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HOW COMPLEX IS CLIL VOCABULARY IN THE EYES OF A SUBJECT TEACHER?

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Abstract: While the perspective to CLIL is broadening in the world (esp. Europe), such teaching is still a relatively fresh and fragmentary experience in Lithuania. Not surprisingly, it raises a number of questions in educational circles and deserves thorough consideration and deep analysis with respect to its application in different school levels in this country. An inexperienced eye may view CLIL as a way of mere teaching a subject in a foreign language, while a more competent professional with a better cultivated judgment will certainly highlight the dual nature of CLIL instruction.

The ultimate aim of this article is to overview fundamental ingredients of vocabulary teaching in CLIL and to investigate how they compare with the observations and concerns that subject teachers articulated during the two year CLIL methodology training programme in Vilnius University. In order to achieve the aim, extensive discussions, monitoring, lesson plan analysis and informal peer feedback sessions were carried out, which confirmed the pivotal role of vocabulary in CLIL teaching and the apparent necessity to sharpen CLIL teachers' methodological skills consistently.

Not surprisingly, the teachers in question readily recognise the dominant role of subject-specific vocabulary, yet they feel challenged by the obligation to deal with high frequency academic vocabulary and the language for metacognitive skills as integral and thus indespensible parts of their work. With content as their primary goal, subject teachers recognise their dominant role in CLIL yet they feel less convinced if their students have gained necessary subject knowledge, skills and experiences sufficiently and whether learners' attitudes to certain content matters have been adopted favourably and appropriately. This concern is easily predictable because CLIL students are duly expected to consistently produce same learning outcomes in the subject as taught in L1 and be not deficient of critical thinking skills.

Over the observed period, the CLIL subject teachers intensely practised how to scaffold language and showed their considerably varied experiences in doing this, as they were challenged by various language prerequisites or the complexity of language for scaffolding, thus they approached CALP (cognitive academic language proficiency) component inconsistently. Likewise, CLIL-specific metacognitive skills were also marked as an immediate need.

The training programme proved that in order for CLIL subject teachers to shape their conceptual understanding about CLIL it is imperative to engage them in ongoing activities that would expose them to text analysis tasks, involve in materials development and contain peer feedback, which would eventually enable them to see content through the eyes of a language professional. Moreover, CLIL materials design projects could favourably instigate the development of comprehensive CLIL modules rather than separate CLIL-like lessons. In other words, to qualify as a competent CLIL subject teacher, systematic and focused professional development activities should take place.

Keywords: CLIL, subject teacher, scaffolding, academic vocabulary, CALP, metacognitive skills, collaborative work

INTRODUCTION

Since in CLIL the target language becomes the vehicular language and an indispensable tool for the teaching of other subjects, different language aspects (including vocabulary) are included in such an integrated subject programme. In case CLIL teaching is conducted by a subject teacher, a primary duty of this educator is to organize complementary language instruction around non-linguistic topics and subject matters. In doing so, a CLIL subject teacher applies methods attempting to reproduce the way in which their subject is imparted and learnt in the native language.

Determining which language is necessary for, of and through learning a subject matter is certainly a very ambitious and challenging task for CLIL subject teachers. Students, esp. in senior grades, typically come to CLIL knowing many commonly used words and they are aware of the simplest forms and/or the most frequently used meanings of multi-meaning words. In the CLIL environment, however, learners obviously lack content area vocabulary as well as all-purpose academic words for categorizing (e.g. vehicle, utensil, process), thinking (e.g. tell hypothesis, evidence, criterion), defining abstract notions and hard to picture terms, and words for communication (e.g. emphasize, affirm, negotiate) or expressing relationships (e.g. dominate, correspond, locate).

K. Kelly (2009) rightfully observes that a major CLIL challenge is that while under normal circumstances in L1 learners can be well-acquainted with the subject matter, in the CLIL situation they may not have the foreign language to capably function (listen, read, talk and write) in the topic. He argues that students' obstacles include "a rich range of text genre and structure which learners whatever their L2 competence may need guidance to access and support to produce when asked". His observations quite strongly suggest that structured language assistance is essential since text genres and structures in a given subject cannot be "transferable across borders" and students' knowledge of L2 culture differs from knowledge of their 'mother' language. The author concludes that "the learning dimensions need to be broken down into more detail" and they should be analyzed thoroughly in order to provide adequate language support.

Regarding the amount of vocabulary a CLIL learner should know, S. Thornbury (2002, p. 22) suggests that teachers should carefully consider both productive and receptive knowledge and he insists on teaching spelling and pronunciation, derivative forms and different shades of meaning. The author also advises to recognise students' "degree of control over word knowledge" which helps to determine whether the word is readily accessible or must be prompted. In other words, he observes that "the task of acquiring a functional lexicon is more complicated than simply memorizing words from lists".

This paper aims to argue that CLIL subject teachers should avoid perceiving vocabulary in L2 as pure memorizing of terminology, and instead they must look into ways how to help students acquire subject vocabulary alongside cognitive academic vocabulary and language for metacognitive needs. To achieve this aim, 1) means of scaffolding in three dominant CLIL vocabulary areas – subject-specific, academic and language for thinking - will be overviewed, and 2) areas of uncertainty that CLIL subject teachers face will be examined, and 3) possible ways to allay subject teachers' anxiety will be offered.

To address these objectives, the paper makes descriptive comparisons between key insights that CLIL scholars yield and unnerving experiences that subject practitioners (as beginners in CLIL) undergo due to unduly solitary nature of their venture. Observations will be based on the experiences collected during the CLIL subject teacher training project run by the Institute of Foreign Languages (IFL) of Vilnius University from 2011 to 2013. The programme engaged more than 50 teachers from a wide spectrum of subject areas who were ready to advance their language and CLIL methodology skills.

To quote from The CLIL Teacher's Competences Grid (Bertaux *et al* 2010), CLIL teachers should be able to "identify words, terms, idioms and discourse structures that are new for the students in text, audio or audio-visual materials". To compare, observable evidence from the project discloses that the ample scope of L2 is a truly demanding calling for CLIL subject teachers who themselves have not necessarily had any prior formal linguistic background. Moreover, first-hand discussions with the participants raise a compelling argument that CLIL training is required to undertake multiple and cross-sector development activities.

SCAFFOLDING SUBJECT-SPECIFIC VOCABULARY TO ACCESS NEW KNOWLEDGE

Despite being the foundation of language and a paramount determinant of how well CLIL works in practice, lexis is sometimes mistakenly viewed as just terminology and learning subject vocabulary as not necessarily more difficult in L2. Presumably, much content-based vocabulary overlaps with general frequency lists, yet scaffolding it is an absolute necessity due to the dual nature of CLIL and because general English words can have specific subject meanings.

The converse of the common belief is well grounded by CLIL scholars who agree that to maintain notable student-talk domination in a subject matter and dialogic discourse which would resemble interaction in L1, generous and detailed scaffolding is imperative as it helps learners form ideas and learn language. According to O. Lee (Lee *et al*, 2003, p. 22), linguistic scaffolding is "teacher use of language that matches students' levels of communicative competence in length, complexity, and abstraction, to ideally communicate at and slightly above students' level of communicative competence". This viewpoint is endorsed by P. Bertaux (Bertaux *et al* 2010) who suggests that a teacher is supposed to assist students in "navigating and learning new words, terms, idioms and discourse structures".

As stated in the CLIL Teacher's Competences Grid (Bertaux *et al* 2010), teachers are expected to apply a wide range of means for scaffolding language in order "to produce high quality discourse". To achieve this, it proves meaningful to spend considerable time training CLIL subject teachers how to state both subject and language goals in a class, break down learning sequences into steps and practise vocabulary at different stages of a lesson, which would ensure that students are involved in using language throughout for content ends.

As expected, the VU CLIL project demonstrated that despite the universally declared importance of temporary language scaffolding (alongside temporary content support) the undertaking demands a considerable and conscious

teacher effort. First, the participants collectively recognized that learning should be built on what learners already know in the language in order to achieve the next step in understanding the subject content. Then they were guided to apply the Common European Framework for languages (CEFR) and to discuss language proficiency bands with peer language specialists in order to verify specific language to be acquired at certain levels. Nonetheless, some inferior vocabulary instruction was reported as the teachers were inclined to restrict scaffolding to subject terminology only or they assumed that students knew the required subject vocabulary already. To raise awareness of language continuity, we trained the subject teachers to identify language prerequisites for concrete lessons, which would enable them to more productively and meaningfully collate and combine information about language needs of their learners.

Further defiance relates to the complexity of language for scaffolding, which is especially apparent among CLIL subject teachers. As noted in CEFR (Council of Europe 2002, p. 165), particularly complex language "consumes attentional resources that might otherwise be available for dealing with content". Fearing to compromise time allocated for content matters, our project participants sometimes singled out separate key words for scaffolding and they did not consistently attempt to work at the level of phrases and collocations, thus ignoring to view own CLIL instruction in a big picture and consider long-term outcomes. To a certain extent, such neglect proved that limited and sporadic instances of CLIL module analysis or application fail in mastering particular educator skills as CLIL subject teachers do not distinctly comprehend which language functions and notions their students know already or need to practice, retain and extend.

It is common knowledge that among numerous aspects that one can scaffold, specialist core vocabulary comes high on the list. To guarantee its acquisition, in the project the subject teachers were recurrently invited to include tasks where cognate vocabulary is retained and adapted through word families, word formation, collocations (esp. verb-based), synonyms and antonyms, process words, definitions (word cards), words in actual context-based meaning, and lexical fields (e.g. word banks for concept mapping / phrase-based word clouds). Well aware of the necessity to develop learning skills by categorizing words (e.g. verbs, nouns, semantically odd-one outs, opposites, synonyms, same endings, word stress, number of syllables), CLIL subject teachers explicitly reported that scaffolding helped their students to create expectations and activate prior knowledge or experience. And still such advanced practice with word families and collocations was not facilitated systematically as the teachers themselves could not always perform with expected fluency, appropriateness and accuracy.

To come forward with direct support strategies, it is required to explore different visual means. By noting down key concepts/terms on walls, students check language items any time or the latter serve as clues, which reports on more student-dominated exploratory work (and less teacher-run presentational talk) in class. In the project, the teachers acknowledged the importance of word walls and were easily convinced by the necessity to approach visual aids consistently and cultivate them methodologically as the latter could take the burden off the teacher and contribute to the growth of a more self-contained student.

Another important CLIL provision is limited and judicious use of L1 and translation. Reference to R. Gairns (Gairns *et al* 2003, p. 17) reveals that teachers need to distinguish between concrete and abstract terms and consider the latter for translation instead of useless explanations. By virtue of complexity, abstract items deserve credible explanations which can involve bilingual dictionaries. This position is endorsed in The CLIL Teacher's Competences Grid (Bertaux, *et al* 2010) where a teacher is expected to "navigate the concepts of code-switching and translanguaging". In most cases in VU project, inconsistent exercise of scaffolding mainly occurred due to a not yet fully developed teacher language competence, which certainly did not help to overcome any conceptual problems. Not surprisingly, the teachers were sometimes observed to give priority to translation of key concepts to L1 instead of applying higher cognitive methods like categorizing vocabulary items.

An increased consideration regarding subject-specific vocabulary is the use of extended texts. Since CLIL learners have to learn "a set of low-frequency, high-precision words" (Clegg 2009) which belong to subjects, they have to be exposed to model texts to introduce language through actual learning context, which eventually eases understanding of complex language structures. After it is meaningful to involve students in underlining key phrases (esp. verb-based ones), which would later help in brainstorming topic-related language, writing own definitions, organizing vocabulary in categories, developing word-learning strategies (morphology, inferring from context), etc. In the project, this need raised the issue of choosing appropriate materials for the teachers extensively experimented with different verbal and written text formats and struggled with some degree of adaptation to match students' linguistic competence. They asserted that highlighting key words, inserting prompt questions and producing texts in learner-friendly sentence structures (thus avoiding redundant complex vocabulary) eventually helped to build in necessary progression into language and content tasks. Despite this, an observed challenge was teacher inexperience to

coherently and economically select subject vocabulary for practice, which resulted in either insufficient or too wide or mono-subject language banks which did not necessarily transfer across topics.

To assist the CLIL subject teachers, we missioned them to analyze written or oral texts drawn from the subject field for content-obligatory and content-compatible language. The teachers were invited to build corpora of the type of language by adopting a simple corpus-based approach. In theory, subject teachers agreed that as much as corpus building seems time-consuming at the start, later the lists could identify key conceptual terms that form the bedrock of the subject matter. But in practice, they approached the task as grandiose and strenuous. The teachers admitted lack of skills how to deal with core vocabulary systematically in two categories, i.e. general English for communicative activity, regardless of subject matter, and subject-specific uses of words that occur in general English.

A third CLIL dimension is regular recycle of_vocabulary and content to ensure continuity and further advancement. As S. Thornbury (Thornbury 2002, p. 15) perceptively states, "receptive knowledge [of subject vocabulary] exceeds productive knowledge and generally – but not always precedes it. That is, we understand more words that we utter, and we usually understand them *before* we are capable of uttering them". L. K. Sylven (2006) adds that the amount of exposure to the target language is the most influential factor in vocabulary acquisition and in communicative competence. Hence, it may be inferred that teachers should support learner-centered approach in class and activate both new language and content by recycling from previous units.

Doubtless, some students need more scaffolding than others, and yet once tailored assistance is provided, learners take over responsibility. If students get adequate opportunities to engage in practical activities to experience CLIL, they can demonstrate their productive ability to use the words, i.e. write or say, not merely recognize when they see or hear these words.

Equally important, students should be encouraged to initiate new language acquisition if the task offers this opportunity (i.e. language through learning). Teachers are guided to reward experimenting, trying, taking risk instead of producing a perfect by content answer. This kind of exercise requires retrieval of the words learnt earlier, which reinforces memory and strengthens learning. To refer to S. Thornbury (Thornbury 2002, p. 148), guessing from written or verbal context in L2 is a meaningful and transferable skill to acquire since each individual habitually applies it in L1.

In the CLIL project in VU, the subject teachers were able to report favorable instances of language recycling to scaffold new content. Despite this, possibly fearing detrimental effects on subject-content proficiency some educators chose to provide scaffolding of new language through familiar content, i.e. they re-taught already learned material in L2, which was argued as being not exactly CLIL. Also, cases could be observed when teachers under- or overrated students' ability to guess words in the context without glossing them. Therefore, CLIL subject teacher level of self-confidence needed to be further researched empirically in order to propose a focused and constructive support system for them.

ACADEMIC VOCABULARY TO PROCESS INPUT AND PRODUCE A RESPONSE

R. Gairns & (Gairns et al 2003, p. 60) found that student's perception regarding the usefulness of vocabulary input determines the degree of their involvement in learning and "it is not therefore the question of lexical supremacy over grammar but that relevant lexical input is likely to contribute to the effectiveness of the overall programme".

The grounds seems to be strong that the extent of cognitive load on a learner correlates with their level of familiarity with task schemata (scripts and frames) as, according to CEFL (Council of Europe 2002, p. 160), "the availability to the learner of unconscious or 'routinised' schemata can free the learner to deal with other aspects of performance".

Reference to D. Coyle (Coyle et al 2010, p. 59) reveals that to function in the educational environment learners must exploit "not only content-obligatory language but also content-compatible language" to function successfully in the subject.

With respect to CLIL in VU, the correlation between the two aspects of vocabulary became even more evident as the the students were reported to have been triggered by insufficient subject-specific word knowledge and likewise academic vocabulary, as the latter could not just be picked up.

In fact, to ensure effective students' engagement, CLIL subject teachers were thoroughly instructed to extend knowledge of high frequency academic words in various contexts and ensure recurrent exposures. Of vital importance was provided to component parts of academic language, ensuring effective practice of connectives (e.g. to report and narrate, give examples, express cause and effect, orient in the visual) and functional language (e.g. to describe a process, developments, operations, positions, weight, structures). Moreover, register, style, tone, and discourse structures (active v passive) were considered as well.

Since the scope of academic language is very broad, it should be approached gradually. Presumably, in the process of verbalizing concepts or thoughts CLIL learners have to put in more effort in finding adequate expressions, which obviously slows down the acquisition. Understandably, once backtracking and chunking is done appropriately, knowledge of the most high-incidence academic words in English would significantly boost student's comprehension level of school-based reading material. Therefore, S.Thornbury (Thornbury 2002, p.24) advocates distributing high-utility academic word lists across a period of time rather than mass them together in a single block. In our project, CLIL subject teachers were encouraged to refer to the Academic Word List developed by A. Coxhead (2000), however they felt not confident enough or even questioned the viability of the list.

Furthermore, it must be accentuated that CLIL teachers (esp. at the start of their career) have to exercise enough patience and assertiveness and systematically test learners use the academic language. The challenge mounts because initially students develop basic interpersonal communicative skills (BICS), after which they appear fully proficient and fluent with less effort. This false efficiency later may inhibit the learners from leaving the comfort zone and acquiring a grasp of CALP (cognitive academic language proficiency). Such deceptive nature of student language attainment caused obvious constraints to our CLIL subject teachers in our project who sometimes questioned own academic language skills and therefore were not able or even willing to endorse a more academic discourse in class.

J.Clegg (2009*)* provides supporting evidence by revealing that teaching CALP skills is a chief constituent in CLIL, but even so it impedes a CLIL subject teacher's work. Not only that the range of CALP skills is wide and subject teachers are not fully aware of them, in CLIL thinking skills must be facilitated in L2-medium, which is not customarily done in L1 in either language of subject classes. J. Clegg recognizes that "general academic vocabulary often falls between two stools: neither subject teachers nor language teachers teach it". Despite the complexity of the situation, J. Clegg asserts that explicit language support qualifies an effective CLIL class, which properly merges subject and content-based language learning.

It was important to observe that CLIL subject teachers willingly completed cognitive tasks, e.g. transforming a connected text into a set of bullet points or a table of information or diagram (or vice versa). They admitted that such undertakings require mental effort and are possible only if the learner has both the vocabulary (though language is used not to the same extent and in the same way) and experience with transactional language. Transactional language ('signposts') to connect discourse and help to deduce meaning were seen to be of great significance. Their experience mirrored R. Gairns (Gairns *et al* 2003, p. 70-71) viewpoint that "unless they [signposts] are understood, contextual guesswork may become almost impossible". Thus, it was principally agreed that the more cognitively demanding operations (identifying, selecting, matching, sorting, ranking and sequencing) the learner does in a CLIL class the better.

To contend with the obstacles, in general it is necessary to present opportunities for academic vocabulary learning, recycling and production opportunities in all CLIL lessons. Once a learner repeatedly uses sets of words/phrases to perform low and high level cognition tasks, this habitual activity will help them advance their cognitive skills in the subject matter as well. In other words, a CLIL teacher should not ask students to learn phrases in L2 but rather ask them 'Describe, find parallels, compare,' etc. in order to avoid being an authoritarian teacher who prescribes what to think. In our case, it was not easy to monitor the development of such a routinized schemata as the CLIL subject teachers analyzed separate classes instead of full CLIL units, thus failing to sufficiently observe the necessity to regularly practise CALP in class. As a result, it was advised to consult language peer teachers and possibly coordinate practice of CALP language in both programmes.

LANGUAGE TO DEVELOP METACOGNITIVE SKILLS

D. Coyle (Coyle *et al* 2010, p.29-30) states that together with an ever growing knowledge base in the subject (as prescribed by the curriculum) learners need to develop an ability to think creatively and solve problems effectively, i.e. "they need to know how to think, to reason, to make informed choices and respond creatively to challenges and opportunities".

In his research J. Clegg (2009) comes to a conclusion that CLIL-specific metacognitive skills are multi-fold and comprise language for interaction with the teacher and other students, and they contain such competences as organizing study vocabulary, building vocabulary base independently, preparing texts for analysis, and processing written tasks more thoroughly than in L1.

According to D. Jarrett (1999), as cited by D. Coyle (2010), learners need to have skills to ask for repetition and meaning, to tell others what and how to do something, to collate information, to perform in discussions and provide feedback, to report findings or a result, to share opinions and reasons, and to review or conclude.

This line of observation is continued by K. Bentley (Bentle 2011, p.64) who rightly points out a wide range of functional language and well developed questioning skills as key factors for teachers to actively engage students, e.g. activate prior knowledge, present new ideas, encourage learners to collaborate, develop learners' understanding, find out difficulties with subject content, help learners develop thinking skills and make links, encourage creative talk, monitor learning, and respond to learning needs.

By virtue of having more loosely structured interaction patterns, CLIL lessons offer pertinent learning opportunities for students to develop command of interactive skills in the target language more instinctively. Students may venture to express themselves more explicitly and fear linguistic mistakes and errors less, though sometimes their utterances could be minimal in length and complexity. This relative comfort could be doubled or shared with CLIL subject teachers who are also learners of the target language. Thus, various aspects of interactive talk in a CLIL subject teacher-led class, such as teacher questions, feedback, student answers and presentations, can be qualitatively different yet extremely important.

Further, as predominantly oral events constructed of "face-to-face encounters designed to make knowledge accessible to the students by interacting with a teacher and with peers" (Danton-Puffer 2008), CLIL classes contain continuous sequences of teacher questions and students responses. Hence, knowledge is not transmitted but jointly constructed in a common discourse space (Mercer 1995). With this justification, classroom talk should be treated as a central source of learners' linguistic and intellectual experience at school, and CLIL subject teachers' trepidation could be lowered if they received sufficient training on how to facilitate interaction episodes.

To develop on this, in our project CLIL subject teachers needed to clearly understand that classroom language (i.e. language for learning) as an essential tool to provide teacher's instruction to whole class or individual students needs to vary depending on learners' cognitive engagement and expected level of thinking skills. This became even more vital and challenging in a CLIL subject class where teachers needed to learn to formulate clear instructions so that the questions they asked were at the appropriate level and that these questions related to the cognitive demands.

In addition, metacognitive skills such as 'learning to learn' should be developed through group work, problem solving and student questioning since "individual cognition emerges from social interaction" (Vygotsky 1978). In properly organized group work where students make use of each other's strengths and compensate for weaknesses, it is crucial to operate collaboratively through verbal means. In such a collaborative environment learners can self-check or be response partners who provide constructive feedback to their peers about their work. In reality, the level of comfort as related to group work and other collaborative teaching methods varied among CLIL subject teachers in our project.

Our CLIL subject teachers tended to underperform in their readiness and confidence to develop metacognitive skills in L2. The educators' target language inadequacy sometimes coupled with students' lack of vocabulary to ask about items and concepts, i.e. ask relevant questions, obtain further information and satisfy curiosity. To cope with the obvious challenge, in separate cases the teachers reported to have approached foreign language counterparts for assistance, which as a result enabled to perform more confidently in a CLIL class.

Consequently, the CLIL subject teachers admitted that they would certainly need to engage students in more analysis on how to talk about reading and comprehension strategies, seeking additional information and giving and asking for assistance, etc. as well as what kinds of questions they ask in order to go beyond display questions and present students with challenging problem-solving, hypothesizing, analyzing and evaluation tasks. If cross-subject collaboration is appropriately promoted and subject and language professionals work together to draft CLIL lesson plans or even peer observe classes, it would definitely boost CLIL subject teachers' confidence in own skills.

CONCLUSIONS

This article has shown that vocabulary in CLIL should be viewed playing a paramount role in the development of an integrated approach to subject education.

1. The internal grounds of subject teachers to integrate CLIL methodology into their programme and their sustained calling to comprehend how to develop and implement CLIL teaching legitimately can show that more schools at different levels are ready to recognise this advanced educational method, which ultimately suggest that CLIL teaching and teacher professional development should be institutionalized and standardized.

2. The article affirms foremost CLIL vocabulary features and it steers that CLIL trainers take a more text-based materials design approach in training subject teachers for CLIL. Such a consideration stems from the fact that the teachers in question readily recognise the dominant role of subject-specific vocabulary yet feel much more challenged by the commitment to treat high frequency academic vocabulary and the language for metacognitive skills as integral and thus indespensible parts of their work. To help subject teachers master CLIL methodology, long-term professional development activities are conclusive.

3. Inconsistency in approach to language scaffolding proves an awkward gap in CLIL subject teachers' understanding about the scope of language to be acquired for CLIL purposes. Thus, systematic and joint participation of language and subject teachers in professional development initiatives could authenticate the claim that CLIL is their joint enterprise and it would warrant a great deal of cross-subject collaboration.
4. Alongside formal training, there are extremely good reasons for informal cross-subject teacher collaboration so that CLIL subject teachers work in teams with language professionals in their schools, where the latter act as 'critical friends' to evaluate the language components of the designed / adapted material. The language scaffolding challenges described in the article are merely exemplars of the many linguistic demands CLIL subject teachers face. By developing trustworthy teams with their language peers, CLIL subject teachers should be able to systematically address the vocabulary problems that many learners face.
5. In suggesting a corpus-informed approach to course design in the environment with abundant resources, it is further attempted to demonstrate how learning, and particularly CLIL vocabulary learning, can be driven by data rather than intuition. Such corpora could definitely assist CLIL subject teachers much more thoroughly than a good monolingual dictionary or a thesaurus.
6. Although not discussed here, in a CLIL context the principles of action research naturally lead to a situation whereby both teachers and learners become self-directed researchers in the language teaching and learning process, identifying for themselves the language they need to take their studies further, and thereby taking ownership of the learning process. Thus it would be beneficial to develop research projects that analyze the effects of such dual learning.

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