learning.

### 2.7.1. Analysing

After having defined the content of a CLIL task or of sequence of tasks, it is necessary to analyse and define the language needs in order to be able to cognitively grasp the input: identifying key words, formulaic language, grammatical functions such as hypothesizing, comparing, evaluating, use of tenses, modal verbs and many more. This list encompasses the language of learning.

### 2.7.2. Adding

The language for learning focuses on the needs of the learners in order to operate successfully in the CLIL classroom and master the task demands. Which reading/listening strategies do they need to deal with a difficult text, to take part in discussions, to express their opinions, and arguments? For that purpose they need scaffolding: What can the teacher do to support the learners to master the task successfully? He may provide language frames, sentence starters, list of crucial phrases. For more cf. chapter 3.2 on types of vocabulary and 3.3 on scaffolding. Only if there are an in-depth analysis of the language for learning and the provision of necessary scaffolding, content and language can be really integrated, which is the basic principle and purpose of CLIL.

### 2.7.3. Applying

At this stage the focus for the teacher is on developing task types and learning activities, in which the learners are encouraged to use the newly acquired knowledge, apply high level thinking skills to expand their learning and express their cognitive gains. This is the language through learning.

## 2.8. Cognition and language

### 2.8.1. BICS and CALPS

A useful division of language demands for CLIL teachers, based on Cummins' findings (Cummins, 1979) is that between Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP). L2 learners acquire BICS quickly within two to four years, as these skills are indispensable for every-day communicative routines (cognitively undemanding, context-rich social exchanges) the students engage in. More formal, cognitively demanding language, required for content-subject learning in an educational context takes significantly longer to emerge (about five to seven years according to Cummins' studies) and the ultimate attainment in the area of cognitive academic language proficiency (CALP) is largely dependent on the development of comparable skills in the learners' L1. Cummins captures that L1-L2 interdependence in his model by assuming that L1 skills and L2 skills ultimately derive from the same source – Common Underlying Proficiency (CUP).

### 2.8.2. LOT and HOT

Blooms Taxonomy, developed by Benjamin Bloom in the 1950's (Bloom, et al., 1956) and subsequently modified, is a useful tool for planning lessons. It provides a way to organize thinking skills into six levels from the most basic to the more complex levels of thinking. The levels of Bloom's Taxonomy, in order, are: remembering, understanding, applying, analyzing, evaluating, and creating. Levels at the bottom of the list are referred to as lower order thinking (LOT), whereas those in the second half are referred to as higher order thinking (HOT). The distinction between LOT and HOT relates to the lesser and greater amount of cognition involved in learning.

The difference between the cognitive demands of LOT and HOT becomes obvious with reference to skinny and fat questions: the first pertains to asking for content, the second for conceptual understanding, e.g. How does computer memory work? vs Why do we need different levels of computer memory to make it work faster?

### 2.8.3. Equilibrium

Cummins has developed a matrix which may help the teacher to develop material that is linguistically accessible for the students while still being cognitively demanding, moving from quadrant 3 eventually to quadrant 4.

## 2.9. Summary

In order to implement CLIL successfully it is necessary to understand the core features of CLIL. CLIL lessons are best regarded as neither language classes nor subject classes, but a sui generis amalgam of both, engaging a variety of different modalities. CLIL classes must include and encourage explorations of language with the explicit involvement of content-based subject and mediated by an experienced teacher, preferably familiar in equal proportions with both the subject matter and the vehicular language.

Therefore, teachers have to be able to:

- identify suitable content to be taught in CLIL and possible obstacles;
- identify suitable strategies to support content learning in L2;
- identify suitable strategies to support language learning in content classes;
- implement strategies to promote the development of learning skills while attending in equal measure to content, communication and cognition;
- apply strategies to foster critical thinking and the ability of linking new learning with the requirements for their later professional life;
- link language awareness to content learning and cognition;
- promote language learning while content learning;
- create a meaningful and supportive learning environment.

(Coyle, et al., 2010)

## QUOTATION

*BICS are skills needed for social, conversational situations. .... Tasks associated with BICS are often less cognitively demanding. Examples of less demanding tasks are: repeating greetings and matching cards with words and pictures.*

*CALP ... is required for academic school study. Language used in subject teaching is often abstract and formal and therefore it is cognitively demanding. Teachers need to recognize when learners should move from BICS to CALP and provide support. Examples of the use of cognitively demanding language are: justifying opinions, making hypotheses and interpreting evidence.*

(Bentley, 2010), (Cummins, 1984)

## 3. PEDAGOGICAL CONSIDERATIONS

### 3.1. CLIL activities

The following list offers a variety of CLIL-type activities. They have been compiled from numerous sources (Bentley, 2010), (Tanner & Dale, 2012), (Ball, et al., 2015), (Deller & Price, 2007) and workshops carried out at in-service trainings at the PH Wien. The overview makes no claim to completeness, but remains a fair source of inspiration for CLIL followers.

#### 3.1.1. CLIL activities: A cognitive focus

Depending on the activity learners need cognitive skills and related language structures (compare Bloom's Taxonomy).

TABLE 1 Cognitive skills, tasks and language structures

Cognitive skills	Classroom activities	Example activities
Remembering (thinking about things you know)	Recall, recite, recognize, relate, spell, tell.	From a number of pictures: which buildings are famous steel constructions?
Identifying (showing a relationship between things)	Identify, label, list, locate, match, name.	Label the various parts of a steel construction building.
Ordering (putting things in a particular order)	Order, organize, sequence.	Order the various stages of building a steel construction.
Comparing and contrasting (finding similarities and differences)	Compare, contrast, distinguish, investigate.	Compare various steel constructions from a technical point of view.
Classifying (putting things in groups according to their features)	Classify, categorize, decide which groups there are.	Low cost and high cost steel constructions and their pros and cons.
Hypothesizing (suggesting what would/could happen)	Suggest, decide, imagine, suppose.	Suggest ways of saving money without reducing quality of steel constructions as far as possible.
Reasoning (thinking why ...)	Explain, justify, recommend, solve.	Explain your idea of optimizing steel constructions.
Creative thinking/ synthesis (producing imaginative ideas from previous knowledge)	Build, create, compose, plan, produce, invent, ...	Design a steel construction for a new large greenhouse.
Evaluating (saying if something is good, useful, effective, ...)	Assess, comment on, judge.	Give a presentation about your greenhouse and why you think it is good.

### 3.1.2. Focus on receptive skills

#### 3.1.2.1. Listening and reading activities

Many of the activities for receptive skills have been accumulated from various CLIL courses and CLIL reference materials. The following activities are based on written/spoken texts or videos and additional visual input. Unless otherwise indicated, these activities can be adapted to the required CEFR language level (cf. appendix 1).

TABLE 2 List of listening/reading activities

Activity	Thinking skills	Language focus	Language skills	Procedure
Listen/read and label a diagram/picture/map/graph.	Remembering Understanding	Subject specific language	Listening Reading Writing	Students label a visual while/after listening to the teacher/reading a text.
Listen/read a text and answer yes/no questions.	Remembering Understanding	Subject specific language	Listening Reading Writing	Students answer questions.
Listen/read and fill in the visual: table, flowchart.	Remembering Understanding Analysing Arguing Transferring information	Subject specific language Explaining Expressing opinions Agreeing/disagreeing	Listening Reading Writing Speaking	Students fill in a table according to the text purpose: Facts and figures categorizing. Identifying cause and effect. Identifying fact and opinion. Identifying opposites, categories. Ranking. Sequences.
Listen/read and make notes on specific information (dates, figures, times).	Remembering Understanding	Subject specific language	Listening Reading Writing	Students listen for/ look for specific information and take down notes for later use.
Listen/read and reorder information.	Remembering Understanding	Subject specific language Reasoning	Listening Reading Writing Speaking	Students get jumbled sentences of a text/key words which they have to order while listening/reading.
Listen to the video and order the keywords according to certain categories.	Remembering Understanding Analysing	Subject specific language analysing Reasoning	Listening Reading Writing Speaking	While listening to a video students have to put the keywords into certain categories.
Listen/read and create a mind map (at least B1).	Remembering Understanding Categorizing Analysing	Subject specific language Analysing Reasoning	Listening Reading Writing Speaking	Students create a mind-map after listening/reading Follow Up- presentation and defence of product.

TABLE 2 List of listening/reading activities c.d.

Activity	Thinking skills	Language focus	Language skills	Procedure
Listen and label the stages of a process/instructions/sequences of a text.	Remembering Understanding Analysing Drawing conclusions	Subject specific language Analysing Expressing sequences	Listening Reading Writing Speaking	While/after listening/reading students fill in a chart/ put a jumbled text into correct order.
Listen and fill in the gaps in a text.	Understanding	Subject specific language	Listening	While listening students fill in words from a box.
Listen and choose the correct word out of two given.	Understanding	Subject specific language	Listening	While listening students have to cross out the wrong word/identify the correct word out of two.
Listen and choose the correct answer – multiple choice.	Understanding Thinking skills depend on strategies needed to identify the right option	Subject specific language	Listening	While listening students have to do multiple choice questions.
Listen/read and create a list of keywords for later presentation (at least B1).	Understanding Analysing Identifying key issues	Subject specific language	Listening Reading Speaking	Students are asked to choose e.g. 15 keywords from a text individually, then agree on e.g.10 keywords in a group of 4. One person in the group is asked to talk about the content with the help of the keywords.
Listen and draw.	Understanding	Subject specific language, Language of description	Listening Speaking Writing/drawing	In pairs: student A gets a picture which she/he has to describe, student B draws.
Bingo.	Understanding Remembering	Subject/ topic specific vocabulary	Listening	Played like bingo: Students fill in table of 16 with terms relevant to a topic, listen to teacher giving the definition of terms.
Listen/read instructions and reconstruct.	Understanding Remembering	Subject /topic specific vocabulary, verbs and grammatical structures	Listening	Teacher reads out instructions to create a product (picture, construction using Lego bricks and students construct required product.

### 3.1.2.2. Lexically dense authentic texts

When the teacher has decided to use an authentic text that may be difficult to deal with for the students, there are various strategies for making it digestible for them.

- **Simplify the language:** Simplify the language by replacing low frequency words by high frequency words, provide a glossary- the most economical way is often to give L2-L1 lists, add pictures, diagrams, etc.
- **Work on layout conventions to highlight main ideas of the text:** If the text is well organized there is a hierarchy of information. Therefore this technique serves a twofold aim of aiding comprehension and providing practice in writing.

The following elements can possibly be found:

- Title.
- Subtitles.
- Paragraphs and their topic sentences, which have to relate to subtitles and title.
- Pictures or visuals directly related to content.

SQ3R (Survey-questions- three times reading):

1. Students consider the text layout title, subtitles, pictures, and try to guess what the text is about.
2. Then they put questions to the text: what they expect to learn from the text.
3. Then they read the text 3 times- skimming, scanning, and reading for details.
  - What text type is it?
  - What is the purpose of the text?
  - What is the topic? Can I find the answers to my questions?
4. Does the text give them the answers to their questions?

- Paraphrase passages with high lexical density.
- Transfer content into visuals, diagrams, etc.
- Eliminate redundant or unnecessary information.

All these steps are very time consuming. There are some suggestions for activities that might reduce the workload and still be effective:

- Students produce a personal word list of unknown words (topic-specific words / high frequency words / unfamiliar collocations / unfamiliar connotations), then in groups produce a master list which are compared and discussed in the classroom.
- Linking paragraphs with headlines and pictures: a text is split into paragraphs

and students in groups have to allocate given headlines and pictures to the individual paragraphs. Then they have to put the paragraphs into correct order.

- Linking paragraphs with diagrams: a text is split into paragraphs, students have to link paragraphs to visuals/ diagrams.
- Ordering paragraphs to create a coherent text, looking for linking words, relation between the ideas in the paragraphs.
- Ordering the sentences within a paragraph, checking for an introductory sentence, expanding on the main idea, giving examples, concluding the main idea of a paragraph. It is an effective way to check if a paragraph is well written.

### 3.1.3. Focus on productive skills

Productive skills here refer to writing, spoken production and interactive speaking.

#### 3.1.3.1. Support writing outputs

What are the key genres learners have to produce in the specific vocational subject? They probably will not have to write creative essays, but business letters, reports, minutes, proceedings, logs, etc. Students have to be able to plan, draft, revise, edit and proofread their writing. They have to know the characteristics of the required key forms, clearly defined text conventions for each text sort which are usually taught in EFL classes. This offers a good chance for cross- curricular projects.

Texts have to be structured – headlines, paragraphs, connectors between paragraphs, cross references, starting with general statement introducing the topic and ending with conclusion.

Paragraphs have to be structured starting with introductory sentence, then followed by focusing on main idea of paragraph supported by examples, and conclusion leading over to next paragraph. To each subject there are typical grammatical structures as mentioned above, which have to be present in the required written text.

Paragraph building techniques, accuracy, the choice of the correct register, correct spelling and anaphora (co reference) maintenance are key skills in text writing. Cooperation with the EFL teacher might turn out to be a win- win situation.

Visuals (with or without further support at word, sentence level, etc.) support learners at word, sentence or text level; a diagram, chart, map, etc. possibly with a word list, substitution table etc.

Process writing and Portfolio work (Poisel, 2008): Students produce a text, the teacher gives feedback/suggestions/ but not direct corrections with regard to language and content aspects, students process this feedback and hand in a new version, which is again checked by teacher- the cycle can be repeated, final text is edited, proofread and published. The best products are collected as evidence of personal achievements.

### 3.1.3.2. Speaking activities

Speaking activities can potentially be among the most enjoyable; still, they are often intimidating as well, as they take place before an audience. Therefore, the teacher must make sure to create a context-rich, safe environment to encourage students to talk. Typical speaking activities include:

TABLE 3 List of speaking activities

Activity	Procedure	Possible scaffolding	Purpose
Find somebody who....	Students are given a list of terms/questions and are asked to move round the classroom to find somebody who knows the answers.	Word bank/nouns, verbs	Consolidating knowledge Assessing knowledge
Trivia search "Things I know and things I want to know"	Students are given six questions and six answers to questions that are distributed at random among other students. They have to find their answers by asking round.		Consolidating learning Revision
Question loops with terms and definitions/ questions and answers/ cause and effect/	Questions and answers are cut into separated slips. By walking round students have to find the pairs.		Consolidating learning
Describe and draw (see listening)	Student A gets a picture, students B gets a blank paper, A describes what B has to draw.	Language frames, vocabulary	Starting a topic Activating existing knowledge
Word guessing games – like "activity" – "Taboo"	Prepare a sheet of vocab and put the class into teams. Each team has one minute to guess as many words as possible and they get one point for each correct guess.		Assessing knowledge
Running dictations	Students pair up, a text is pinned up, A has to memorize one sentence from the text and dictate it to B, who cannot see the text, B writes the sentence down. B's version is compared to original text.		Consolidating knowledge
Speaking from a model	Students are given a model to talk about the topic/ idea/ issue.	Prompts for explaining, describing	Assessing learning

TABLE 3 List of speaking activities c.d.

Activity	Procedure	Possible scaffolding	Purpose
Text gap filling Cloze text filling	Student A and B have the same text with different gaps. By asking questions they have to find the missing information. They are not allowed to show each other their texts.	Question sheet	Task for learning
Information gap filling	Visual with different labels for student A and student B. By asking questions they have to fill in the missing information on their version.		Task for learning
Information exchange	A text is cut into two pieces A and B, students have to find the answers to a set of questions from their parts.		Task for learning
Class surveys using questionnaires	Students interview people in their schools about a topic/ situation/ issue and process results.	Language structures set-up/principles of questionnaires	Starting a project Pre-task for new topic Enforcing theory etc.
Interviews	As a role play student A interviews B on a certain topic.	Language structures Conventions on interviewing	Researching a topic
Presentations	Students give a presentation on a topic they have investigated.	Visuals Language support handout	Final round-up
Hot seat	A students has to answer questions from the audience (class).	Vocabulary Conventions for interrogations	Assessing learning
Talk shows	Talk master and members of talk show discuss a controversial idea.	Conventions for talk shows Vocabulary and language structures for agreeing/ disagreeing etc.	Assessing learning Rounding up a topic
Role plays	Several roles of a controversial topic are defined and aligned to students who play out their roles.	Vocabulary and language structures Disagreeing/agreeing Arguing Defending	Rounding up a topic
Producing a rap song	Students produce a rap song on content of the topic.	Vocabulary Musical rhythm to follow lexis following rap-song convention	Rounding up a topic

### 3.1.4. Working with visuals

Especially when working with authentic texts/ videos, even if they have been simplified or supported by a transcript, it is often helpful to have learners represent the content by means of related visuals.

TABLE 4 Task types and related visuals

Name	Type of task and examples of language used
Bar chart	To show frequency or quantity, to rank items, to compare.
Carroll diagram	To sort yes/no information according to opposite criteria.
Cycle	To show a series of events occurring again and again, to show cause and effect. Language: then, next, after that, as a next step, it follows that, consequently, what follows is.
Mind map	To show facts and their relation. Language: Also, in addition, as well as, too, is related to, relates to, belongs to, goes with.
Flow chart	To show the order of a process. Language: First, then, secondly, later, eventually, finally, start with, next step is, it follows that, alternatives are.
Trend map	To show a trend or data using x and y axis.
Pie chart	To show different amounts or frequency as parts of a cycle. Language: comparisons, percentage, based on data from, reflects that.
Process / cause and effect diagram	To show cause and effect network that leads to a specific outcome, reflecting the different steps leading up to the final solution. Language: As a result, it follows that, consequently, therefore, so, logically.
Quadrants	To show connections between concepts e.g. conceptual demand and language demand in a task. Language: If, it follows that, we have to consider, take into consideration.
T-diagram	To show two opposites, two sides-for and against.
Table	To categorize information.
Time line	To show events usually in chronological order.
Venn diagram	To show commonalities, similarities and differences.

### 3.2. Dealing with vocabulary

In a text there are generally four types of vocabulary (Bentley, 2010), (Wray, 2002):

- I. Subject-specific language (formal/academic/technical/specialized, CALP-related)
  - A. Content-obligatory (both high-frequency and low-frequency words).
  - B. Content-compatible.
  
- II. General English (varying degrees of formality, function-sensitive, non-academic communication, includes BICS).
  
- III. Formulaic language (Wray, 2002).
  - A. Academic.
  - B. General.
  
- IV. Other lexis (including idiosyncrasies, which need to be pointed out to fight negative transfer (Opacki & Gozdawa-Gołębiowski, 2017).

Especially in an L2 context, analysing the input material as well as the output wished for accordingly is highly important, especially with regard to required scaffolding.

### 3.3. Scaffolding

In order to ensure that students can master input or output in the L2, the teacher has to provide language support, or scaffolding, which becomes obsolete in the course of communicative progression.

The following is a list examples of scaffolding techniques designed for CLIL:

- highlighting vocabulary and providing a word list;
- flashcards-pictures and term;
- creating a work bank/mind map which is continually expanded and put up visibly in the classroom;
- asking the students to create glossaries – term, picture, collocation/phrase/sentence using the term;
- filling in visuals/pictures with terms;
- working with memories, triminos, collocation tables;
- asking students to create word lists/ first find individually 15 new words (either all categories, or only one), then in groups agree on 10 words- master word list, find definitions or synonyms for 5;
- giving learners frames, tables to form grammatically correct sentences and leaving content choices open;
- model sentences/sentence starters for speaking, writing:
  - Steel is suitable for.....
  - The advantages of using steel are/may be....
  - It is important to consider.....
  - When erecting a steel construction it is advisable to....

### 3.4. The CLIL tool kit

The following describes a course of action to prepare and carry out a CLIL lesson.

#### 3.4.1. Choose a topic

When a CLIL teacher teaches just part of the lessons as CLIL lessons the first step is to decide which content to do in CLIL. Possible aspects to help choose might be: Which topics are suited with regard to complexity and cognitive demands? Where do I find suitable material for? What is the “fun factor”?

#### 3.4.2. Choose duration

For teachers that are new to CLIL, it may be a good idea to keep the first CLIL lessons short. If possible, evaluate the lesson, reflect on it, and try again. With more experience, it usually makes sense to expand gradually to longer spans of time.

#### 3.4.3. Define the learners’ language level

The Common European Framework of Reference for Languages (see appendix 1) is an international standard for describing language ability. It describes language ability on a six-point scale, from A1 for beginners, up to C2 for high language proficiency. Each level describes the standards in five skills: listening and reading, also called receptive skills, and writing, interactive speaking and spoken production. This makes it possible for anyone involved in language acquisition to determine the level of language needed for different purposes. Determining the level of language ability of the learners is crucial in CLIL task design.

#### 3.4.4. Define teaching and learning goals

Define your teaching and learning goals. They should be related to both content or to language skills. Additionally it is useful to set a time span. It might be advantageous already at this early state to draft a rough outline of how these goals are to be reached.

#### 3.4.5. Find material

Source material is usually found in books, newspaper articles, journals, or via internet. For this reason, the material is usually an authentic text, an image, or an audio/video recording.

The challenge for audio/video recordings is often finding examples that cover the content in the desired depth and at the same time ensure that the language of the speaker is comprehensible.

The challenge of finding in-depth content applies to texts as well. In addition, written materials are often hard to comprehend and may require a lot of additional language support by the teacher, going beyond vocabulary lists (cf. 3.2. and 3.3.).

### 3.4.6. Identify language needs

Each subject has its specific content-obligatory language, comprising vocabulary, subject jargon, subject-specific collocations, grammatical structures and functional language (cf. 3.2 and 3.3). Learners need this subject-specific language to understand the content and refer to it in communication (CALP- cognitive academic language proficiency, cf. 132.8.1).

Learners also need to know less formal everyday language (BICS basic interpersonal communicative skills). Since CLIL-VET teachers are mainly subject teachers, they tend to focus on content comprehension in their classrooms. They focus on vocabulary rather than grammatical structures. They do not teach grammar overtly, but they have to develop tasks that are based on the principle that:

”

*Language is perceived as grammaticalised lexis, rather than lexicalised grammar.*

(Lewis & Gough, 1997)

### 3.4.7. Identify necessary cognitive skills

As mentioned above, within a task sequence there is generally a conceptual change from LOT to HOT. What is important is to define the cognitive demands in each step using Bloom’s Taxonomy in order to provide the necessary language frames as support. The subject teachers have to identify the specific cognitive skills and make sure the students are able to employ these skills correctly. A great help here is the “Academic Language Function Tool Kit” available for download at <https://sweetwaterschools.in-structure.com/courses/1080113/files/31344925>.

### 3.4.8. Create activities

Extensive lists of sample activities have been given above in this chapter. One important part of any CLIL lesson is to encourage discussion. For this reason, emphasis should be placed on activities that involve speaking.

### 3.4.9. Sequence activities

There should be more than one activity per CLIL lesson. In CLIL lessons a gradual change from LOT to HOT (cf. 2.8.2) should be encouraged. LOT activities easily allow the teacher to address the language needs of the students. For example, subject-specific vocabulary can be recycled during this phase of the lesson.

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*LOT activities easily allow the teacher to address the language needs of the students.*

Here is a short checklist that may help in evaluating a CLIL lesson:

- Is the learning/teaching goal clearly defined?
- Does the lesson plan move from simple to complex cognitive demands?
- Do the tasks follow the basic didactic principle of “task to learn, task to consolidate learning, task to assess learning”?
- Is there a variety of tasks appealing to diverse learning styles?
- Do the tasks involve the students actively? Are they student-oriented?
- Do the tasks integrate both content and language elements?
- Is there sufficient language scaffolding offered?
- Is the layout of the learning material easy to grasp and of good quality (font, size, layout, text conventions, colours, readable copies)?
- Is there an assessment rubric that checks if the learners have reached their learning goals?

#### 3.4.10. Conducting the lesson

If one seeks to make CLIL an enjoyable experience for all learners, there are some challenges that need to be considered, addressed, and overcome. Overcoming these challenges will demand a considerable effort not only from the teacher, but the students as well.

When dealing with CLIL learners have to:

- process new and complex information through a foreign language with limited resources;
- structure ideas, speak spontaneously, and write texts about a complex and fairly novel topics in the target (vehicular) language; the subject matter itself would likely prove demanding in L1 as well;
- adjust the linguistic complexity of the text to express the required cognitive demands.

Some advice from CLIL vocational practitioners:

- keep the input phase as short as possible;
- tell the learners explicitly what the key ideas and goals of the learning unit are;
- write key ideas on the blackboard (e.g. as bullet points);
- highlight/signpost/restate key ideas;
- offer the learners a variety of tasks to avoid monotony;
- provide the students with an assortment of tasks to stimulate curiosity and be responsive to various learning styles;

- do not spoon-feed them; instead, endeavour to provide a scaled challenge;
- develop student-oriented tasks to keep them focused;
- keep the language of the instructions simple and give clear guidelines as to what to do;
- play audio materials at least twice and give the learners time to do the tasks in between the two runs; if the audio material is long, stop when new ideas are introduced; make sure that the audio material is of good quality- no muffled sounds, no background noise;
- videos are often prevalent in CLIL lessons; the challenge is to find suitable videos with regard to conceptual demand; transcripts and subtitles should be provided when necessary;
- cooperative learning only works with a rigid time plan, clear instructions, challenging tasks, and clear assessment modes;
- be flexible; if switching to L1 is necessary in order to ensure that the cognitive demands of the lesson are understood, do not hesitate to do so;
- in case of limited English language medium, it might be advantageous to use trans-languaging, for example by starting in L2, doing the main part in L1 and summarizing the content of the lesson in L2;
- whenever possible, do a dry-run before you test the CLIL materials on your students.

#### 3.4.11. Personal Reflection

As in a “regular” L1 subject lesson, reflection after the CLIL lesson is recommended.

The following points might prove helpful:

- Was I able to I keep to my time-plan?
- Were the learners able to achieve the learning goals?
- Could the learners follow the input?
- Were the tasks doable?
- Did the learners have difficulty meeting the cognitive demands?
- What were the cognitive difficulties?
- Did they have difficulties coping with the linguistic demands?
- What were the linguistic difficulties?
- Did the worksheets appeal to the learners?
- Were they easy to read (font, print quality, etc.)?
- Were the learners actively involved?
- What could be improved?

## 4. CLIL-VET

### 4.1. Definition

CLIL-VET refers to the practice of applying CLIL in Vocational and Work-based education for the purpose of learning a trade and developing key language competences.

These skills are crucial for effective communication in the workplace, for the transfer of relevant technologies, and the professional development of learners, allowing them to learn a trade and acquire the tools to bring that trade beyond their native environment (e.g. having the language to work outside their country).

### 4.2. CLIL-VET relationship

Vocational training has become increasingly popular among European students in the last few years. It provides the learners with an interesting alternative to secondary and college education, and it also allows the students to learn a trade, a useful asset when it comes to finding a job after one has concluded their studies. For some students, vocational training is also a way to reconnect with a learning environment after graduation. One of the main goals is to equip them with the powers to use scientific knowledge, to identify scientific questions and to draw evidence-based conclusions in order to appreciate, participate and contribute to their country's culture and economy and – in more general terms – to understand and help make decisions about the natural world and the changes made to it through human activity.

The European Union has issued a clear recommendation, voiced by the European Commission: Educational Administrations of the member states should offer a bilingual education. The reasons for this are obvious: there is obviously a need to educate students who have a working knowledge of at least one or two other languages, in addition to their own, in order to improve their chances of entering and remaining in the labour market of a multilingual society, allowing them to feel at home in the newly emerging Pan-European society and consider themselves fully fledged citizens. Numerous plans for the implementation and improvement of language teaching have emerged in recent years, having been carried out by different countries, with varying degrees of success.

CLIL ranks high among the successful approaches. It improves student's spoken interaction in the foreign language, helps develop a positive attitude towards bilingualism and a deeper linguistic immersion and cognitive involvement. In addition, working with

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*Vocational training has become increasingly popular among European students in the last few years.*

the curricular content of a subject in another language is a greater effort but at the same time it implies that the learning is carried out from a different perspective.

Learning through a foreign language is harder but also more rewarding for the students. They will be learning not just a skillset during their classes, but they will also become more proficient in another language in the process. This will potentially lead to better job opportunities after they've finished studying, even allowing them to seek for a job in a different country. In a globalized economy where nearly everything is related and connected with each other, the students that can effectively use English as a second language will have job opportunities unavailable to other candidates.

Knowledge of foreign languages is recognized as a key competence in the labour market. Therefore it is obvious that vocational schools should focus on improving student's language skills in order to meet the obligation to prepare young people for work, especially in the context of ongoing globalization, regardless of their ultimate specialization – be it healthcare, social services, industry, business or administration. Content and Language Integrated Learning enables vocational schools to meet the needs of the economy by improving general and specialist language skills of employees, as well as by increasing the competences of professionally active people.

It should also be noted that the British Council organised four Regional Policy Dialogues in Europe between May 2013 and March 2014. The Dialogues examined the contribution of languages to vocational education and training (VET). The institutions participating considered the relationship between content and language integrated learning (CLIL) and VET and concluded that the two are compatible in their shared concern for promoting an ability to use language in real life situations. The talk basically suggested that CLIL is the natural ally of vocationally oriented education, with regard to both its hands-on approach and to its facilitation of multilingualism. It also compared and contrasted CLIL with Vocational English, and suggested that CLIL's focus on procedural knowledge makes it the ideal vehicle to fulfill the aims of the EU's strategic Europe 2020 initiative.

### 4.3. Expected teaching objectives

In accordance with the Resolution of the European Council of 21 November 2008 on a European strategy for multilingualism (Commented on in (Krzyżanowski & Wodak, 2011) among others) and likewise Communication COM (2003) 449 from the European Commission (Touched upon in (Smismans, 2003)) to the European Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on Promoting Language Learning and Linguistic Diversity: an Action Plan 2004 – 2006, the following aims are proposed for CLIL-VET courses, in addition to the already mentioned general CLIL objectives:

- to integrate language and vocational knowledge;
- to improve transfer of technology within the European Union by providing a common medium of communication, shared knowledge, and similar learning experiences for VET students across associated EU member states;
- to expand the professional working language competence of VET students via immersive and subject-oriented instruction;
- to foster and stimulate the motivation of VET students both with reference to the content studied as well as the language used as the medium of instruction;
- to contribute to the propagation of functional bilingualism/ multilingualism, and all of the social, vocational, and cognitive benefits associated therewith, in Europe in line with appropriate EU directives, including, but not limited to those quoted above;
- to help with the flow of workforce (employability of VET graduates), especially since some degree of fluency in foreign languages is an employment criterion with many companies (Marsh, 2002);
- to prepare for EU integration (Marsh, 2002);
- to enhance school profile (Marsh, 2002);
- to turn the experience of learning through English into a catalyst for learning other languages (Marsh, 2002).

#### 4.4. Frame conditions of CLIL-VET

##### 4.4.1. Focus on content more than on language

Since the goal of vocational schools is to prepare students for their future jobs in highly specialized professional domains, the focus is generally more content-based rather than linguistic for the time being, aiming at developing competences necessary for a specific field of expertise. This is true for “regular” L1 classes as well.

##### 4.4.2. Time pressure

There is a concern of vocational teachers that they cannot cover the subject curriculum because of its amount and complexity. Many CLIL-VET teachers feel that it is not their main responsibility to improve the L2 language skills of the students. Therefore in their CLIL lessons the activities that focus on language are often kept to a minimum.

##### 4.4.3. Language skills of CLIL-VET teachers

The vast majority of VET teachers are not native speakers of the vehicular language and are not ELT teacher.

While they are usually highly respected in their schools for their subject knowledge, their English language skills are usually poorer than their content-subject skills.

Students usually do not see CLIL-VET teachers as language experts. They take advice on their linguistic performance from ELT teachers, but not from CLIL-VET teachers. However, students automatically pick up language boosters from material, be it audios/ videos or any other activity. Here some difficulties may arise, when students address specific linguistic aspects, which the CLIL-VET teachers should be prepared to answer or refer to EFL teachers. After all they are not the L2 teachers.

##### 4.4.4. Complexity of content

Many subjects taught in vocational schools are highly complex. Teaching such concepts through CLIL may be a challenge, given the obvious time constraints and language competence issues, discussed in the previous section.

CLIL models like c and d (cf. 2.4.) do not require all lessons to be CLIL lessons. It might be easier in those cases to select topics that are more suitable to be done in CLIL with regard to cognitive and linguistic demands.

##### 4.4.5. Professional background of CLIL teachers

The professional background of CLIL VET teachers differs greatly in various countries. In Austria, for example, many vocational teachers have chosen to take up teaching fairly late in their professional lives, after having worked in the industry or in the private sector. They are primarily not educators, but experts in their professional fields.

Those CLIL-VET teachers are usually highly respected for the subject know-how and

their connections to the industry. They usually do not regard teaching students English as top priority of their job.

##### 4.4.6. Language skills of students

Since upper secondary students are required to have acquired a language level of at least A2, they move on to B1, B1+ and eventually to B2 when leaving vocational schools.

That means that in many cases English language skills of the students match or exceed the CLIL teachers’ linguistic competence. In that case clearly linguistically restricted linguistic level with a rather reduced language part would take a lot of pressure from the teacher without fossilizing language mistakes on part of the students. The more student-centred tasks with both content and language demands are, the less immediate involvement on part of the teacher is necessary.

##### 4.4.7. Age of the students

Upper secondary education generally starts after eight years of schooling and lasts for several years. In Austria upper secondary vocational training takes five years. So, when the students are introduced to CLIL, students are late teens. Therefore, different pedagogical principles have to be applied.

If students have clear ideas of where their chosen education should lead them, every lesson they spend in a learning context where they do not acquire new knowledge is time wasted. This fact has clear pedagogical, didactic, and methodological implications.

Principles of adult education may help in CLIL as well:

- Adults more than YLs expect to progress visibly in their learning.
- Adults feel that they are entitled to learn what they can practically make use of.
- Adults expect to learn from solving realistic problems.
- Adults do not want to waste time on tasks with little learning merit.

## 4.5. CLIL-VET methodology

Many CLIL-VET lessons have properties described in chapter 4.4. That makes CLIL-VET a specific type of CLIL, asking, however, for special proceedings. Since there has been little documentation of CLIL VET available up to date, we can only suggest a few possibilities, but more research in the area is clearly required.

### 4.5.1. Translanguaging

Translanguaging activities use both L1 and L2. The working language is the learners' L1, to be later replaced by L2.

In a typical translanguaging activity students get a text in L1, with questions in the CLIL language (L2). They are supposed to answer in L2 as well. That way the students can process the content and learn subject specific vocabulary in L1, usually needed for later exams, and by reading and answering the questions in L2, they are exposed to L2 subject specific vocabulary.

Language support is given by a list of formulaic language, functional phrases and subject specific vocabulary.

CLIL-VET translanguaging activities are recommended when:

- the complexity of the content is high;
- there is time pressure to cover the curriculum;
- L2 language skills of the students are high.

After a translanguaging activity the students should be able to answer questions on the subject in L2 in free speech and thereby use L2 subject specific vocabulary.

### 4.5.2. Functional language

In many cases vocational students have both the required cognitive skills and the required language skills for the vocational topic, but the correct words do not come to mind easily. A good list of functional language phrases can be very helpful. This list can be coordinated between CLIL teachers and language teachers. Such a list helps supports the student's language needs very efficiently.

### 4.5.3. Lingua franca in technical context

As in all fields of knowledge, an international expert language for each subject has emerged, which relies heavily on the correct content-obligatory terminology and formulaic academic language. To guarantee global understandability these aspects have to be strictly observed. It is often very difficult for teachers to get hold of the correct language. A number of internet dictionaries, forums, blogs, etc. offer possibilities to help solve this difficulty.

Lingua franca has its own grammar, terminology, phonetics which is often different from the standard language. Especially in vocational subjects it is very important to use terminology and formulaic academic language internationally valid.

## 4.6. Conclusion

So far there has been little documentation on CLIL-VET specifications. Naturally CLIL-VET is largely in concordance with general CLIL and its didactic principles and methodology, such as Coyle's 4Cs, the 3A's, the different language skills, scaffolding, etc. The big difference seems to be the demand and obligation to cater for vocational skills in L2, which ask for professional knowledge and competences on top of L2 acquisition, which will be directly put on trial in the student's professional life. For the time being CLIL-VET teachers have to rely on general CLIL methodology and adapt existing CLIL principles for their subject-specific purposes.

## 5. CASE STUDY OF OER CLIL-VET LESSONS

### 5.1. Sterile working and bacteria control

<b>Subject:</b>	BIOLOGY
<b>Topic:</b>	Sterile working and bacteria control
<b>Link:</b>	<a href="http://www.htl.at/fileadmin/content/clil/Samples/CLIL_Biologie_und_Mikrobiologie_bacteria_25112012_ab.pdf">http://www.htl.at/fileadmin/content/clil/Samples/CLIL_Biologie_und_Mikrobiologie_bacteria_25112012_ab.pdf</a>

Activity 1 starts with a video (<http://www.youtube.com/watch?v=4lmwbBzCIAC>) (17.11.2012) about bacteria on cell phones. This spot done by Nicole Brady of KOB-TV in Albuquerque, New Mexico, shows how many germs can accumulate on cellular phones. The transcript is provided, but in numerous sentences two words sounding similar are given. While listening the students have to tick off the wrong one. This task focuses mainly on language, by asking the students to guess the right word from the context. Thus the strategy to listen closely and identify the meaning of words from their context, which is a very important strategy, is enhanced (cf. 3.1.2.1 listening strategies). The video functions as a starter to get students interested in the topic so far.

Activity 2 uses an interesting way of introducing content intrinsically. Five questions have to be linked to given answers. Students can do this without knowing anything about the content by simply applying grammatical rules. There are two surplus answers, which makes the exercise more difficult and less prone to mistakes.

Activity 3 assesses the learning so far: the students have to prove that they can transfer the knowledge they have acquired in the video and the questions -and -answers activity by explaining the difference between sterilization and disinfection. Activity 3 rounds up the first sub concept- the difference between sterilization and disinfection, which serves as the basis for further sub concepts.

The second sub concept focuses on the history of bacteria research and findings. Activity 4 is a reading task: students have to produce a time line (Transfer content into visuals, diagrams, etc.) by finding specific details in the text (cf. 3.1.2.2 reading strategies).

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Activity 4 therefore focuses on both language and content equally. Asking the students to produce a timeline makes it easy for the teacher to check if the students could identify the necessary details.

Activity 5 expands on the difference between sterilization and disinfection by introducing the new concepts of contamination by pathogens, antisepsis, degerming, sanitization, and pasteurization. Students have to pair up to complete a text by asking each other questions to fill in gaps. Student A has different gaps to fill in than student B (text gap filling). What is important about that activity is that the students have to write out the questions to pass on to the partner, which are returned with the answers. This way two things are gained: the students cannot simply copy the missing words from each other. By writing out the questions and the filling in the necessary words the new terms and concepts are consolidated. There is a language focus as well by training the students to form correct questions.

Activity 6 is to consolidate and expand the concepts acquired so far. The students have to complete a table by allocating the right terms to definitions, examples, and comments. At first sight this exercise seems difficult, but at second glance it can be managed, because all the necessary information can be found in the material supplied so far. A very valuable language aspect is included by asking students to link Latin suffixes and prefixes to concepts.

In activity 7 the students are asked to carry out an experiment to see the theoretical input in practice (see Inquiry-based research laboratory work). By interpreting the result they prove that they can transfer the acquired knowledge to a new situation (see Bloom's Taxonomy).

Activity 8 seems to be quite challenging and encourages students to hypothesize and evaluate by using associations, pre-knowledge and common sense. As a class discussion it can be very rewarding and thought inspiring.

In conclusion, this CLIL unit incorporates essential aspects of CLIL methodology:

- manageable tasks, but still challenging;
- a variety of tasks;
- task cycles following the general principle of CLIL modus operandi: task to learn, to consolidate learning and to assess learning;
- each task providing a language and a content input;
- moving along conceptual progression.

## 5.2. Wireless microphone unit

<b>Subject:</b>	ELECTRONICS – HIGH FREQUENCY TECHNOLOGY
<b>Topic:</b>	Wireless microphone unit
<b>Link:</b>	<a href="http://www.htl.at/fileadmin/content/clil/Samples/CLIL_Hochfrequenztechnik_microphone_18112012_ab.pdf">http://www.htl.at/fileadmin/content/clil/Samples/CLIL_Hochfrequenztechnik_microphone_18112012_ab.pdf</a>

Activity 1: Students receive a text on how to set up a wireless microphone unit and are asked to produce a glossary by matching the English and German words and adding three words of their own choice taken from the text (skimming). There is a lot of content input with topic specific terminology and little focus on language apart from the vocabulary work. It might be a good idea to extend the activity by asking the students to add definitions in English to the terms and give examples of their common usage, e.g. extension cable: cable to help gap a distance between two gadgets or socket and gadget.

Activity 2 checks the students' understanding of the text: they are asked to read the text once more (scanning) looking for specific details (see reading strategies). Here we have both content and language aspects involved, a reading, writing and probably eventually a speaking activity as a follow-up.

Activity 3 is a challenging task asking the students to digest what they have learned so far and transfer it to a new situation. Students have to perform a topic-related troubleshooting situation via a phone-call. It not only checks on their conceptual understanding, but asks for their argumentative and social skills as well. Depending on the language level of the students it might be helpful to provide language frames for giving instructions and conducting a successful argument.

In conclusion, this short CLIL unit focuses more on content and conceptual progression than on language. In this aspect it is a typical CLIL-VET unit, in which the teacher assumes that the students can master at least B1. Activity 3 is likely to appeal to students and encourages them to talk freely. It is therefore recommendable not to correct students if they make mistakes.

### 5.3. Operational Amplifiers

<b>Subject:</b>	ELECTRICAL ENGINEERING – AUTOMATION TECHNOLOGY
<b>Topic:</b>	Operational Amplifiers
<b>Link:</b>	<a href="http://www.htl.at/fileadmin/content/clil/Samples/CLIL_Automatisierungstechnik_op_amp_09122012_finalversion.pdf">http://www.htl.at/fileadmin/content/clil/Samples/CLIL_Automatisierungstechnik_op_amp_09122012_finalversion.pdf</a>

In activity 1 students are asked to watch two videos (Introduction on OpAmp, Inverting OpAmp circuit) and take down key words and notes. Pre-knowledge seems essential to understand the text. Still, the videos have to be watched at least twice, because the speaker has a strong American accent and little enthusiasm. There is a high density of topic-related terminology and low-frequency words. It might help to stop the videos various times when listening the first time to give the students time to write down the key words and ask the teacher for clarification. The author suggests to give German translations for unknown vocabulary for time- economical reason. Evaluating the relation between language and content input, the focus is on content.

Activity 2 uses the content input to complete a mind map with phrases given in boxes. As language support the correct verbs and verb forms are given. Consequently students can concentrate on the correct content and concepts and need not worry about accuracy, when they have to compare their results.

Activity 3 consists of watching more videos that serve to extend the concept. Students have to add new information to the mind map for later presentations. They are also asked to edit a vocabulary list. Various possibilities are offered, some of which can also be used as vocabulary trainers.

In activity 4 students are asked to give a presentation on the findings so far. It is not clarified how these presentations are done: if they are results of group work or if students are picked out at random without any time for preparation. There is no indication how many presentations are given: does one student present the topic once, are there more presentations of the same, or are different aspects presented by various people. In order to keep all the students actively involved they are asked to take down notes while listening to the presentations for later discussion and analysis. It might be suggested to use the “market place” method here to make the information exchange more interactive: group A, group B, group C, group D consisting of four or five students produce a mind map as suggested using yEd. As a second step new groups are formed

consisting of A-B-C-D –moving from poster to poster discussing differences. Thus the new knowledge is consolidated by four repetitions and more likely transferred from working memory to long-term memory.

Activity 5 rounds up this CLIL unit by assessing if students can transfer what they have learned into a new situation. In groups they have to find the correct sequence for deriving the gain of an ideal inverting op-amp circuit with a simple numerical example and write the correct numbers next to the texts 1-10. As a final HOT task they have to find a miscalculation in the given calculations.

Obviously this CLIL unit successfully deals with a highly complex topic without discouraging students. However, it relies on the student’s listening skills at B2 and high mathematical literacy, even if the videos are watched repeatedly. Transcripts or given key words, which have to be put into correct order as appearing in the text, might help weaker students. With regard to speaking and writing skills effective language scaffolding is provided with the help of the mind map.

If there is time, it might be a good idea to ask students to write a text on Operational Amplifiers using the mind map.



# APPENDIX 1

## - COMMON EUROPEAN FRAMEWORK OF REFERENCE FOR LANGUAGES

		A1	A2
U N D E R S T A N D I N G	<b>Listening</b>	I can recognise familiar words and very basic phrases concerning myself, my family and immediate concrete surroundings when people speak slowly and clearly.	I can understand phrases and the highest frequency vocabulary related to areas of most immediate personal relevance (e.g. very basic personal and family information, shopping, local area, employment). I can catch the main point in short, clear, simple messages and announcements.
	<b>Reading</b>	I can understand familiar names, words and very simple sentences, for example on notices and posters or in catalogues.	I can read very short, simple texts. I can find specific, predictable information in simple everyday material such as advertisements, prospectuses, menus and timetables and I can understand short simple personal letters.
S P E A K I N G	<b>Spoken interaction</b>	I can interact in a simple way provided the other person is prepared to repeat or rephrase things at a slower rate of speech and help me formulate what I'm trying to say. I can ask and answer simple questions in areas of immediate need or on very familiar topics.	I can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar topics and activities. I can handle very short social exchanges, even though I can't usually understand enough to keep the conversation going myself.
	<b>Spoken production</b>	I can use simple phrases and sentences to describe where I live and people I know.	I can use a series of phrases and sentences to describe in simple terms my family and other people, living conditions, my educational background and my present or most recent job.
W R I T I N G	<b>Writing</b>	I can write a short, simple postcard, for example sending holiday greetings. I can fill in forms with personal details, for example entering my name, nationality and address on a hotel registration form.	I can write short, simple notes and messages relating to matters in areas of immediate needs. I can write a very simple personal letter, for example thanking someone for something.

# APPENDIX

		B1	B2
U N D E R S T A N D I N G	<b>Listening</b>	I can understand the main points of clear standard speech on familiar matters regularly encountered in work, school, leisure, etc. I can understand the main point of many radio or TV programmes on current affairs or topics of personal or professional interest when the delivery is relatively slow and clear.	I can understand extended speech and lectures and follow even complex lines of argument provided the topic is reasonably familiar. I can understand most TV news and current affairs programmes. I can understand the majority of films in standard dialect
	<b>Reading</b>	I can understand texts that consist mainly of high frequency everyday or job – related language. I can understand the description of events, feelings and wishes in personal letters.	I can read articles and reports concerned with contemporary problems in which the writers adopt particular attitudes or viewpoints. I can understand contemporary literary prose.
S P E A K I N G	<b>Spoken interaction</b>	I can deal with most situations likely to arise whilst travelling in an area where the language is spoken. I can enter unprepared into conversation on topics that are familiar, of personal interest or pertinent to everyday life (e.g. family, hobbies, work, travel and current events).	I can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible. I can take an active part in discussion in familiar contexts, accounting for and sustaining my views.
	<b>Spoken production</b>	I can connect phrases in a simple way in order to describe experiences and events, my dreams, hopes and ambitions. I can briefly give reasons and explanations for opinions and plans. I can narrate a story or relate the plot of a book or film and describe my reactions.	I can present clear, detailed descriptions on a wide range of subjects related to my field of interest. I can explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
W R I T I N G	<b>Writing</b>	I can write simple connected text on topics which are familiar or of personal interest. I can write personal letters describing experiences and impressions.	I can write clear, detailed text on a wide range of subjects related to my interests. I can write an essay or report, passing on information or giving reasons in support of or against a particular point of view. I can write letters highlighting the personal significance of events and experiences.

		C1	C2
U N D E R S T A N D I N G	<b>Listening</b>	I can understand extended speech even when it is not clearly structured and when relationships are only implied and not signalled explicitly. I can understand television programmes and films without too much effort.	I have no difficulty in understanding any kind of spoken language, whether live or broadcast, even when delivered at fast native speed, provided I have some time to get familiar with the accent.
	<b>Reading</b>	I can understand long and complex factual and literary texts, appreciating distinctions of style. I can understand specialised articles and longer technical instructions, even when they do not relate to my field.	I can read with ease virtually all forms of the written language, including abstract, structurally or linguistically complex texts such as manuals, specialised articles and literary works.
S P E A K I N G	<b>Spoken interaction</b>	I can express myself fluently and spontaneously without much obvious searching for expressions. I can use language flexibly and effectively for social and professional purposes. I can formulate ideas and opinions with precision and relate my contribution skilfully to those of other speakers.	I can take part effortlessly in any conversation or discussion and have a good familiarity with idiomatic expressions and colloquialisms. I can express myself fluently and convey finer shades of meaning precisely. If I do have a problem I can backtrack and restructure around the difficulty so smoothly that other people are hardly aware of it.
	<b>Spoken production</b>	I can present clear, detailed descriptions of complex subjects integrating sub-themes, developing particular points and rounding off with an appropriate conclusion.	I can present a clear, smoothly-flowing description or argument in a style appropriate to the context and with an effective logical structure which helps the recipient to notice and remember significant points.
W R I T I N G	<b>Writing</b>	I can express myself in clear, well-structured text, expressing points of view at some length. I can write about complex subjects in a letter, an essay or a report, underlining what I consider to be the salient issues. I can select style appropriate to the reader in mind.	I can write clear, smoothly-flowing text in an appropriate style. I can write complex letters, reports or articles which present a case with an effective logical structure which helps the recipient to notice and remember significant points. I can write summaries and reviews of professional or literary works.

## APPENDIX 2

### - VOCABULARY FOR EXPRESSING TRENDS

Nouns and/or verbs			
fall	decline	go down	decrease
deteriorate	hit a low	bottom out	slip back
trough	slump	plunge	plummet
rise	go up	recover	increase
gain	grow	improve	jump
reach a peak	level off	even out	hold firm
remain stable	soar	rocket	take off

Adjectives and adverbs			
steady/steadily	gradual/gradually	consistent/ consistently	slight/ slightly
slow/slowly	sharp/sharply	quick/quickly	sudden/suddenly
significant/ significantly	substantial/ substantially	considerable/ considerably	noticeable/ noticeably
sudden/suddenly	insignificant/ insignificantly	dramatic/ dramatically	unexpected/ unexpectedly

Rosenberg 2001

## APPENDIX 3

### - LESSON PLAN TEMPLATE

Subject:	
Title of the lesson plan:	
Course / Level:	
L2 level students / teacher:	
1. Learning outcomes	
2. Subject Content	
3. Language Content /Communication	
Vocabulary /Structures	
Discourse type	
Language skills	
4. Contextual (cultural) element	
5. Cognitive (thinking) processes	
6. Activities	
7. Methodology	
Organization and class distribution / timing	
Resources / Materials	
8. Evaluation Criteria	
9. Evaluation Instruments	

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