Student voices on CLIL.

Suggestions for improving compulsory CLIL education in Austrian technical colleges (HTL).

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This study

- analyzes students' opinions on CLIL education in technical subjects in an Austrian upper secondary college of craft and technology (HTL[2]).
- highlights strengths and weaknesses of CLIL education as perceived by students.
- shows general student satisfaction but emphasizes that the most significant aspect in need of improvement appears to be teachers' language proficiency in the medium of instruction.
- provides valuable implications and suggestions for (aspiring) teachers in their endeavor to tailor successful CLIL lessons, especially for students in colleges of technology.

1. Rationale

Content and language integrated learning (CLIL) is an educational approach that allows for a fusion of the teaching and learning of both an additional language and content (Mehisto, Marsh, & Frigols, 2008). Since the early 1990s, a variety of CLIL programs, spanning from short term to long term and low to high intensity, have been firmly implemented in the diverse landscape of European schools (Dalton-Puffer, Nikula, & Smit, 2010). Since its establishment, CLIL has been praised by numerous stakeholders for its effectiveness and impact on students' elevated language and content knowledge as it has not only significantly supported "Europe's desire to reinforce its levels of multilingualism" (Pérez Cañado, 2016, p.15), but also its wish for the establishment of "greater inclusion and economic strength" within Europe (Coyle, Hood, & Marsh, 2010, p. 8; see also Dalton-Puffer, Nikula, & Smit, 2010; Lasagabaster & Doiz, 2016). Nevertheless, it is vital to highlight that apart from especially being praised for its effectiveness, CLIL education has also been criticized for supposedly (1) increasing teaching time of foreign language (FL) teaching at the expense of content subjects, (2) forcing content teachers to use a specific target language (in which they usually do not hold a teaching degree), (3) decreasing comprehension in content subjects, and (4) focusing on spoken interaction and thus neglecting

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[2] HTL = Höhere Technische Lehranstalt: upper secondary college of craft and technology, which is a vocational school with a focus on technology; sometimes also translated as technical college.

crucial skills such as writing and reading (Ioannou-Georgiou, 2012; Lasagabaster & Doiz, 2016).

The most promising prospect of CLIL methodology appears to be its purported ability to equip learners with the necessary skills and knowledge to efficiently assert themselves in an increasingly globalized, interconnected and hence, linguistically diverse economic market (Coyle, Hood, & Marsh, 2010; Dalton-Puffer & Smit, 2007). In fact, modern world markets progressively seek workforces that have acquired not only theoretical and practical expertise in various subjects throughout their education, but also individuals whose language proficiency in at least one other language than their first (i.e. usually English) suits the demands posed upon them in multilingual settings ubiquitous in the contemporary world (cf. Coyle, 2007; European Commission, 2017).

The assumed benefits of CLIL methodology (briefly outlined above), as well as complementary research findings of a large pool of scholars offered sufficient justification to firmly anchor CLIL within Austrian HTLs in the hope that CLIL is capable of significantly contributing to a change long sought for – complementary content knowledge in another language than the students' L1, which is firmly believed to help them stand their ground in the international market they are bound to enter after graduating as engineers. The teaching of at least 72 hours of CLIL per year (across all subjects) has been compulsory since 2011 and has, since then, considerably altered this school type, as traditionally relatively little importance was ascribed to language education in this educational sphere (BMB, 2016; Dalton-Puffer et al., 2008). Now, students receive additional exposure to English (besides traditional EFL lessons) predominantly in combination with technical subjects, which is ultimately expected to better prepare them for successful future careers.

Since the contemporary worlds' demands upon learners are changing at a relatively fast pace, the effectiveness of CLIL in preparing students for their future occupations must rely heavily on regular re-negotiation, re-evaluation and adaption to suit the needs of its primary beneficiaries – the students. Unfortunately, these are usually the group of stakeholders whose voices are only marginally included in the ongoing discussion of optimization and development of CLIL practices[3].

The aspects discussed in this article are based on findings of the empirical research of my diploma thesis (see Döring, 2018), which – besides gathering students' opinions on CLIL education as experienced in an Austrian HTL – primarily sought to identify whether CLIL significantly improves students' listening skills in English. However, as student voices have been somewhat neglected in previous research, this article only discusses findings on students' individual perspectives, experiences and suggestions for improvement concerning CLIL. Based on these insights, a list of concrete implications for (aspiring) teachers will be extrapolated, which – although not to be viewed as an exhaustive list – may prove to be useful for their endeavor to optimize CLIL practice for both themselves and their learners.

[3] But cf. Fuchs (2015) who discusses findings on HTL students' attitude toward using an FL in CLIL as well as their interest in learning content through an FL.

2. Research questions

This article will focus on the following five research questions:

1. What are the general reasons of HTL students' demanding more/less CLIL education?
2. In comparison with traditional EFL lessons, are HTL students more motivated to use a foreign language within CLIL lessons?
3. What positive experiences appear to be most striking and relevant for students attending CLIL lessons in a technical subject?
4. Should HTL students receive a right to co-determine of the choice of technical topics taught through CLIL methodology?
5. If given the opportunity, what would HTL students change about current CLIL education in technical subjects?

3. Study description

3.1 Sampling and participants

The sample of this study was taken from three third-year classes (i.e. 11th grade) of an HTL (branch: information technology) and consists of a total of 36 students who had been experiencing CLIL with English as the medium of instruction over a period of two months at the time of the investigation. In an evaluation of the students' knowledge of CLIL before conducting the study, the learners stated that prior to the research period, they did not receive any form of CLIL education. The three classes were instructed by the same two IT teachers and were further split into subgroups to provide a more efficient and effective teaching and learning environment. With regard to the demographic profile of the students, the sample consists of 4 female and 32 male learners who, at the time of the sampling process, were 16 to 17 years old. Due to the rather small sample, the results of the present study should be treated with caution and – as stand-alone inquiry – can thus merely offer a limited insight (restricted to the school and classes under investigation) into students' perceptions of CLIL education in technical subjects.

3.2 Method, instrument and analytic procedure

The methodological approach used in this study allowed for gathering both qualitative and quantitative data. The questionnaire used as a data collection instrument contained both closed and open-ended items. Whereas the closed items had to be answered by ticking pre-defined options (featuring five- and three-point Likert scales), open-ended items gave students the freedom to state their individual viewpoint on subjectively perceived benefits and drawbacks of CLIL education as experienced within their educational context. In total, the questionnaire consists of eight closed and four open-ended questions, of which only the responses to three closed and two open-ended items will be analyzed in greater detail in this article[4]. For analysis purposes, SPSS was used and two different coding approaches were applied to both closed and open-ended questionnaire items. Whereas closed items received a numerical code (consistent with the options on the questionnaire), answers on open-ended

[4] Find the complete questionnaire in Döring (2018, chapter 9).

items had to be grouped into adequate categories, based on similarities identified among students' responses (Dörnyei, 2003; Brown, 2009). This coding scheme allowed for an analysis of frequency distributions as well as content. With regard to the data gathered through closed questionnaire items that feature a five-point Likert scale, it must be noted that the cumulative percentage of both ends will be utilized (i.e. strongly agree and agree, disagree and strongly disagree will be grouped together). This analytical approach was selected as it was anticipated that the students may be "reluctant to rate attributes at the extremes of the scale" which would have resulted in "central tendency bias" (Smith & Roodt, 2003, p. 64).

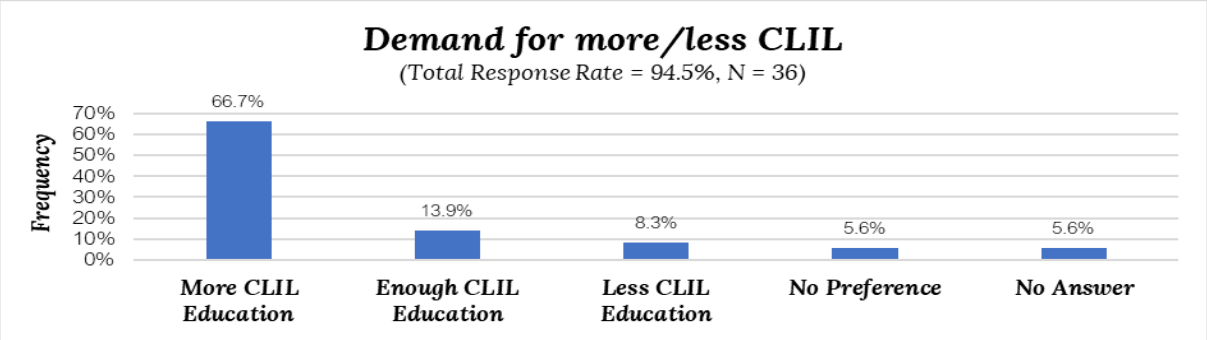
4. Findings

For reasons of intelligibility and structure, the following five subsections will consecutively deal with the research questions formulated in section 2. A summary of the most noteworthy implications and suggestions can subsequently be found in section 6 of this article.

4.1 Demand for more/less CLIL education

The findings illustrated in Diagram 1 indicate that the vast majority of the students (66.7%) demand more CLIL education, whereas merely 13.9% stated that they were offered enough CLIL lessons and 8.3% would rather receive less CLIL. The remaining participants (5.6% each) did not have a distinct preference concerning the amount of CLIL lessons provided or did not answer this question.

Diagram 1: Questionnaire Item No. 11, "[…] I would like to receive more/less CLIL education in technical subjects".

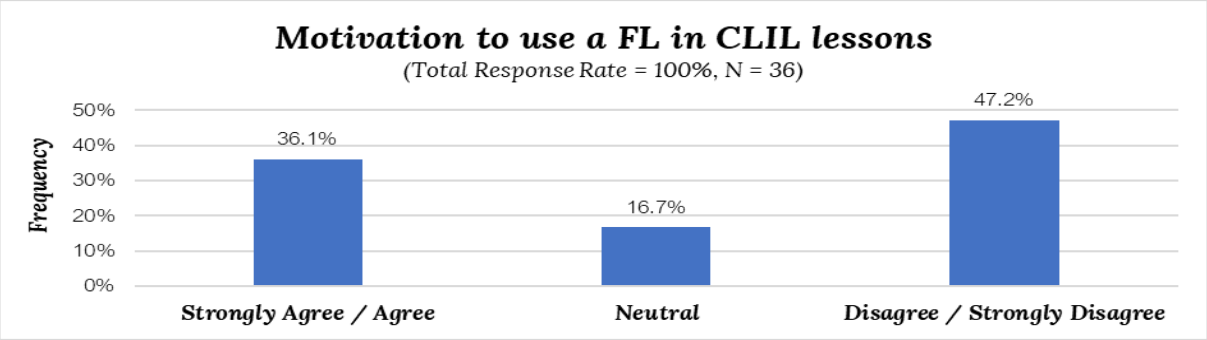


Overall, a variety of reasons concerning their demand for more CLIL education in technical subjects were stated by students. Students stated that CLIL education was not only perfectly suited to help them improve their language competence in English, but also prepared them for their future careers as engineers. Similar responses were gathered by Dalton-Puffer et al. (2008) and Dalton-Puffer et al. (2009), but also Lasagabaster (2011) and Ruiz de Zarobe (2013), as the students included in their respective studies reported not only that CLIL education offered them additional exposure to a FL, but further equipped them with essential content-specific (foreign) language knowledge. This, in fact, appears to be a promising approach, since traditional EFL lessons usually work with general conversational topics, mostly unrelated to the specific technical fields in which these students are developing their professional expertise.

4.2 Motivation

As displayed in Diagram 2, students' responses regarding their motivation to use English in CLIL lessons as opposed to traditional EFL lessons are relatively evenly distributed among the cumulated options strongly agree/agree and disagree/strongly disagree, with 36.1% and 47.2% respectively. Due to this distribution, it can be stated that there appears to be a rather large gap between the students who are more motivated to use English during CLIL lessons and the students whose motivation to use a FL during CLIL lessons does not differ significantly from their motivation to use a FL in their traditional EFL lessons.

Diagram 2: Questionnaire Item No. 4, "I am more motivated to use a foreign language (e.g. English) in CLIL lessons than in traditional foreign language lessons".



Although the majority of students stated that they would welcome more CLIL education within technical subjects (cf. Diagram 1), their motivation to use a FL in CLIL lessons does not appear to be affected by their desire to receive more CLIL lessons (36.1 % as opposed to 47.2%). This seems somewhat dissonant from the students' recurring statement that CLIL education significantly boosted their motivation to learn and use a FL, as FL proficiency was perceived to be a valuable asset in the internationalized economic market of engineering they are likely to enter after graduation and points towards a divergence between general views on CLIL and concrete behavioral patterns. The results of this item also lie in contrast with research findings obtained by Lasagabaster (2011), Merisuo-Storm (2007), Seikkula-Leino (2007) and Dalton-Puffer et al. (2008), who claim that a "rather strong relationship between the CLIL approach and motivation" can be identified (Lasagabaster, 2011, p. 14). Partially in contrast to the reported research findings above, but similar to the research findings of this study is a study by Fuchs (2015), who compared groups of students who have experienced different amounts of CLIL lessons with regard to their motivation and attitude toward learning and using English within their content subject education. She found that although on the surface, all learners appeared to be more motivated to use and learn an FL, students who have only experienced CLIL modules were not as motivated as students who have attended a CLIL stream.

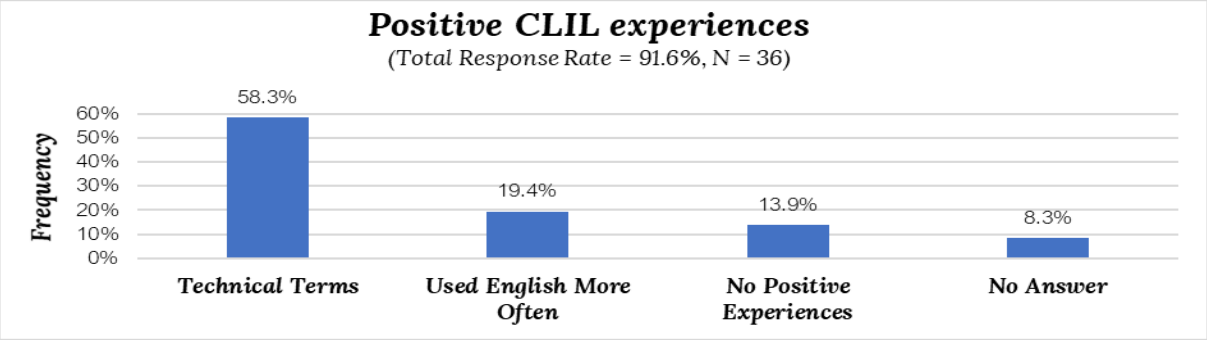
4.3 Positive CLIL experiences

With regard to positive experiences made by students during the two-month research period, as indicated in Diagram 3, the most prominent answer among students was that they enjoyed the opportunity to learn technical terminology in English, rather than in their L1 (58.3%). The students further mentioned that learning (semi-)technical vocabulary in English did not only facilitate the retention of technical terms, but also helped them to (re-)view the use of such in specialized texts, and to work independently with these lexical items. Similar responses have

been gathered by Dalton-Puffer et al. (2009), Merisuo-Storm (2007) and Lasagabaster (2008), who conclude that the relevance of technical and semi-technical terms also leads to higher levels of attention, positive experiences and increased motivation, and ultimately, the retention of key vocabulary essential within the field of engineering.

Moreover, 19.4% of the respondents noted that CLIL education provided them with greater possibilities to actively and purposefully use English during lessons, in comparison to their regular content subject education coupled with their traditional English classes, which is a fact that may be related to the rather safe environment (i.e. to freely use an FL without being penalized) found in CLIL lessons as well as the belief that mastering the use of English in a technical subject is a prerequisite for becoming a successful engineer (Lasagabaster, & Doiz, 2016; Merisuo-Storm, 2007). In contrast to the positive experiences highlighted by the majority, 13.9% of the participants stated that they did not make any significant positive experience during their CLIL lessons, and another 8.3% did not provide an answer.

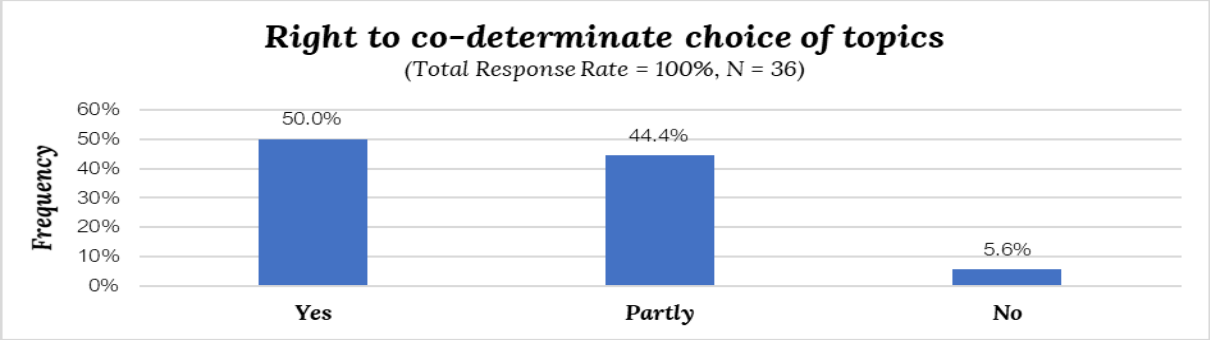
Diagram 3: Questionnaire Item No. 9, “I have made the following positive experiences (in terms of foreign language learning) during CLIL education in a technical subject”.



4.4 Right to co-determine choice of topics

Being granted the right of co-determination concerning the topics taught via CLIL is of unquestionable importance to students (cf. Diagram 4). In fact, 94.4% of the students would highly welcome the chance to fully or partially select topics taught through another language than their first (indicated by option “yes” and “partly”), whereas only 5.6% would reject this opportunity. This insight plays an important role within CLIL education, since including students’ preferences regarding the topics taught via an FL is likely to spark their motivation to use and learn an FL (see Lasagabaster & Doiz, 2016). However, as curricula of technical subjects are just as pre-determined as those of theoretical and general-educational subjects, the extent of students’ freedom of choice concerning specific subject areas being taught via CLIL remains an open debate between learners and teachers. Ultimately, a key factor that will likely determine the success of CLIL lessons may not only be found in students’ right to co-determine CLIL topics, but within an taking a more general view of students as “competent social actors”, which may realize direct student involvement. This approach appears to offer learners the opportunity to “contribute effectively to the quality of their education” and produce a more relevant teaching and learning atmosphere (Coyle, 2013, p. 245; see also Ruiz de Zarobe, 2013).

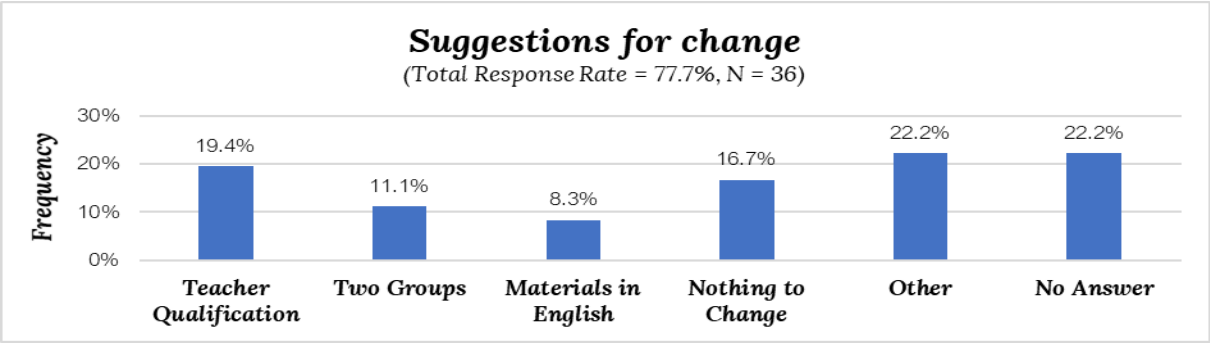
Diagram 4: Questionnaire Item No. 5, “Should students receive a right of co-determination in terms of the technical topics taught through CLIL lessons?”.



4.5 Suggestions for change

Upon grouping the responses concerning areas in need of improvement as well as negative experiences with CLIL, four major themes emerged (cf. Diagram 5).

Diagram 5: Questionnaire Item No. 12, “If I were able to, I would change the following in CLIL education”.



First, 19.4% of the students stated that their teachers’ language proficiency in the medium of instruction played a pivotal role in rendering CLIL education both rewarding and beneficial for all parties involved. In fact, this aspect has been thoroughly discussed by scholars, such as Dalton-Puffer et al. (2009), Aguilar and Rodríguez (2011), Ruiz de Zarobe (2013) or Ioannou-Georgiou (2012), who state that students require their CLIL teachers to have reached “a certain threshold proficiency level […] to operate effectively in the language of instruction” (Dalton-Puffer et al., 2009, p. 18). Thus, besides content-specific expertise, students want their CLIL teachers to have mastered certain language-specific skills (e.g. being able to determine learners’ language needs and competence, speaking intelligibly, etc), which are necessary to prepare and conduct CLIL lessons tailored to the students’ specific content and language skills.

Second, 11.1% of the pupils noted that they would appreciate being granted the freedom to choose whether they receive CLIL education, having suggested the solution of forming two groups within a class (i.e. one group receives CLIL education, while the other group continues their regular content subject education in their L1). This may lead to a more positive attitude toward CLIL as they would be able to actively choose to join the CLIL group. Nonetheless, as CLIL education has been firmly embedded in HTL curricula since 2011, with a minimum of 72 obligatory CLIL lessons conducted across all content subjects, their request to form two independent groups in each class is likely to be dismissed.

Third, 8.3% of the respondents stated that they would like to be offered more learning materials in English rather than German. This, as stated by the students, would positively contribute to their (foreign) language and content learning processes if those materials were retrieved from real-life contexts. Especially within CLIL education, in which students strive for an integrated learning of both content and language, the use and development of authentic content should receive serious consideration by CLIL teachers. However, it is vital to note that the language level of teaching materials used should not exceed the students' linguistic proficiency considerably, since successful language and content learning will only occur if materials chosen are appropriate for the students' cognitive and linguistic level. This, in turn, requires sufficient knowledge of the target language on behalf of CLIL teachers as they should, ideally, possess the ability to adapt materials for the specific linguistic needs of their students (cf. Coyle, Hood, & Marsh 2010).

Finally, a relatively large group of students (16.7%) stated that they were generally satisfied with the experiences they had made during the two months of CLIL instruction and thus did not produce any further suggestions that may improve CLIL education within Austrian HTLs.

Besides these four major themes, the category "Other" (22.2%) encapsulates further areas that some students considered to need improvement. For instance, respondents mentioned that they would like to be provided with more time to communicate in English during their CLIL lessons (8.3%), while another 8.3% would prefer the obligatory use of English during CLIL lessons. Furthermore, 2.8% of the surveyed would welcome the introduction and learning of a greater amount of technical terms and 2.8% of the students would approve of the implementation of language proficiency tests in order to be able to independently assess their (anticipated) improvement in the FL. Concerning the implementation of 'proficiency tests' in CLIL lessons, it appears to be inadvisable to implement such tests on a regular basis. Instead, teachers may provide alternative feedback on students' progress in both the FL and content subject by conducting check-ups, asking students to prepare presentations or facilitating group activities in which the FL should be used predominantly (concurrently, it is imperative that students are allowed to resort to their L1, as otherwise a complete breakdown of communication or misunderstanding of parts of the content subject is likely to occur, see Coyle, Hood, & Marsh, 2010,).

5. Limitations of the study

As is relatively natural for a study conducted in one specific school, some limitations concerning the generalizability and representativeness of the results are inevitable. Primarily, the limitations of this study are the rather small number of participants (i.e. 36 students in total), the sampling process (i.e. convenience sampling), the relatively short research timeframe of two months and central tendency bias within student responses.

As indicated by the limitations outlined above, it must be borne in mind that the results of this study are not automatically applicable to all Austrian HTLs or even other classes within the same school. Nonetheless, this study adds valuable insights to research on CLIL students' perceptions, which has long been neglected. Therefore, it is important to stress that more research concerning the perception and subjective opinion of students regarding CLIL education in Austrian HTLs is needed, which is ideally conducted in the form of longitudinal studies. This would certainly help to adapt and tailor CLIL to students' needs and thus render it a more fruitful and engaging teaching and learning methodology for all parties involved.

6. Summary – Implications for (aspiring) CLIL teachers

Despite the limitations indicated previously, numerous implications for (aspiring) CLIL teachers, especially those teaching in the field of technology, can be deduced from the outcomes of this study. The following implications are meant to facilitate the preparation and realization of student-centered CLIL practice in Austrian HTLs. However, they should not be understood as an exhaustive list or guideline as their primary purpose is to provide a glimpse into the wide range of options available to produce successful CLIL lessons.

Application Box

- Grant students partial involvement with regard to choice of topics and construct CLIL lessons that are directly related to and may resemble tasks of students' prospective careers. This will give them a sense of co-determination and valuing their voices will boost the students' motivation to actively participate.
- Increase the amount of CLIL lessons (per year and content subject) depending on the students' preferences. Bear in mind that the curricular guideline of 72 hours of obligatory CLIL lessons per year in Austrian HTLs are commonly spread across several content subjects and that exceeding this 'limit' in your subject does not constitute a violation of the guideline.
- Spark students' motivation by creating a safe environment in which they are praised for successful communication and task achievement, rather than penalized for language mistakes and partial inability to display content knowledge in a FL.
- Encourage students to exclusively use the target language (e.g. through group work, presentations, oral check-ups, roleplays, discussions, etc). Nonetheless, as communication impairment and misunderstandings of certain concepts and content may occur, allow students the freedom to resort to their L1 (i.e. CLIL should be understood as bilingual teaching approach).
- Create a more relevant and relatable teaching and learning atmosphere by regularly involving students in decisions regarding the use of materials, activities, and tasks. An evaluation and optimization of the didactic tools and materials used should be conducted on a regular basis; ideally in collaboration with colleagues and students.
- Choose or create CLIL materials, activities, and tasks that are slightly above, but do not drastically exceed students' cognitive as well as linguistic levels. Preferably, cooperate with language teachers to check the cognitive and linguistic level of self-devised materials.
- Try to reach a certain 'threshold proficiency level' in the medium of instruction to conduct meaningful CLIL lessons. Intelligibility and expertise in the target language are a necessity for determining students' language needs as well as for choosing appropriate materials, activities, and tasks.
- If in doubt about any aspects of the medium of instruction, consult colleagues who have a language teaching degree, or consider enrolling in teacher training programs that aim to provide you with the essential tools and knowledge to improve your and your students' CLIL experiences.
- Teach technical and semi-technical terms in the medium of instruction. This will likely lead to higher levels of attention, motivation, and a greater chance of the retention of key vocabulary.

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