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Gabriel Pischinger

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“It does not matter how slow you go as long as you do not stop”

- Confucius -

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List of abbreviations

This list clarifies what the abbreviations used in this thesis stand for to avoid misunderstanding.

CLIL	=	<i>Content and Language Integrated Learning</i>
CBLT	=	<i>Content based Language Learning</i>
BICS	=	<i>Basic Interpersonal Communication Skills</i>
CALP	=	<i>Cognitive Academic Language Proficiency</i>
PUP	=	<i>Philosophie und Psychologie</i>
SLA	=	<i>Second Language Acquisition</i>
FLT	=	<i>Foreign language teaching</i>
FsAA	=	<i>Fremdsprache als Arbeitsprache</i>
EaA	=	<i>Englisch als Arbeitssprache</i>
EFL	=	<i>English as a Foreign Language</i>
FL	=	<i>Foreign Language</i>
CEFR	=	Common European Framework of Reference
IELTS	=	International English Language Testing System
L1	=	<i>First language</i>
L2	=	<i>Second language</i>
<i>T</i>	=	<i>Teacher</i>
<i>L</i>	=	<i>Learner</i>
Eurydice	=	<i>Education Information Network in Europe</i>
EUROCLIC	=	<i>European Network of Administrators, Researchers and Practitioners</i>
BMBF	=	<i>Bundesministerium für Bildung und Frauen (Ministry for Education and Women)</i>
BMUK	=	Bundesministerium für Unterricht, Kunst und Kultur (Ministry of Education, the Arts and Culture)
BMWF	=	Bundesministerium für Wirtschaft und Forschung (Ministry of Science and Research)
OED	=	<i>Oxford English Dictionary</i>
CD	=	<i>Cambridge Dictionary</i>
ibid.	=	<i>ibidem (in the same place)</i>
qtd. in	=	<i>quoted in (secondary quotations)</i>
e.g.	=	<i>example given</i>

Transcription conventions

The transcription conventions used for this study are based on the VOICE conventions, albeit slightly adapted and modified.

Speakers:

T1	<i>subject teacher</i>
T2	<i>native speaker teacher</i>
S	<i>student</i>
SS	<i>more than one student speaking simultaneously</i>
Sf	<i>female student</i>
Sm	<i>male student</i>
S1f	<i>identified female student</i>
S1m	<i>identified male student</i>
Sfx	<i>unidentifiable female student</i>
Smx	<i>unidentifiable male student</i>

Speech:

<un>X<un>	<i>incomprehensible word</i>
<un>XX<un>	<i>incomprehensible phrase</i>
<un>XXX<un>	<i>incomprehensible, longer sequence</i>
<1></1>	<i>overlap</i>
<L1de></L1de>	<i>Non-English speech (German)</i>
<...>	<i>mistake</i>
(.)	<i>short pause</i>
(2)	<i>longer pause</i>
{...}	<i>contextual information</i>
?	<i>rising intonation</i>
=	<i>other continuation</i>

Bold: emphasis added to mark words and passages in the qualitative analysis

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1. Introduction

Content and Language Integrated Learning (CLIL) is an approach that plays an increasingly important role in language education and has garnered significant interest in applied linguistics and teaching in the 21st century. It has become frequent in European foreign language education due to its argued advantages for language competence and subject knowledge improvement respectively.

In Austria, numerous CLIL programs have been implemented in primary and secondary education over the past two decades, with the most common subjects being natural and social sciences, like biology and history. So far, Philosophy & Psychology has been mostly left out as a potential CLIL subject, but successful attempts to implement the CLIL approach in Psychology & Philosophy have already been made. However, the CDF-Construct (Cognitive Discourse Functions) proposed by Dalton-Puffer (2013) appears to be the necessary missing link to make content and language integration generally applicable to Philosophy & Psychology (hereafter referred to as PUP) education. As Dalton-Puffer (2013: 216) states, CDFs can be considered as a

“zone of convergence between content and language pedagogies [...] as the cognitive processes involving subject-specific facts concepts and categories are verbalized in recurring and patterned ways during the event of co-creating knowledge in the classroom”.

Therefore, the main objectives of this thesis are to review what CLIL and CDFs are, and to determine whether the CDF-Construct can function as a suitable connector, building the bridge between language and PUP education.

The theoretical part of the thesis will provide with a thorough review of the origin and previous research in the fields of CLIL, SLA and CDFs, to grasp the full scope and connections of these two subject areas (chapters 2,3 and 4). Consequently, a theoretical analysis of the competency model developed for PUP will be carried out to determine if, and to which extent, CDFs can be mapped against the competences underlying the Austrian PUP curriculum (chapter 5). This is crucial to identify suitable vantage points for the implementation of CLIL in PUP lessons, as the focus of this research is to establish whether the CDF-construct can indeed function as a linkage between EFL and PUP education in a CLIL context.

For the empirical part, interviews with two CLIL PUP teachers will be conducted and shortly analyzed to see in how far the teacher's objectives and intentions are applicable to CLIL and the CDF construct (chapter 6). Subsequently, the empirical part of the

thesis will focus on observations and recordings of three authentic CLIL Philosophy lessons and one CLIL Psychology lesson carried out by the teachers with whom the interviews were conducted. This aims at determining how the classroom reality is affected and influenced by the usage of CDFs and is achieved by looking at the natural occurrence of CDFs and analyzing to which extent the CDFs are used (chapter 7.1), who realizes them (chapter 7.1) and how they are used in classroom interaction (chapter 7.2). In combination, the obtained data should provide a clearer picture for the compatibility of the CDF-Construct and CLIL PUP education and for further empirical investigations attempting to find correlations between CDFs and PUP competences. Finally, the results and insights of the entire thesis will be discussed in the conclusion (chapter 8).

2. CLIL – it's origin and definition

2.1. The definition of CLIL

Content and language Integrated learning (CLIL) can be considered as a teaching approach with mutual benefits for language and content subjects (Meyer 2010: 12). In other words, subject specific content is taught and learned via another language (most commonly English) that is not the students [and/or the teachers] mother tongue (Ruiz de Zarobe 2007: 47). However, the most common definitions are probably the following:

1) Content and Language Integrated Learning (CLIL) is a dual-focused educational approach in which an **additional Language** [sic] is used for the learning and teaching of both content *and* language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language. Each is interwoven, even if the emphasis is greater on one or the other at a given time. (Coyle, Hood & Marsh 2010: 1).

2) Conceived as an approach to education in which language teaching and subject learning are combined with the teaching of school subjects in general, content and language integrated learning (CLIL) is inspired by a twofold objective. It is meant to ensure first that pupils acquire knowledge of curricular subject matter and secondly develop their competence in a language other than the normal language of instruction. (Eurydice 2006: 22).

This of course has further implications, namely that a multitude of educational practices and diverse methodologies can be implemented in CLIL, as long as the dual-focus on language and content is provided (Marsh 2008: 233). Since [in Austria] it was started and initiated by individual teachers “from the bottom up” to serve their specific educational contexts and needs without relevant research and language policy in place yet, it cannot be considered a completely “uniform set of practices” and principles (Ball, Kelly and Clegg 2015: 2). For example, there is ‘hard’ CLIL in which “academic achievement within the subject” is foregrounded with the development of linguistic proficiency being “a bonus” and which is restricted to a couple of subjects that are taught exclusively in the respective foreign language (ibid: 5). On the other hand, there is the most dominant version called ‘soft’ CLIL that employs only small number of the respective subject lessons and puts conscious “emphasis on language development” (ibid: 5). Furthermore, Cenoz, Genesee and Gorter (2014: 245) mention that different scholars look at CLIL in different ways ranging from emphasis on “instructional techniques and practices” (e.g. Ball & Lindsay 2010) over considering it “in largely

curricular terms” (e.g. Naves & Victori 2010), up to a purely theoretical conceptualization in the “foundations of constructivism and L2 acquisition” (e.g. Marsh & Frigols 2013). As a result, “CLIL is an umbrella term adopted by the European Network of Administrators, Researches and Practitioners (EUROCLIC) in the mid 1990s.” (Coyle 2007: 545).

The aforementioned conglomerate of different perceptions and conceptualizations of CLIL clearly shows that it is by far not a homogenous concept, but rather displays a variety of practices and principles and methodologies coinciding. However, the common ground is that a non-language subject is taught in a foreign language other than the common language of instruction, emphasizing both content and the respective language to varying extents. Yet, all of this is done in addition to regular foreign language classes (Lasagabaster and Sierra 2009: 371). To sum up the definition of CLIL, one could say that

CLIL is first and foremost all about identifying competences young people need, secondly, identifying the communicative skills that accompany these competences and thirdly making decisions about classroom practice in order best to give young people the chance to gain experience of these skills and acquire them in meaningful, curriculum-led activities. The curriculum may specify that students will ‘analyse’, or ‘synthesize’, or ‘differentiate’ in a given subject. CLIL requires that teachers ‘translate’ this statement of objective into ‘language’ and ‘task’ so that the now explicit competences are met and practised in class. (Kelly 2014, quoted in Poisel 2014:4).

Finally, in order to illustrate the diversity of CLIL, I would like to take up the idea of Dale & Tanner (2012) by also comparing it to the renowned woodcut by M.C. Escher; *Sky and Water 1* (1938):

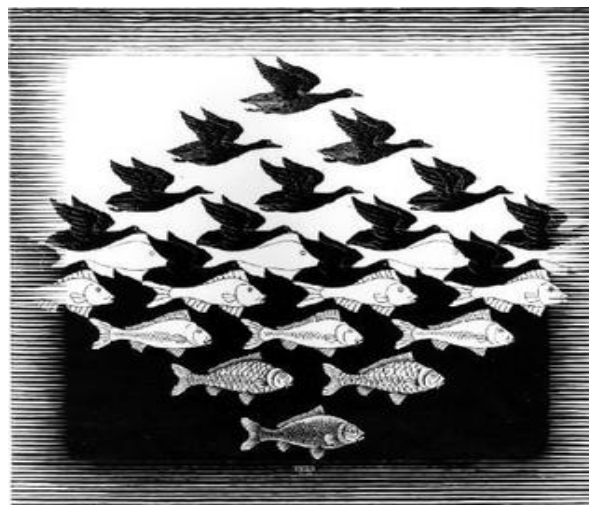


Illustration 1: Sky and Water 1 by M.C. Escher 1938
(Taken from: <https://mcescher.com/>)

The birds and the fish represent “subject elements” and “language elements” respectively and depending on which way you look at it, CLIL is sometimes more focused on content or and sometimes the emphasis is more on language. However, these two are inseparable and always intertwined (Dale & Tanner 2012: 3). Furthermore, the birds and fish represent the multitude of methodologies and practices incorporated in CLIL, as well as the thereby resulting difficulties to conceptualize and define it. A more comprehensive pictorial illustration comes from Mehisto, Marsh & Frigols (2008), taking into account the numerous ways and the educational levels in which CLIL can be implemented:

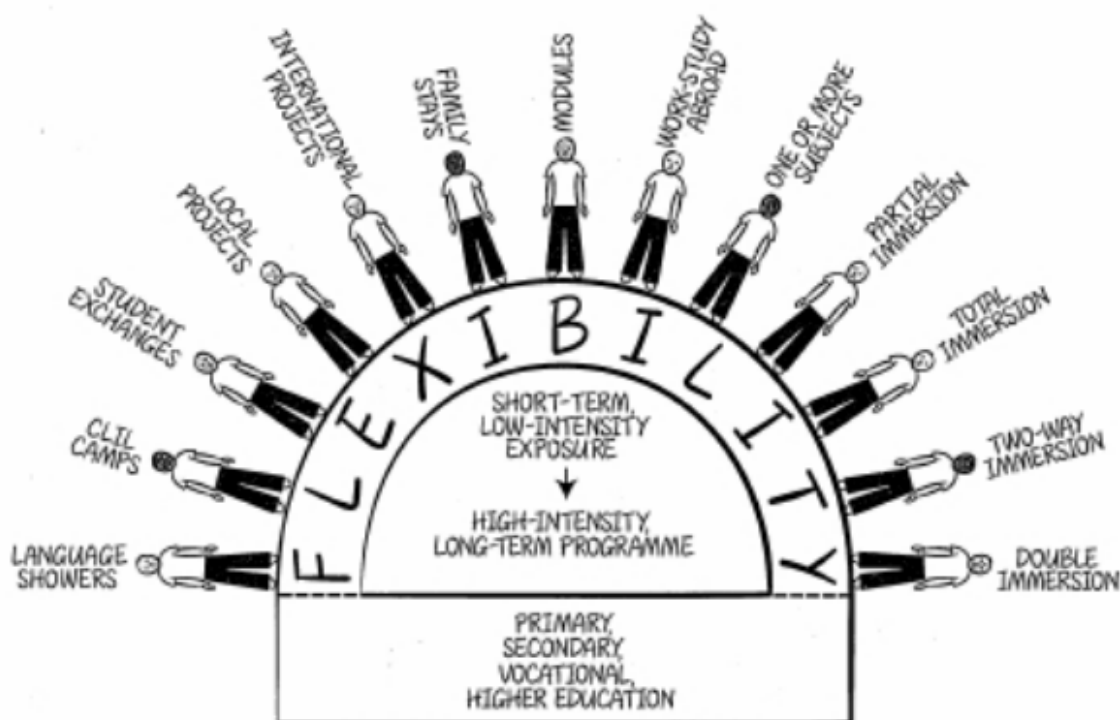


Illustration 2: The Many Faces of CLIL (Mehisto, Marsh & Frigols 2008: 13)

Nevertheless, successful attempts of creating a theoretical conceptualization of CLIL and its methodology and principles have been made and will be dealt with in chapters 3 and 4.

2.2. The origin of CLIL

As briefly mentioned above, CLIL is an approach that plays an increasingly important role in language education. The term CLIL was originally adopted in Europe in 1994 (Darn 2006:2) and generally refers to “an educational approach where curricular content of subjects [...] is taught to students through a language that is neither their first [...] nor the dominant medium of instruction in the respective education system.” (Dalton-Puffer & Nikula 2014: 117). Ever since the 1995 Resolution of the Council of Europe¹ that “refers to the promotion of innovative methods and in particular, to ‘the teaching of classes in a foreign language for disciplines other than languages, providing bilingual teaching’” (Martinez Adrian 2011: 94) , CLIL has been initiated and adopted in more and more countries across Europe (Eurydice 2006 8), with countries like Spain and the Netherlands having already implemented “explicit policy documents and relatively structured CLIL provisions” (Dalton-Puffer & Smit 2013: 547). This is not surprising since the *Input Hypothesis* by Krashen (1985) argues that intelligible linguistic input is key for language acquisition (qtd. in Dallinger et al. 2016: 24) and therefore, as will be stated in the chapter 3, crucial for making meaning and learning in general (Halliday 1993).

However, being educated in a language that is not the mother language of the learners is nothing new as the expansion of the Roman Empire into territories with diverging linguistic backgrounds and histories prompted the Romans to teach their children different languages like Greek [the language of education] in order to ensure for a multitude of professional opportunities (Coyle, Hood & Marsh 2010: 2). Mehisto, Marsh & Frigols (2008: 9) even go as far as pointing out that this phenomenon has been part of educational systems in a variety of sociopolitical contexts around the world for over five millennia, starting with the Akkadians inhabiting Sumerian territory, learning the local Sumerian language and consequently implementing it as language of instruction for several subjects. Moreover, in the more recent past, Latin had been used as the medium of instruction at universities across Europe for several centuries (Dalton-Puffer 2002:6; Martinez Adrian 2011: 94) and turned into the “primary language of law, medicine, theology, science and philosophy.” (ibid. 94). Yet, this kind of education was

¹ Council Resolution of 31 March 1995 on improving and diversifying language learning and teaching within the education systems of the European Union, Official Journal C207 of 12.08.1995.

usually reserved for the privileged and elite members of society (Coyle, Hood & Marsh 2010: 2; Merino & Lasagabaster 2018: 79).

Even more recent predecessors of CLIL are immersion programs that originated in Canada during the 1970s and 1980s in an attempt to give English-speaking children in the French parts of Canada equal chances to sufficiently learn the second major language of their socio-cultural environment in order to engage in authentic interaction with their French counterpart's culture and traditions (Baker 1993: 496 qtd. in Hanesova 2015: 9). As a result, several schools offered English-speaking students the opportunity to be taught several subjects in French along with French-speaking children (Hanesova 2015: 9). However, while immersion and CLIL share certain characteristics, the most common difference is that the language of instruction in immersion programs is naturally present in the students' surroundings (Lasagabaster & Sierra 2009: 370) while CLIL programs focus on a language that is merely taught within the context of formal school instruction (ibid: 370). This statement is rather controversial considering that, for example, in the French immersion context in Canada, English-speaking students are usually not surrounded by French in their personal lives (Wesche 2002: qtd. in Somers & Surmont 2012: 114). I will dive a little further into the origin of CLIL and to clarify the similarities and differences between CLIL and its related concepts in the next chapter.

2.3. Similar concepts

As "CLIL is not a new form education" [and not] "a new form of subject education [but] an innovative fusion of both" (Coyle, Hood & Marsh 2010: 1), it shares features with numerous similar concepts such as immersion, content based instruction (CBI), English medium instruction (EMI) and content based language teaching (CBLT) . Since dealing with all of them in detail would go far beyond the scope of this chapter, I will focus on CBLT and the bilingual education of immersion programs. Immersion is commonly defined as an educational program in which an L2 or a foreign language is used for academic instruction. Lasagabaster and Sierra mention a quite comprehensive list of overlapping characteristics for the latter with reference to Basque and Catalan immersion programs in Spain, but with a universal claim:

1) The final objective of immersion programs is that the students become proficient in both the L1 and the L2, without any detriment to the acquisition of academic knowledge.
2) The language the students are taught in must be new to them, so that its learning resembles the L1 acquisition process.
3) Parents of students choose immersion programmes because they believe they are the best L2 learning option.
4) The teaching staff must be bilingual, both to be able to implement the programme with the greatest guarantee of success and to ensure that throughout the school day all school activities can be smoothly carried out in the L2.
5) The communicative approach is fundamental to all immersion programmes. The objective is to obtain effective communication. For that reason, it is essential to have a learning environment that motivates students through significant situations and interlocutors who are really interested in their development and linguistic process.

Table 1: Similarities CLIL and immersion (Lasagabaster & Sierra 2009: 370)

With regards to point two, the language taught must not necessarily be new. If CLIL in Austria is implemented in secondary schools, students already had FL-instruction for a reasonable number years. Moreover, concerning point 4, Eurydice (2006: 42) indicates that in the Austrian context CLIL teachers merely need to possess “basic qualification(s) of a fully qualified teacher”. This means that teachers who are qualified in two content subjects may also teach CLIL lessons, but optimal CLIL settings require for the teacher to possess the necessary language skills as well as knowledge of their content subject and didactic/methodological CLIL principles and pedagogy (Abuja & Grangl 1998: 180ff & Ball, Kelly & Clegg 2015: 15). Based on Johnson & Swain (1997), Martinez Adrian provides another (in my opinion more suitable) list of key immersion program features of which some correlate with CLIL characteristics:

1) The L2 is the medium of instruction
2) Overt support exists for the L1
3) Learners have a limited knowledge of the L2
4) Teachers are sufficiently competent

5) The L2 curriculum parallels the L1 curriculum
6) The classroom culture is that of the L1 community, not that of the L2 community

Table 2: CLIL and immersion similarities (adapted from Martinez Adrian 2011: 95)

However, considering the similarities between CLIL and immersion, the most striking differences (apart from the one mentioned in the previous chapter) are that in immersion programs the “L2-medium curriculum time often decreases” (Baker 2001 qtd. in Ball, Kelly & Clegg: 2015: 7) and that there is “no focus on language in subject lessons” (Dale & Tanner 2012: 4). This means that within those lessons, language is acquired naturally like in an L1 context and the didactic emphasis is solely on “academic knowledge and skills” (Genesee & Lindholm-Leary 2013 qtd. in Cenoz, Genesee & Gorter 2014: 248). To be precise, at least in terms of Canadian immersion programs, “[f]rom the first day of school in Kindergarten children were instructed entirely in French. Later on, in grade 2 the started with their L1, English [and] by grade 6 half the curriculum was taught in French and half in English.” (Martinez Adrian 2011: 94). Yet, a distinction also needs to be made between “**total immersion**’ (100%)” **partial immersion**’ (say 50%)” [original emphasis] (Baker 2001, qtd. in Ball, Kelly & Clegg 2015: 7). Furthermore, “early, middle, late, dual [and] double” immersion also exist (Cenoz, Genesee & Gorter 2014: 248), and early immersion arguably shares features with primary school CLIL implementations (Llinares et al. 2012: 2).

In summary, identifying a clear cut between CLIL and immersion seems rather difficult, but Ball and colleagues state that while some forms of bilingual education “pursue political aims” and have the goal of “equity, equal language status, or multiculturalism” (2015:11), which is true for immersion programs (see chapter 2.2), reasons for CLIL implementation in Europe included “famililes wanting their children to have some competence in at least one foreign language”, improved language education for “socio-economic advantage, [...] greater inclusion and economic strength” and “language experts seeing the potential of further integrating languages education with that of other subjects.” (Coyle, Hood & Marsh: 2010: 8). While the original goals of CLIL and immersion implementation on a socio-political and socio-economical level may have diverted to a certain extent, students’ motivation to participate in those kinds

of programs seems to be identically instrumental in terms of “enhancing their job prospects” (Cenoz, Genesee & Gorter 2014: 248). Given the previously mentioned aspects, it would certainly be interesting to go into further detail concerning the similarities and differences of CLIL and immersion. This, however, would go beyond the scope of this chapter. In conclusion, the similarities seem to outweigh the differences leading some scholars to state “that the two terms apparently should best be considered lexical variants (Dalton-Puffer et al. 2014: 214) as most claims about features being exclusively CLIL related are also true for immersion and vice versa (Cenoz, Genesee & Gorter 2014: 247-253), but subtle differences still exist. Those will be comprehensibly summarized at the end of the chapter.

Another vanguard and close relative of CLIL is *content-based language teaching* (CBLT) or *content-based instruction* (CBI); terms which can be used interchangeably according to Lyster (2018: 17). Nevertheless, Ball, Kelly and Clegg (2015:1) point out, some English teachers wrongly use CLIL to refer to CBLT, which “is a form of language teaching into which subject contents are imported, but which is taught by language teachers, assessed as language teaching, and makes no formal contribution to the subject curriculum. CLIL on the other hand “is content-driven, and this is where it both extends the experience of learning a language, and where it becomes different to existing language-teaching approaches.” (Coyle, Hood & Marsh 2010: 1). CLIL is implemented in content lessons, taught by subject-specific experts and therefore assessed in terms of content knowledge, which distinguishes it from other forms of CBI (Dalton-Puffer et al. 2014). Despite this claim, in addition to Lyster (2018), other scholars use the terms CLIL and CBI synonymously as well (Ruiz de Zarobe & Cenoz 2015). It therefore seems appropriate to look at CBLT, CBI and CLIL along a continuum with the two extremes being “**language-driven** and “**content-driven**” [original emphasis] as CLIL is essentially a “generic umbrella term for bilingual content-based education” (Lyster 2018: 2-3; Mehisto, Frigols & Marsh 2008: 13).

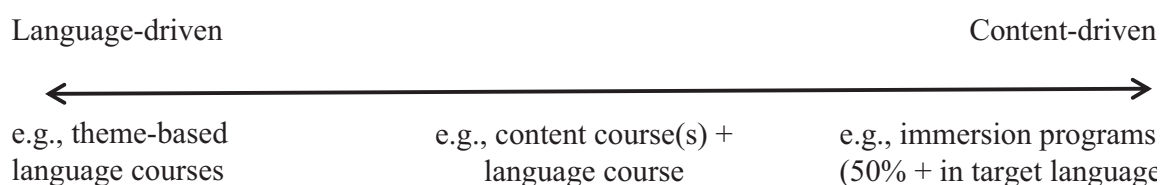


Illustration 3: Range of CBLT Settings (Lyster 2018: 2)

As we can see in this figure, immersion programs are placed at the content-driven end of the continuum and therefore essentially qualify as CBLT/CBI and consequently CLIL as well. These overlaps might be owed to the variability of CLIL implementations (see chapter 2.1.) and coincide with the sentiments of Cenoz, Genesee & Gorter (2014) mentioned above.

All in all, not seeing these approaches as distinctly different but along a continuum seems to be the most reasonable way because the aims mentioned above hold true for all the approaches under investigation in this chapter. Fortunately, Dale & Tanner have used the idea of the continuum to identify the similarities, subtle differences and variations between the discussed approaches by highlighting the role of the respective teachers:

Some differences between teachers of CBLT, CLIL and immersion				
More language <-----> more content				
	CBLT	CLIL		Immersion
Who teaches?	Language teachers	CLIL language teachers (in language lessons)	CLIL subject teachers (in subject lessons)	Immersion subject teachers
What kind of language work do they do?	Work on language through content	Work on general language while supporting subject-related topics and language in their language lessons	Work on the language of their subject	Little or no attention paid to language per se as teaching is done in another language
What is the aim?	To teach language	To teach language	To teach content and some language	To teach content
What do they teach?	Non-curricular subject matter (extra topics) in another language	The language curriculum as well as the language of the subjects to support subject teachers	Curricular subject matter and subject language	Curricular subject matter

What do they work with?	Often work alone in teaching language related to topics OR work with language department colleagues	Work with language department colleagues and subject teachers on developing subject and language with learners	Work with language teachers on developing subject and language with learners	Work with their subject department colleagues
How do they assess?	Assess and mark language	Assess and mark language	Assess and mark content (and sometimes language)	Assess and mark content
What do they give feedback on?	Give feedback on language	Give feedback on language	Give feedback on content (and sometimes on language)	Give feedback on content but not on language
What kind of knowledge do they refer to?	Language knowledge rather than content knowledge	Knowledge of the content of the subject teachers' lessons, which is sufficient to be able to work on related ideas and language during language lessons	Content knowledge and knowledge about the language of their subject, such as text-types, vocabulary, typical writing or speaking activities, language functions	Content knowledge
What assumptions do they have about learning?	That language is learned in context, through topics	That language depends on content; content depends on language	That content depends on language; language depends on content	That content is learned without explicit attention to language

Table 3: Differences CBLT, CLIL and Immersion (Dale & Tanner 2012: 4-5)

Keeping the above-mentioned similarities in mind, the differences can be summarized as follows:

As a CLIL subject teacher, rather than teaching a subject *in* another language – doing the same in another language as you do in your monolingual classes – we

suggest teaching your subject *through* another language. By this, we mean that subject teachers pay attention to both language and content in their lessons, to help learners learn both [...] as they learn a school subject. [original emphasis] (Dale & Tanner 2012: 5).

Arguably, immersion qualifies more as teaching a subject through another language with focus usually exclusively on content, while CBLT/CBI has a stronger focus on language without assessing content knowledge. CLIL can therefore be firmly placed at the center of the continuum and a broader scope of application accounting for its diversity and different forms (Dalton-Puffer et al. 2014: 215). So, as we have seen in this chapter, CLIL and its “friends” cannot be separated distinctly as “[t]he words *immersion* and *CLIL* live the lives of words in natural languages: they have histories, migrate from one discourse to another, acquire connotations and generally have fuzzy boundaries.” [original emphasis] (Dalton-Puffer et al. 2014: 214). Let us now look at the Austrian context.

2.4. CLIL in the Austrian context: An overview

In general, as also indicated in the previous section, “[t]he recent growing interest in CLIL can be understood by examining best practice in education which suits the demands of the present day” due to globalization and the merging of economic and social factors in language teaching policies (Coyle, Hood & Marsh 2010: 2; Lasagabaster 2008: 30). From the 90s onwards, more and more European countries have introduced English as the medium of instruction for non-language subjects to varying degrees (Dalton-Puffer 2007: 45) in attempts to “spread multilingualism” (Merino & Lasagabaster 2018: 79) and to foster “foreign language proficiency” without having to extend the allocated time of language lessons too much (Lasagabaster 2009: 367).

English is the most common CLIL language due to its status as the most influential European lingua franca, even though the intention was to foster other “lesser spoken languages” (Spanish, French, Italian etc.) as well (Dalton-Puffer 2007: 45-46). Beginning in the mid-2000s, research on the effects of CLIL on language skills have shown generally promising and positive results in various areas and across different school levels, mother tongue backgrounds and subjects (Perez-Vidal & Roquet 2015; Lasagabaster 2008; Zydati 2007; Nigthingale & Safont 2019; Perez Canado & Lancaster 2017; De Diezmas 2016). As a result, and with the premise of “students

get[ting] two for the price of one” (Bruton 2013:588), CLIL has gained significant popularity in Austria. Therefore, Austria has gradually followed suit with numerous CLIL programs being initiated in various school types and regions (Abuja 2003). This was mostly benefitted by the political situation in Austria and the country joining the EU in 1995 and resulting “foreign language teaching (FLT) initiatives” that lead to the movement known as *Fremdsprache als Arbeitssprache* (FsAA), which do not solely emphasize the English language (Dalton-Puffer 2007: 46). Since in the Austrian context English is the preferred language for this kind of teaching, which is due to the popularity of English around the world, the description *Englisch als Arbeitssprache* (EaA) has also emerged (Dalton-Puffer 2002: 4; Dalton-Puffer Smit 2013: 546). Both versions, however, can be subsumed as the Austrian model of CLIL. As Dalton-Puffer further points out, the European Commission White Paper 1996 already advocates “the first foreign language as a medium of instruction at secondary level” (Dalton-Puffer 2007: 46). Eurydice even states that first official legislations concerning bilingual teaching were already issued at the end of the 1980s (2006: 15). However, the ways of how to implement CLIL programs was mostly left in the hands of “local agents” (Dalton-Puffer & Nikula 2014: 117) as “the formal provisions regarding the use of foreign languages as medium of instruction are very general and non-restrictive”, which in turn allowed schools and teachers an experimental approach towards various forms and models of CLIL at varying educational levels (Dalton-Puffer 2007: 47). Thus, the application of a CLIL approach in Austria could be described as a “grass roots movement” (ibid: 46).

In terms of subjects used in a CLIL context, the primary education sector utilizes almost all subjects (see Abuja 2003). The situation in general secondary education is rather similar as “[a]ny subject may be chosen for CLIL among those on offer” (Eurydice 2006: 26), making it clear that it is up to the school or teacher to decide. Or, as Abuja puts it, the subject chosen is a matter of qualified teachers and materials available (2007: 18). However, the most common subjects appear to be geography, history and biology (Abuja 2007: 18), but other subjects such as political education, mathematics, physics, chemistry, economics & business etc. have also garnered interest recently (see Poisel 2014). The question about numbers of actual implementation of CLIL programs is still up for debate since the only survey comprising statistical data dates back to 1997 and only provides insight into the sector of secondary education (Abuja 2007: 18). According to this survey, an average of “about 15% of all Austrian Secondary schools

provide a kind of CLIL instruction” and 27% of secondary academic schools utilize the CLIL approach (Abuja 2007: 18). Dalton-Puffer however points out that the percentage in the latter mentioned schools is around the 50% mark (2007: 47).

As far as time allocated to CLIL lessons is concerned, the allocated number of hours is “1-2 hours a week” in primary education, while for secondary education the allocation is “at the discretion of the teachers” (Eurydice 2006: 28). Generally speaking, the CLIL approach can be used “for a limited time of the school year [...], or throughout the whole school year” (Abuja 2007: 17), with a variety of topics and contents being taught. Of special interest for this thesis is that, according to Abuja et al., EaA is used in psychology and philosophy for shorter sequences (1998: 77) to presumably deal with topics and content originally originating from the Anglo-American sphere. Therefore, the time allocated to CLIL is usually related to the specific needs of the different school types and institutions and the content that is being taught (Abuja 1999: 2). Thus, the following observation by Dalton-Puffer (2007: 45) holds true for the Austrian CLIL context as there seems to be “no sense of a consolidated CLIL scene that would follow clearly defined curricular models, working towards explicitly formulated objectives”. Nevertheless, a legal foundation for the application of CLIL can be found in §16(3) of the Austrian School Education Act which states the following:

Darüber hinaus kann die zuständige Schulbehörde auf Antrag des Schulleiters, bei Privatschulen auf Antrag des Schulerhalters, die Verwendung einer lebenden Fremdsprache als Unterrichtssprache (Arbeitssprache) anordnen, wenn dies wegen der Zahl von fremdsprachigen Personen, die sich in Österreich aufhalten, oder zur besseren Ausbildung in Fremdsprachen zweckmäßig erscheint und dadurch die allgemeine Zugänglichkeit der einzelnen Formen und Fachrichtungen der Schularten nicht beeinträchtigt wird. Diese Anordnung kann sich auch auf einzelne Klassen oder einzelne Unterrichtsgegenstände beziehen. Zwischenstaatliche Vereinbarungen bleiben davon unberührt.
(SchUG 2014: §16 Abs.3)

So, while there is no unifying curriculum or model for CLIL in place (Abuja 1999: 3), Austrian legislation still attempts to foster foreign language teaching, bilingual education and therefore CLIL. Unfortunately, the integration of content and language “is [normally] seen as primarily a teacher’s matter” (Morton & Jakonen 2016: 171) with only a minimum of official backing (Skinnari & Bovellan 2016: 149), leaving all the work of implementation to be done by the teachers. Also, [t]here are no financial rewards, no reduced teaching hours and sometimes not even extra funds for additional teaching

materials”, rendering “the gratification of CLIL teachers [...] exclusively symbolic” in form of successful professional development (Dalton-Puffer 2007: 47). However, as Abuja points out, most pedagogical institutions already provide CLIL specific teacher training courses and seminars and in-service training is also available for primary school (Abuja 2007: 19). For secondary school teachers for example, “the University of Klagenfurt in co-operation with the Austrian Centre for Language Competence (ÖSZ)” offers a “[f]our semester course” on CLIL implementation (ibid 19). In nowadays diverse, almost exclusively achievement-oriented societies and communities that are consistently growing due to the fast-paced globalization, it is imperative that teachers are equipped with the tools to serve the needs of students and society in general. Therefore, more extensive offers rewards for teachers willing to implement CLIL are definitely necessary. This would most likely also increase the number of CLIL programs throughout Austria.

3. Why CLIL?

The question to why implementing CLIL programs in schools is a good idea can be answered in numerous ways. Some of those answers have already found their way into this thesis in previous chapters, but I would like to use this chapter to thoroughly elaborate on the aims of CLIL, the benefits and drawbacks as well as a summary of underlying second language acquisition (SLA) theories.

3.1. Educational aims and objectives of CLIL

While the general aims of CLIL where already mentioned before (see chapters 2.2; 2.3.), I intend to go into a little more detail here. At this point it is necessary to note that country-specific goals of CLIL might differ, but importance (to varying extents) is usually given to the following aspects and factors (Eurydice 2006: 22):

- preparing pupils for life in a more internationalised society and offering the better job prospects on the labour market (**socio-economic objectives**);
- conveying to pupils values of tolerance and respect vis-à-vis other cultures, through use of the CLIL target language (**socio-cultural objectives**);
- enabling pupils to develop:

- language skills which emphasise effective communication, motivating pupils to learn languages by using them for real practical purposes (**linguistic objectives**);
- subject-related knowledge and learning ability, stimulating the assimilation of subject matter by means of different and innovative approach (**educational objectives**).

Austria for example seems to foreground socio-cultural, language-related and educational aims (Eurydice 2006: 23). The role of CLIL in terms of offering a “pragmatic response towards overcoming linguistic shortcomings” and simultaneously bolstering equality for students of all age groups and “support needs” is not to be underestimated (Coyle, Hood & Marsh 2010: 7). A further goal is strengthening the “affective dimension of language learning” to motivate students to learn foreign languages, cherish cultural and linguistic diversity and losing the fear of using the language by connecting it to areas of interest of the students (Hüttner & Smit 2014: 165f). Further goals given by experts in the field can be found in the *CLIL-Compendium* [original emphasis] (Dalton-Puffer 2008: 142):

- Develop intercultural communication skills
- Prepare for internationalization
- Provide opportunities to study content through different perspectives
- Access subject-specific target language terminology
- Improve overall target language competence
- Develop oral communication skills
- Diversify methods & forms of classroom practice
- Increase learner motivation

The goals mentioned in the compendium mostly correlate with the ones mentioned before (Eurydice 2006; Coyle, Hood & Marsh 2010; Hüttner & Smit 2014), but form a comprehensible and extensive list in combination. Putting all these objectives into practice is arguably not an easy task, but certainly necessary to some extent as “‘general’ language learning – what might be called language learning for its own sake – can only be taken to a certain point (B1 according to the CEFR)” (BMUK/BMWF 2008: 31). After that, development of language proficiency is subject “to more

specialized themes and domains of language use” as mere focus on grammatical form will hardly lead to sufficient proficiency, making “the transition to some form of CLIL” inevitable (ibid: 31). This means that the emphasis needs to be put on meaning at some point. Therefore, the next chapter will show to which extent CLIL has been successful so far and where the general benefits of the approach lie. Drawbacks will of course also be accounted for.

3.2. Benefits (and drawbacks) of CLIL

A fundamental argument for the implementation of CLIL is that “students get two for the price of one” as content knowledge and language skills are developed at the same time (Bruton 2013: 588). However, in the same breath Bruton (2013: 588) also expresses his doubts whether this is true by stating that “it should immediately raise suspicions that apparently changing the medium of instruction of content subjects to a FL is really fairly problem-free and beneficial to all concerned”. These concerns stem from the false believe “that having content taught only through the L2 in the absence of MFL [Modern Foreign Language] provision is the most wide-spread CLIL scenario”, which is certainly not the case as CLIL seeks to support regular FL instruction (Hüttner & Smit 2014: 163). This consideration as “complementary” is also reflected in Coyle, Hood & Marsh (2010). A big challenge for kids and adolescents in education nowadays appears to be uncovering the “hidden curriculum and the ‘language of learning’, which encompass “academic vocabulary, cross-curricular general academic language, it involves knowledge of academic genre as well as academic language skills and academic study skills.” (Poisel 2014: 5). CLIL helps making this curriculum explicit and foregrounds language and communication, language and thinking, higher-order thinking skills and the competences students need to acquire (ibid 5).

Concerning its effectiveness, numerous researchers have reported positive impacts in all kinds of socio-political contexts, subjects and linguistic/content areas of investigation (Perez-Vidal & Roquet 2015; Zydati 2007; Lasagabaster 2008; Llinares & Dalton-Puffer 2015). For example, as Dalton-Puffer (2008) points out for the Austrian context, learning results of CLIL are rather decent considering that most CLIL students linguistically outperform their regular counterparts. Also, according to Hellekjaer (2004), CLIL students fared significantly better on the IELTS reading test as opposed to students not involved with CLIL. Furthermore, a study carried out by Perez & Canado & Lancaster (2017) indicates far better oral production skills for CLIL students who

“outstripped” their non-CLIL colleagues “across the board”. Furthermore, referring to studies by Seikkula-Leino (2007) and Lasagabaster (2011) (amongst others), Coyle (2013: 247) shows that learning in a foreign language can indeed increase general learner motivation as well. Nevertheless, other studies have not gathered such positive results. Meyer (2010: 13) refers to studies conducted by Dalton-Puffer (2007) and Vollmer (2008), both of which report a lack of productive language skills among CLIL learners. Badertscher & Bieri (2009) study shows that CLIL did not necessarily have a positive effect on the acquisition of content knowledge, albeit not inhibiting it. Some studies and reinterpretations of previous CLIL studies even suggest that the positive effects of CLIL are due to the selection of the most suitable students, leaving the generally weaker learners out of the picture (Bruton 2011; Perez-Canado 2012). The longitudinal study by Merino & Lasagabaster (2018) additionally points out that the positive CLIL effect might vanish over a longer period of time, resulting in CLIL and non-CLIL students at being on the same proficiency level. What becomes generally clear though, is that in these cases the acquisition of content knowledge was clearly more time consuming due to the simultaneous focus on language. A concern that is also shared by Dallinger et al. who state that the positive effects of content subjects are still up for debate (2016: 23). If one takes a look at the bigger picture though, “there is much evidence to suggest that CLIL students are equally, if not more successful, at learning a subject than students learning content subjects in L1.” (Meyer 2010: 12). In summary I would agree with Coyle (2007: 546) that

[t]he strength of CLIL focuses on integrating content and language learning in varied, dynamic and relevant learning environments built on ‘bottom-up’ initiatives as well as ‘top-down’ policy. Its potential weakness lies in the interpretation of this ‘flexibility’ unless it is embedded in a robust contextualized framework with clear aims and projected outcomes.”.

So, if CLIL is given a framework of clear goals, objectives and, as I would add, clear methodological principles that suit its context, it can be successful. These are the premises for scholars stating that CLIL students possess “greater language ability and also greater awareness of the pragmatic demands of the task” (Dalton-Puffer & Jexenflucker 2010:182). After all, CLIL provides the opportunity of increasing L2 exposure and practice without having to expand regular FL-instruction (Dale & Tanner 2012: 11) in addition to presenting “meaningful, challenging and authentic” input

(Meyer 2010: 13). In line with the natural approach by Krashen & Terrell (2000)² that advocates learning conditions similar to those of L1 acquisition in order to foster the L2, CLIL is exemplary for this kind of situation as the exploration of language embedded in a “meaningful context” [...] enables learners to use their language repertoire “to communicate for a variety of purposes” to develop fluency which arguably “precedes accuracy” (Darn 2006: 4). After all, making mistakes is natural in acquiring a language (ibid: 4).

3.3. CLIL and its underlying SLA theories and principles

Since CLIL is essentially a complementary form to regular second language teaching, it is worth taking a look at the underlying theories and principles of SLA such as the previously mentioned natural approach. Other prominent examples are Krashen’s monitor model including the Input Hypothesis (1985), Long’s interaction hypothesis (1981), Swain’s comprehensible output hypothesis (1985) and Givon’s discourse hypothesis (1979). All these theories will be succinctly dealt with in this chapter. As I consider the Natural Approach a predecessor of Krashen’s Monitor Model, I will not go into further detail about it here.

3.3.1. Krashen’s Monitor Model³

As Lai & Wei state, Krashen’s Monitor Model consists of 5 hypotheses, all of which play a crucial role in language acquisition (2019: 1459-1461):

- 1) The Acquisition-learning Hypothesis
- 2) The Monitor Hypothesis
- 3) The Natural Order Hypothesis
- 4) The Input Hypothesis
- 5) The Affective Filter Hypothesis

The focal point of this theory is the “distinction between language *acquisition* and language *learning*” because acquisition can be considered “a subconscious process while learning is conscious.” [original emphasis] (Tricomi 1986: 59). According to

² For further information see Krashen & Terrell 2000.

³ For further information see Krashen 1985.

Krashen, language learning is different from acquisition since learning encompasses only the formal aspects that govern a language (sets of rules and grammatical conventions), while acquisition happens separately via “comprehensible input” (ibid. 60). The learned set of grammatical conventions can only function as a ‘monitor’ in the acquisition process of language competences by modifying or correcting the output of students (Tricomi 1986: 60; Myles 2010: 325). As Dalton-Puffer (2002: 7) points out, Krashen “stresses that optimal comprehensible input is not grammatically sequenced but first and foremost focused on **meaning** [my emphasis]”. Hence, one could argue that learning is an overt and acquisition a covert process. Furthermore, this distinction and the foregrounding of comprehensible input is therefore crucial for the CLIL context since content is emphasized as opposed to form, relying on language proficiency to develop through meaningful content. However, a downside of Krashen’s theory is the rather vaguely defined nature of comprehensible input with his famous formula of ‘**i + 1**’ (Myles 2010: 326). This simply means that “[c]omprehensible input [always needs to be] somewhat beyond the learner’s current level of linguistic competence (“i”), thus providing a kind of added value (“+1”) in the shape of linguistic forms and functions which are just beyond the learners proficiency level.” (Dalton-Puffer 2002: 7). In nowadays diverse classrooms with a variety of different proficiency levels among students being present, the comprehensible input will most likely vary and thus make “it difficult to apply this hypothesis in classroom teaching” (Lai & Wei 2019: 1462). Finally, Dalton-Puffer (2002: 7) also points towards the importance of the ‘Affective Filter Hypothesis’ for CLIL and SLA in general by stating that “acquisition will occur, especially if the learning situation is characterised by positive emotions.”. Consequently, negative emotions might inhibit the learning process. Nevertheless, Krashen’s theory provides a sound foundation for the implementation of CLIL.

3.3.2. Long’s Interaction Hypothesis & Givon’s Discourse Hypothesis

As I consider these two hypotheses interrelated, I will not elaborate on them in two separate sections. Let us start with the Interaction Hypothesis first.

The essential point of Long’s hypothesis is that learning environment and interaction play a crucial role in language acquisition. Furthermore, “conversational adjustments which happen in two-way interaction [$L \leftarrow \rightarrow L$ and $T \leftrightarrow L$ with regards to CLIL] for creating-learner-adequate comprehensible input” are highlighted in this theoretical framework, including “recasts, expansions, or reformulations” (Dalton-Puffer 2002: 8)

as well as clarifying and “confirming what has already been understood throughout the conversation.” (Masrizal 2014: 98) This interactive environment of modifications is inevitably tied to the “negotiation of meaning”, which supposedly provides fertile ground for the development of second language proficiency (ibid. 8). Essentially, the facilitating effect of interaction is due to linguistic adjustments that provide the learners the opportunities to deal with the given input or content sufficiently and in accordance to their learning needs (Mackey 2007 qtd. in Masrizal 2014: 97). To say it in Long’s words:

It is proposed that environmental contributions to acquisition are mediated by selective attention to the learner’s developing L2 processing capacity, and that these resources are brought together most usefully, although not exclusively during negotiation of meaning (Long 1996: 414).

I presume that by not exclusively, Long points towards non-interactive teaching and learning, which requires the teacher to carefully select and adapt their materials and didactics according to the students’ language level and needs. An argument that has strong implications for CLIL. As opposed to Krashen’s idea of the relation of input and interaction, Long generally seems to place the emphasis on “concrete interaction (i.e. the mistakes which cause misunderstanding or communication breakdown).” (Dalton-Puffer (2002: 8). In terms of CLIL this means additional focus for the teacher on making the input comprehensible and initiate formal correction if necessary.

Arguably, interaction and discourse are fundamentally intertwined, which is why Givon’s Discourse Hypothesis is a suitable addition here. “The Discourse Hypothesis [...] holds that language learners will acquire only those types of language found in the discourse types in which they tend to participate.” (Dalton-Puffer 2002: 8). CLIL provides different forms of discourse with topics not usually dealt with in regular FL classes and thereby a variety of different ideas, vocabulary and linguistic forms in authentic and natural contexts. As Dalton-Puffer states, this is an important point to consider with regards to authenticity issues in context of English-medium instruction in Austria (2002: 9). To combine the two hypotheses mentioned above, CLIL can offer an environment that enables negotiation of meaning along with providing authentic discourse in a less form-focused (informal) setting, given that the input is comprehensible. If all these aspects merge smoothly, students can practice their language repertoire while simultaneously internalizing formal aspects of language with support of the teacher. This brings us to the last crucial hypothesis underlying CLIL, at least concerning this thesis: Swain’s comprehensible output hypothesis.

3.3.3. Swain's Comprehensible Output Hypothesis⁶

This hypothesis developed by Swain (1985) proposes “that we acquire language when we attempt to transmit a message but fail and have to try again” until we finally make ourselves comprehensible to the recipient of the message (Krashen 1998: 175). This involves rephrasing and modification of our intended message in order to be transmitted successfully. A necessity of language acquisition that in my opinion correlates with numerous Cognitive Discourse Functions (CDFs) such as *Evaluate*, *Explain* and *Report* (Dalton-Puffer 2013). But more on that in chapter 5. After all, acquisition of language does not solely involve receptive skills such as listening but producing output in form of speaking and writing is of major importance as well. Being able to write and speak fluently are imperative elements of language proficiency and learners need to be given the opportunities attain these abilities (Swain 1985 qtd. in Dalton-Puffer 2002: 8). Unfortunately, Dalton-Puffer (2002: 9) also makes a strong claim about this not usually being the case by referring to studies by Cazden (1988), Mehan (1985) & Chaudron (1988), all of which report very limited student talking-time during lessons. Still, that was 20-30 years ago and the educational landscape has changed a lot since then. Furthermore, these studies do not specifically refer to CLIL contexts.

Having dealt with general underlying SLA theories of CLIL, it is now time to turn towards more CLIL specific methodology while also looking at CLILs underlying didactic principles in an attempt to get closer to successful integration of content and language.

3.4. CLIL Methodology & Didactics

As we have seen in chapters 2 and 3, CLIL has many faces and is based on several, to certain extents interrelated SLA theories. Thus, CLIL methodology cannot be considered a uniform set of principles. However, some specifically CLIL related methodological principles and didactic guidelines have been developed based on those SLA theories to help teachers in their implementation of CLIL and foster a beneficial learning outcome for students in such settings regarding both language and content. The ultimate goal is to help them to “apply, integrate and transfer knowledge

⁶ For further information see Swain 1985.

and foster critical thinking” (Darn 2006: 3). This can also have positive effects on the general motivation of students to learn (ibid. 3).

3.4.1. The 4Cs framework

The 4Cs Framework was developed by Coyle (2007)⁷ and is comprehensively referred in Coyle, Hood & Marsh (2010). As proposed, it “integrates four contextualized building blocks: **content** (subject matter), **communication** (language learning and using), **cognition** (learning and thinking process) and **culture** (developing intercultural understanding and global citizenship) [original emphasis].” (Coyle et al. 2010: 41). The underlying suggestion is therefore that effective CLIL entails a symbiotic relationship of:

- progression in knowledge, skills and understanding of the content;
- engagement in associated cognitive processing;
- interaction in the communicative context;
- development of appropriate language knowledge and skills;
- the acquisition of a deepening intercultural awareness, which is in turn brought about by the positioning of self and otherness. (Coyle et al. 2010: 41)

To be more specific, the idea of the 4Cs Framework is set up on the foundation of seven underlying principles that govern the CLIL approach, as shown by Coyle, Hood & Marsh (2010: 42, adapted by myself based on Meyer 2010: 12):

Content →

1) Content matter is not only about acquiring knowledge and skills, it is about the learner *creating* their own knowledge and understanding and *developing* skills (personalized learning) [original emphasis].

Cognition →

2) Content is related to learning and thinking (cognition). To enable the learner to create their own interpretation of content, it must be analysed for its linguistic demands.
3) Thinking processes (cognition) need to be analysed for their linguistic demands.

⁷ For detailed information see Coyle 2007.

Communication →

4) Language needs to be learned which is related to the learning context, to learning *through* that language, to reconstructing the content, and to related cognition processes. This language needs to be transparent and accessible.

5) Interaction in the learning context is fundamental to learning. This has implications when the learning context operates through the medium of a foreign language.

Culture →

6) The relationship between cultures and languages is complex. Intercultural awareness is fundamental to CLIL.

7) CLIL is embedded in the wider educational context in which it is developed and therefore must take account of contextual variables in order to be effectively realized.

The following figure serves to provide a more visualized representation of the interrelatedness of the 4Cs:

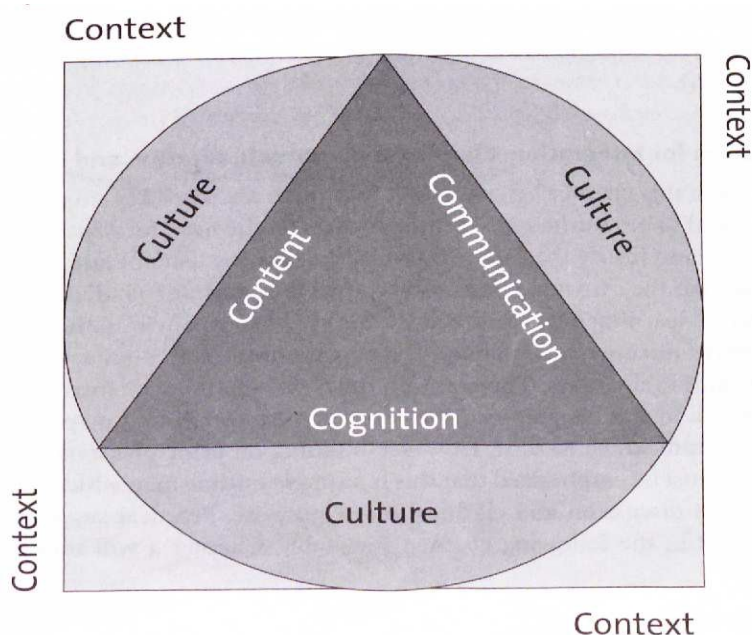


Illustration 4: The 4Cs Framework (Coyle, Hood & Marsh 2010: 42)

As this figure shows, the CLIL approach relies on integration of content, cognition and communication with simultaneous considerations for cultural and contextual embedment. Teachers wanting to implement CLIL can use the 4Cs Framework as a

tool to structure and design their lessons. What needs to be kept in mind though is the “double challenge” CLIL learners face as processing speech in a second language and simultaneously internalizing new information and knowledge may be difficult, especially with low proficiency levels (Abuja 2007: 21). Abuja (2007: 21) therefore offers some ‘general rules’ having successfully been used by CLIL teachers:⁸

- slow down pace of presentation considerably;
- break down information into smaller, more easily ‘digestable [sic] units’;
- support presentations by using visual stimuli and artefacts in order to better exemplify meaning and content;
- give sufficient time for repetition, thus reinforcing the learning process;
- being tolerant about language mistakes (in the process of learning);
- simplify content as much as the curriculum allows;
- adopt as many useful methods from communicative language teaching as possible.

The last point of this list is a perfect transition to the next section in which I will deal with didactics and task/material design.

3.4.2. The CLIL Pyramid

According to Abuja (2007: 21), finding suitable materials for CLIL lessons is not an issue due to the multiplicity of authentic materials in the target language that can be found on the internet and adapted to serve the purpose of the teachers and the needs of the students. A good way to understand how lesson materials can be adapted or even designed from scratch, is having a look at the CLIL Pyramid.

The CLIL Pyramid developed by Meyer (2010)⁹ based on the 4Cs Framework offers numerous aspects and strategies relevant for CLIL didactics and for teachers to design appropriate materials for their CLIL lessons:

⁸ Please note that the original wording was changed a bit to fit grammatically and syntactically. Meaning and content was not changed.

⁹ For detailed information see Meyer 2010.

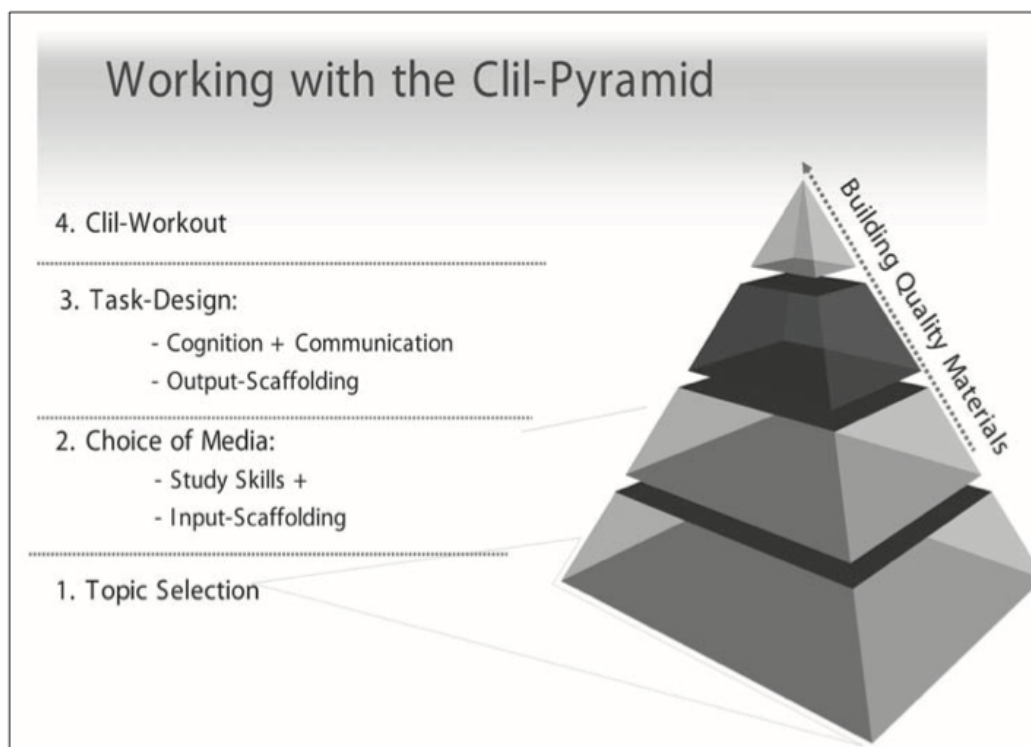


Illustration 5: The CLIL Pyramid (Meyer 2010: 24)

Starting with the selection of topics, Meyer (2010: 13-14) mentions that

subject learning through a foreign language works best when new topics are presented in such a way that the affective filters of the students remain wide open when students can link new input to prior knowledge, experiences and attitudes.

Such “rich input”, as he labels it, can be presented in various forms such as video-clips, pod-casts, portfolio work or presentations (among others, but should adhere to the principle of “self-directed and differentiated learning with a multitude of modalities presenting the preferably authentic input (ibid. 14). Nevertheless, the teacher still has an important position in the learning process in terms of being a “language role-model who actively shows and teaches students how to perform language operations such as analyzing or interpreting” the content under investigation “, verbalizing higher order thinking processes” and providing feedback and correction of errors (ibid. 14). In summary, “an appropriate balance of teacher-directed and learner-directed activities” needs to be established (ibid. 14). How these tasks and activities may look of course depends on the subject. In relation to the input and output, scaffolding takes a central role in CLIL. Ball, Kelly & Clegg (2015: 137) offer a list of “tools for scaffolding language

support” and thereby helping students reaching optimal intake and producing sufficient output:

- full scripts
- brief pre-activity language practice
- word lists
- information gap
- jigsaw tasks
- sentence starters
- substitution tables
- annotated visuals
- questions without answers
- speaking frames
- notes to speak from

The purposes of these tools and scaffolding in general lie in reducing “the cognitive and linguistic load of content/input”, enabling students to “accomplish a given task through appropriate, supportive structuring and to provide them with language and content input they can in turn use “to verbalize their thoughts appropriate to the subject manner” (Meyer 2013: 299). But that does not mean every single word needs to be taught beforehand. Materials, texts and tasks should be designed for the students to understand the gist, but still having to infer meaning from the context (ibid. 299). Furthermore, higher order thinking skills (H.O.T.s) need to be facilitated as they are “the key to success in the information Age” (ibid 305). However, those thinking skills or **academic/cognitive discourse functions** [my emphasis] do not just magically find their way into students thought processes but need to be introduced, taught and practiced systematically along the following path: **Input → scaffolding → tasks → scaffolding → output** [my emphasis] (Meyer 2013: 305). Various type of thinking skills need to be triggered without causing the students to be overwhelmed (Zwiers 2006, qtd. in Meyers 2013: 306), which means language work and showing students how they can express certain things sufficiently and in a sophisticated manner needs to be foregrounded (Meyer 2013: 306). The ultimate goal of education, after all, is that learning is sustainable and that new knowledge “becomes deeply rooted in our students’ long-term memory” so that it can be used whenever necessary to “solve

problems or to complete tasks” in a competent and independent way (Meyer 2010: 22) regardless of (subject) context. As we will see in the next chapter, the construct of cognitive discourse functions provides fertile ground for the integration of content and language and thereby for the sustainability of learning in general.

4. Cognitive Discourse Functions (CDFs)

Regardless of the educational setting, whether monolingual or bilingual; whether teaching takes place in L1 or L2, integrating content and language is “relevant for any teaching and learning” and every teacher should embrace it (de Graaff 2016: xiv). However, as the term CLIL implies, integrating content and language is the defining aspect of CLIL and language possesses an “*inherent*” role when it comes to teaching and learning processes (ibid. xv). Learning, after all, is a cognitive process we cannot directly observe, but classroom discourse and interaction can help us to determine if learning has occurred or not (Dalton-Puffer 2016: 29).

4.1. Language, thought & learning

As Coyle, Hood & Marsh (2010: 35) point out,

“[a]ssuming that in CLIL settings it is necessary for learners to progress systematically in both their content learning and their language learning *and* [original emphasis] using [...], then using language to learn is as important as learning to use language – both are requirements.”

As Dalton-Puffer further clarifies, within the context of competence-oriented teaching, pedagogy and education in general, which certainly includes the Austrian education system, students are not only supposed to gain knowledge, but also do be able to use the outcomes of their learning processes (Dalton-Puffer et al. 2018: 6). Using these outcomes, as Dalton-Puffer et al. (2018: 6) put it, encompasses a “considerable degree of ‘*linguaging*’ [in terms of using language to express knowledge]” and therefore the “functional dimension of language” needs to be prioritized in competence-oriented settings. This arguably accounts for every kind of classroom teaching, regardless of the medium of instruction. After all, “language is the space where knowledge is created” in form of an “active, dynamic and continuous process” that enables “discovery, identification and storage of new knowledge”, along with transmitting it (Reitbauer et al. 2018: 93).

This is in line with what Vygotsky (1962: 44-49) claimed by pointing out that there is a strong and unbreakable interrelation between language and thought that starts during early childhood through inner monologues representing the inherent cognitive activities. Therefore, language and cognition are not separate entities but in combination enable the construction of knowledge, its transmission and application. Building knowledge is always a reaction to input, but apart from being merely a tool of response, language allows us “to relate content, thinking and communication to one another” (Reitbauer et al. 2018: 93). Furthermore, the idiosyncratic feature of the human learning process is the attempt to make meaning of the input the world provides us with and is therefore a “semiotic process” firmly established in language as the means of making meaning (Halliday 1993: 93). Therefore, “[l]anguage is not a **domain** [original emphasis] of human knowledge [...]; language is the essential condition of knowing, the process by which experience becomes knowledge” (ibid: 94).

What needs to be kept in mind though is that “[k]nowledge negotiated in the didactic interaction can indeed be considered as corresponding primarily either to subject paradigms [...], or to language paradigms” (Gajo 2007: 569). So, language needs to be considered as domain of knowledge as well, because without sufficient knowledge of the rules governing the language and having the ability to apply them to content, knowledge cannot be constructed. As a result, language acquisition, language proficiency and communicative competence are the premises and form the fundamentals of learning and thereby knowledge acquisition (Halliday 1993: 113). To put it a little differently, constructing knowledge and transmitting it resides within the domain of interaction, but “linguistic and non-linguistic types of knowledge are deeply interwoven and this interweaving appears, to a large extent, at lexical and discursive levels” (Gajo 2007: 566).

According to Snow, Met & Genesee (1989: 205), one can differentiate between **content-obligatory** language and **content-compatible** language. The former refers to “linguistic knowledge necessary to the communication of subject knowledge” (Gajo 2007: 570) and “learning the content” (Coyle, Hood & Marsh 2010: 36), while the latter refers to language that “supports the content of a lesson, as well as the linguistic cultural objectives of the curriculum” (Coyle et al. 2010: 36). The educational context in which [this] crucial status of language is usually taken for granted by the teachers involved is CLIL (as mentioned in the introduction of this chapter), especially since “all

learning activities proceed in a language that is neither the learner's nor usually the teacher's main language or L1." (Dalton-Puffer et al. 2018: 6).

The Language Triptych constructed by Coyle, Hood & Marsh (2010) provides a conceptual representation of these interdependencies:

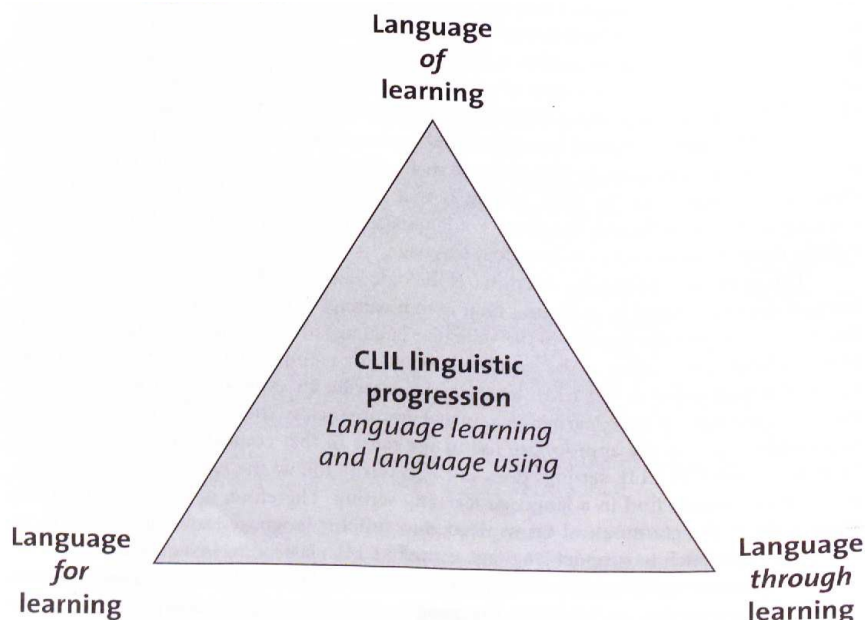


Illustration 6: The Language Triptych (Coyle, Hood & Marsh 2010: 36)

Language of learning essentially means that it is necessary to determine what kind of language knowledge or skills are necessary for the learners to adequately deal with certain content or a certain topic (ibid. 37). **Language for learning** can be understood as the general language ability needed to “operate in a foreign language environment” and to understand and use the language effectively to facilitate the learning process (ibid. 37). This, I would argue, is also true for L1 environments.

Developing a repertoire of speech acts which relate to the content, such as describing, evaluating and drawing conclusions, is essential for tasks to be carried out effectively. Strategies for enabling learners to discuss, debate [...] and use the CLIL language independently will have to be transparent in both planning (teaching and the learning process. (ibid. 36)

Finally, **Language through learning** can be described as the language acquisition as a result of the learning and meaning-making process that requires new language (Martin del Pozo 2017: 144). This is crucial because “effective learning cannot take place without active involvement of language and thinking” (Coyle, Hood & Marsh 2010: 37). To sum up, language, cognition and learning have a strong bond and

inevitably depend on each other for the construction of meaning and knowledge as well as the subsequent application in form of competences.

An additional influential theory in relation to language learning and educational success comes from Cummins (1980), who tried to find an explanation for “the discrepancy between L2 students’ apparent proficiency in the language and their frequent lack of educational success.” (Dalton-Puffer 2013: 225). Based on Oller’s (1979) theory of global language proficiency, Cummins concluded that a one-dimensional look at all the aspects of language performance is insufficient (Cummins 2008: 72). A 6-year old and a 12-year old might, for example, have similar phonological abilities and are both able to express themselves fluently, but considerable differences exist in terms of ability to write, read and lexical repertoire (ibid. 72). Instances like these have lead Cummins to differentiate between BICS and CALP. Basic interpersonal communicative skills (BICS) refer to interpersonal competence including oral fluency and accent for everyday purposes, while cognitive academic language proficiency is concerned with developing literacy skills in both L1 and L2 (Cummins 1980: 177). Cummins (1980) point is that in a school or and academic setting, CALP is necessary for the ability of students to “understand and express [...] concepts and ideas that are relevant to success in school” (Cummins 2008: 71). This especially counts for L2 proficiency as CALPs in L1 and L2 are essentially “manifestations of the same underlying dimension.” (Cummins 1980: 175). The following figure illustrates the connection mentioned above:

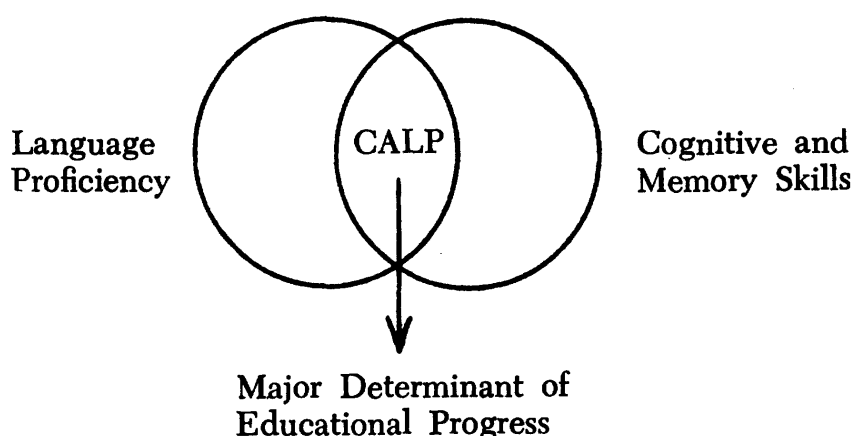


Illustration 7: CALP, Language Proficiency, Cognition & Education (Cummins 1980: 178)

Concerning the pedagogical implications, the distinction between BICS and CALP shows that there is a difference between everyday and academic use of language [informal/basic communication vs. formal/academic communication] and which language competences ought to be facilitated in the context of schooling to ensure educational and academic success (Martin del Pozo 2016: 146).

Taking the bond of language, cognition and learning into account, Dalton-Puffer (2013) has provided an overarching framework for integration of content and language relevant in supposedly every kind of teaching and learning context, but with special implications regarding CLIL. This construct is called, as the title of this chapter indicates, Cognitive Discourse Functions (CDFs). It is transdisciplinary in terms of foregrounding language and its functions in learning and the process of acquiring competences by linking “subject-specific cognitive learning goals with the linguistic representations they receive in classroom interaction.” (Dalton-Puffer 2016: 30). All the above-mentioned theoretical foundations are relevant for the understanding of the purpose of the construct, but for a clearer picture of its origin, it is necessary to take a closer look at the relevance of thinking skills for general educational objectives because for furthering our understanding of integrating content and language, the convergences “in the curricular goals of second/foreign language education and subject-specific education(s)” need to be elaborated (Dalton-Puffer 2013: 219).

4.2. History of the CDFs in education

Nowadays it is commonly acknowledged that communicative interaction in school settings “is the chief locus of knowledge construction and subjects are ‘talked into being’” (Dalton-Puffer 2016: 29). Therefore, to say it in the words of Byrnes (2005: 280), “the existence and stability of content separate from language is an illusion”. While Cummins (1980) dichotomy of BICS and CALP has arguably had great influence on curriculum development with the goal of supporting literacy (Breeze & Dafouz 2017: 82) and showing that overall educational success is strongly tied to CALP, Bloom’s *Taxonomy of education objectives* (1956, 1972) probably had the biggest influence on developing curricula that take general, cognitive learning objectives of non-language subjects into account. In my understanding, competency-based curricula such as the ones used in Austria also follow this approach as they formulate their objectives in can-do statements. The purpose of the taxonomy was to develop “a purely descriptive scheme in which every kind of [educational] goal could be represented in a relatively

neutral way” (Furst 1981: 441) and included six distinguished types of educational objectives. Those objectives were *knowledge, comprehension, application, analysis, synthesis* and *evaluation* set up in a hierarchical order starting with low complexity up to high complexity representing a progressive sequence of learning processes (Ramirez 2017: 146-147). Ramirez (2017) provides a comprehensive summary of the objectives and their underlying thinking skills:

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
	Lower levels of thinking			→	Higher levels of thinking	
Skills	Recall	Understand	Use in a new but similar situation	Deconstruct	Create	Critically
	Name	Explain		Explore	Generate	examine
	Recognize	Paraphrase		relationships	Design	Make
	Identify	Summarize		Parse data	Formulate	informed
		Give examples				judgment

Table 4: Bloom’s educational objectives summarized (Ramirez 2017: 147)

As we will see later on, some of the thinking skills mentioned by Bloom (1956) correlate with the CDFs proposed by Dalton-Puffer (2013). However, Blooms taxonomy was later revised by Anderson et al. (2001) and Krathwohl (2002), giving the taxonomy a two-dimensional form by splitting it up into the dimension of knowledge and cognitive processes (Dalton-Puffer 2013: 221). Thereby, a horizontal order is highlighted rather than a hierarchical one (ibid. 221):

Knowledge Dimensions	Cognitive Processes					
	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
<i>Factual</i>						
<i>Conceptual</i>						
<i>Procedural</i>						
<i>Metacognitive</i>						

Table 5: Revised taxonomy of cognitive objectives (Anderson et al. 2001, adapted by Dalton-Puffer 2013: 221)

The knowledge dimension in relation to multilingual education like immersion or CLIL often emphasizes subject specific vocabulary, “knowing the right words and being able to name the facts and concepts which are central to the subject in question.” (Dalton-Puffer 2013: 222). With regards to the taxonomy, what seems to be missing in multilingual education “is the dimension of understanding and actively doing something with that knowledge, i.e most of the cognitive process dimension” (ibid. 222). As discussed in the previous section, language, cognition, communication and learning form an interdependent structure and this is where CDFs come into play as they synthesise Cummins’, Bloom’s and Anderson & Kratwohl’s ideas by highlighting the functional aspect of language in communication, interaction and subsequently knowledge acquisition, transmission and creation. Integration of content and language occurs “by linking up subject specific cognitive learning goals with the linguistic representations they receive in the classroom interaction.” (Dalton-Puffer 2013: 220). “We build, restructure and transfer knowledge in interaction by allowing exchanges in the form of discussions, debates, or even disputes between the producers of knowledge and between users of knowledge” (Reitbauer et al. 2018: 94) using “patterns and schemata of a discursive, lexical and grammatical nature” (Dalton-Puffer 2016: 31).

Under a social and contextual theory of language and learning we must assume that these verbal actions of representing knowledge, showing epistemological stance, or modeling cognitive strategies are constitutive of learning itself and represent what has variously been called academic language (Dalton-Puffer 2013: 220).

Gradually approaching the construct of CDFs, it is necessary to mention the works of Austin (1962) and Searle (1969) at this point, who were forerunners in “mapping of words onto action and action onto words” (Dalton-Puffer 2016:31). The basic premise of their so-called *speech act theory* is that every speech act has an “illocutionary force and propositional content” (Hanks 2018: 1). In other words, “linguistic utterances constitute actions” (Dalton-Puffer 2016: 31). With regards to CDFs, this of course means to “externalise cognitive processes” (Dalton Puffer 2016: 32). Numerous scholars have attempted to grasp this functionality of language in form of a framework. Kidd (1996) for example differentiated between micro- and macro-functions of academic language based on the former usually being tied to certain language patterns or discourse markers while the latter require a more general use of language.

Nevertheless, macro-functions also tend to occur together with grammatical and syntactical features more or less specific to them (Kidd 1996: 298). Looking at the European context, Biggs and Tang (2011) created a hierarchically structured framework for the tertiary education sector to show the connection between verbs and their underlying or intended learning objectives. As Dalton-Puffer (2013: 223) points out, the same counts for the work of Bailey and collaborators in the USA (e.g. Bailey & Butler 2003) who were trying to determine which academic language requirements are necessary for high-school students based on curricular documents of content subjects (sciences) (Dalton-Puffer 2013: 222). Other subject-specific studies in this regard were conducted by Vollmer & Thürmann (2010) and Thürmann & Vollmer (2013), the second and third notably referred to as “a milestone in making visible the ‘hidden language curriculum’ in the content subjects (Dalton-Puffer 2016: 31).

4.3. Definition of CDFs

All the above-mentioned studies and investigations serve as an example for the research undertaken in the field of academic language functions and educational objectives. Based on these and numerous others, (e.g. Bailey & Butler 2003; Dalton-Puffer 2007), Dalton-Puffer (2013, 2016) identified 54 distinct verbs representing students’ communicative intentions in terms of cognitive processes, almost all of which “can be subsumed under seven basic communicative intentions, thus producing seven basic types of CDFs” (Dalton-Puffer 2016: 32). Those types are CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT. As I have pointed out at the beginning of this chapter, integration is crucial for the CLIL context, and Dalton-Puffer (2013: 216) proposes that these CDFs form a “zone of convergence between content and language pedagogies”. The nature of these discourse functions is characterized by transferability from one cognitive-linguistic context to another and they are therefore fundamental for education. This is because these “discursive, lexical and grammatical schemata” stem from educational routines aimed at acquiring “specialist knowledge” and therefore form the basis of “spoken and written subject literacy” (Dalton-Puffer et al. 2018: 7). The following table shows the connection between the seven types (verbs) and their underlying communicative intentions, along with alternative performative verbs and realizations for each type as “their meanings are not unitary and stable but networks which are activated differently in different contexts” (Dalton-Puffer 2013: 235):

underlying basic communicative intention	CDF TYPE	performative verbs
I tell you how we can cut up the world according to certain ideas	CLASSIFY	<i>classify, compare, contrast, match, structure, categorize, subsume</i>
I tell you about the extension of this object of specialist knowledge	DEFINE	<i>define, identify, characterize</i>
I tell you details of what I can see (also metaphorically)	DESCRIBE	<i>describe, label, identify, name, specify</i>
I tell you what my position is vis a vis X	EVALUATE	<i>evaluate, judge, argue, justify, take a stance, critique, comment, reflect</i>
I tell you about the causes or motives of X	EXPLAIN	<i>explain, reason, express cause/effect, draw conclusions, deduce</i>
I tell you something that is potential (i.e. non-factual)	EXPLORE	<i>explore, hypothesize, speculate, predict, guess, estimate, simulate</i>
I tell you something external to our immediate context on which I have a legitimate knowledge claim	REPORT	<i>report, inform, recount, narrate, present, summarize, relate</i>

Table 6: The Cognitive Discourse Functions (Dalton-Puffer et al. 2018: 9)

What needs to be clarified concerning this construct is that internally, the structure of the 7 function types is rather complex and the boundaries between them are blurry and “they frequently *include* each other” [original emphasis] (Dalton-Puffer 2016: 33). This, however, is intentional due to the transdisciplinary character the construct is supposed to embody, which requires some degree of flexibility and variability depending on the subject it is applied to (Dalton-Puffer 2013: 232). Dalton-Puffer et al. (2018) provide a comprehensive summary of what the construct entails:

[T]he construct captures verbalizations linked to cognitive processes that are routinely performed in the course of dealing with curricular content while working towards curricular goals in formal education. As these cognitive processes are not directly observable, verbalizations are taken to be the only accessible analogues of thought. In the context of learning group characteristics of formal education, such verbalizations of thought often are not simply reflections of individual thought-processes but are acts of communication at the same time. They are, in fact, the backbone of knowledge construction within the learning group (ibid. 9).

The purpose of the construct was essentially to guide and support research and actual implementation of content and language integration in multilingual education by shedding light on how “disciplinary thought processes are handled in classroom talk” (Dalton-Puffer 2013: 232). How exactly the relation between the types and their verbal

realizations can be defined is still up for debate and requires empirical research in a multitude of subjects. This thesis intends to provide some empirical validation on the realization of CDFs in CLIL PUP lessons. Therefore, it is necessary to have a detailed, individual look at the 7 types of CDFs, which will be done in the forthcoming sections of this chapter. What is worth mentioning is that the CDF construct does not propose a hierarchical order of its types.

4.4. Introducing the CDF types

4.4.1. Classify

CLASSIFY is a core CDF since the underlying cognitive activity is crucial for constructing knowledge and developing subject-specific expertise (Dalton-Puffer 2016: 34). This is because knowledge about classifications and categories is not merely concerned with terms and facts, but with the connections that can be made between them (ibid. 34). According to Anderson et al. (2001: 68), CLASSIFY is part of the cognitive process dimension subsumed in the category of *understand*, which is “the largest category of transfer-based educational objectives in schools (ibid. 2001: 70). Understanding occurs when connections between new and prior knowledge are made and integration in “existing schemas and cognitive frameworks” occurs (ibid. 70). This CDF is concerned with the cognitive process of “detecting relevant features or patterns that ‘fit’ both the specific instance and the concept or principle” (Dalton-Puffer 2016: 34). Thus, the cognitive activity is found in the requirement for students to link the specific instances with their conceptual framework. CLASSIFYING essentially means: “I tell you how we can cut up the world according to certain ideas” (ibid. 32), gradually moving from the specific to the more abstract (ibid. 34). This process of structuring and organizing may of course also include comparing and contrasting to a certain degree and might also be realized in terms of categorizing and subsuming (Anderson et al. 2001: 72). Oral or written performances of CLASSIFY can also be found in comparing, contrasting and matching (Dalton-Puffer et al. 2018: 9), due to the structuring and organizing nature of this CDF. In Anderson et al. revised Taxonomy (2001: 67), these terms are also subsumed in the category of *understand*. Nevertheless, Dalton-Puffer (2013: 240) points out that CLASSIFYING is “rarely pushed beyond the context-embedded comfort zone of the here-and-now”. Still, concerning philosophy and psychology education, this CDF might come in handy when *matching* experiments with their

experimenters or when *comparing* and *contrasting* philosophical ideas such as materialism and idealism.

4.4.2. Define

Like CLASSIFY, DEFINE can be considered a key CDF as the ability to define is crucial across all academic discourses due to the requirement of pinning down what a certain subject or field of investigation includes and deals with (Dalton-Puffer 2013: 36). It also includes “how field-specific knowledge objects are circumscribed and related to each other”, thus being closely related to CLASSIFY in terms of pointing out “some kind of class membership” (ibid. 36). Andersons et al. revised taxonomy does not mention DEFINE as an educational objective at all, which is surprising since Dalton-Puffer (2016: 36) mentions it as one of the “best-described academic function[s]”. Dalton-Puffer (2016: 34) states that the typical features of definitions include “something to be defined (the *definiendum*) which is linked to a superordinate term or class (the *definies*), followed by the specific differences that hold for the *definiendum*.” [original emphasis]. These differences are usually expressed as “adjectives, relative clauses or reduced relatives” and may be “descriptive, comparative, functional, historical or any combination of these” (ibid. 36). It is noteworthy that definitions might vary in length depending on mode in which they are expressed, such as speaking or writing. In writing, one might come across a variety of sizes (Trimble 1985: 75, qtd. in Dalton-Puffer 2016: 36), while in spoken classroom interaction, longer stretches of speech might be needed to come to a definition (Dalton-Puffer 2016: 36). In terms of a definition for the underlying communicative intention of DEFINE, Dalton-Puffer et al. (2018: 9) state the following: “I tell you about the extension of this object of specialist knowledge”. Further verbal realizations mentioned by Dalton-Puffer (2016: 36) are *identifying* and *characterizing*.

4.4.3. Describe

Once again, the CDF DESCRIBE (just like DEFINE) did not seem to garner the interest of Bloom (1956) and Anderson et al. (2001) in their taxonomies. This is again surprising considering that DESCRIBING “is of high relevance to a large range of disciplines from literature to chemistry to mathematics” (Dalton-Puffer 2016: 38). Its importance in terms of thinking skills and academic language is also highlighted

by Bailey et al. (2002, qtd. in Dalton-Puffer 2013: 239) who identified it as a crucial function in classroom talk during the mainstream science classes they investigated. DESCRIBING is an activity that requires the learners to present their account of “observable features, qualities of external or sometimes internal characteristics of something” that can either be “a given object, entity, person, situation, event or process.” (Dalton-Puffer 2016: 38). Describing internal characteristics or processes might be especially relevant for philosophy and psychology education when dealing with topics like epistemology, perception and/or memory and learning. As Dalton-Puffer (2016: 38) points out, “it is actually mostly in science and technology that a closer examination of *descriptions* [original emphasis] has been conducted to identify their generic features”. This resulted in the following three types of descriptions (Dalton-Puffer 2016: 38):

- (a) physical description: material and outward characteristics;
- (b) functional description: purpose of a device or institution and how their parts cohere;
- (c) process descriptions: series of steps, procedures and their purpose.

However, due to the variety of academic disciplines and subjects that make use of descriptions, their actual realization might differ in relation to the context. In biology lessons for example, students might be required to give physical descriptions of objects like certain organs, bones or body parts in general, while psychology (as we will see in the empirical part of this thesis) might make use of process descriptions of certain psychological experiments. In summary, DESCRIBE can be defined as: “I tell you details of what I can see (also metaphorically)” (Dalton-Puffer et al. 2018: 9). Other performative verbs representing this CDF are *label*, *identify*, *name* and *specify* (ibid. 9).

4.4.4. Evaluate

EVALUATE is a CDF type that has hardly been subject to research concerning “languages for specific purposes” (Dalton-Puffer 2016: 41), but has a prominent position in the taxonomy of Bloom (1956) and its revised version by Anderson et al. (2001). In fact, it forms its own category at the complex end of the dimension of Cognitive Processes with checking and critiquing being subordinate skills (Krathwohl

2002: 215). In terms of a definition, Anderson et al. (2001: 83) state that it amounts to “making judgements based on criteria and standards.”. The CD gives a somewhat similar but equally scarce definition: “to form an idea of the worth of” (Cambridge Dictionary). Put differently and taking the communicative intention into account, “I am going to tell you my personal stance towards this [as] I have reason for this position based on evidence, my previous knowledge and values” (Dalton-Puffer 2016: 41), might be a more suitable description. EVALUATE includes the word ‘value’, which can either be quantitatively or qualitatively assessed and necessarily requires a suitable reference system (ibid. 42). By qualitative assessment Dalton-Puffer (2016: 42) refers to the field of moral judgements, thereby extending the original scope of the function. In summary, Dalton-Puffer’s (2016: 42) definition of this CDF goes as follows:

EVALUATE thus subsumes what is rational academic procedures/discourse must be part of an evaluation and is required to be explicitly expressed, namely the evidence, criteria, standards or reasons which support the evaluation that is being made.

I would argue that this CDF is of high importance in philosophy and psychology lessons due to the emphasis on discursive and differentiated thinking (diskursives und differenziertes Denken), which is also reflected in competency model designed by Lahmer (2011):

- komplexe Sachverhalte anhand von (Gedanken-)Experimenten diskutieren und bewerten (Lahmer 2011: 6) [discussing and evaluating complex issues based on (thought-)experiments]
- begründet argumentieren und differenziert urteilen (ibid. 7) [arguing with reason and making sophisticated judgments]
- Moralisch verbindliche Grundpositionen kennen und begründet moralische Urteile fällen (ibid. 7) [knowing basic and morally binding stances and making reasoned moral judgements]

A more detailed analysis of overlaps between CDFs and competences will be conducted in chapter 6. To mention other verbal realizations, this CDF type also includes *judge*, *argue*, *justify*, *take a stance*, *critique*, *recommend*, *comment*, *reflect* and *appreciate* (Dalton-Puffer et al. 2018: 9). Now, we will continue with the CDF EXPLAIN.

4.4.5. Explain

As Dalton-Puffer (2016: 44) points out, EXPLAIN is likely the most diverse CDF type including a high complexity. This makes explanations sort of “elusive” in terms of finding a suitable definition (Dalton-Puffer 2007: 139) According to Anderson et al. (2001: 67), EXPLAINING means to construct “a cause-and-effect model of a system”, which is arguably subject to the condition that thorough comprehension has taken place. Since comprehension requires a great deal of cognitive work, the authors placed it in the category of understanding in the dimension of Cognitive Processes (ibid. 67). The CDF type EXPLAIN is defined by Dalton-Puffer (2007: 140). Explanations should always fulfill the function of solving a comprehension problem on the side of the addressee of the explanation and are therefore oriented towards the interactant (Dalton-Puffer 2007: 140). In other words, it could mean “telling you what you don’t know” or “telling you what I know” (Dalton-Puffer 2007: 140). These intentions, however, need to be distinguished, but what they have in common is that they both refer to certain object (explanandum) (Dalton-Puffer 2007: 141). Based on this she identified three stages of an explanation (ibid. 141):

- a) proper identification of the object (explanandum) and distribution of roles S1 and S2. The identification is reminiscent of definition in its orientation towards the explanandum / definiendum.
- b) a recursive explaining text which orients towards S2,
- c) sanctioning the explanation

“[T]he basic communicative intention of this category is ‘I will give you reasons and tell you the cause/s of X’” answering the question ‘why?’ something is the way it is (ibid 44). It is also worth noting that, while in most classroom interaction it might be enough for the students to use triggers like subject-specific terms to elicit conceptual or schematic relations in the teacher, a proper explanation usually means making the relation of those terms and triggers explicit (Dalton-Puffer 2007: 142). Nevertheless, concerning the recorded PUP lessons I would like to loosen these restrictions a little bit for my empirical research. Further verbal realizations include *reason*, *draw conclusions* and *deduce* (Dalton-Puffer et al. 2018: 9).

4.4.6. Explore

Dalton-Puffer mentions the academic language functions of *hypothesizing* and *predicting*, which are closely related to the CDF EXPLORE and are therefore also mentioned as performative verbs of this CDF type (Dalton-Puffer et al. 2018: 9). These two verbs can also be found in the revised taxonomy of thinking skills by Anderson et al. (2001). *Hypothesizing* belongs to a subcategory of 'Create' (Generating) and is defined as "[c]oming up with alternative hypotheses based on criteria (e.g., Generate hypotheses to account for an observed phenomenon)" and can be found around the highest-order thinking skills (ibid 68)¹⁰. *Predicting* on the other hand belongs to a subcategory of 'Understand' (Inferring) and means "[d]rawing a logical conclusion from presented information" (ibid. 67). Dalton-Puffer (2016: 46) gives a slightly different definition of these verbs by stating that *predicting* involves foretelling "on the basis of reasoning or knowledge" and *hypothesizing* amounts to "to state a proposition merely as a basis for reasoning or argument, that is, without conclusive evidence". However, all the above definitions seem rather narrow and do not satisfy the full scope of EXLPLORE, hence, they are subsumed by it. As a result, Dalton-Puffer (2016: 47) defines EXPLORE as saying something about something that is not currently the case, about something that might be, or about something that might have been, always with a connection to "perceived factual reality". Due to that, the lexico-grammar to voice this kind of CDF is rather complicated often involving modal (ad)verbs and conditionals (ibid: 47). In relation to PUP education, EXPLORE might have a crucial role. Concerning Philosophy, Tompkins (2019: 55) mentions that "what Philosophy tries to do is to see the complexity of a problem, not just with the superfluous, but to fully delve into the problem and propose solutions [...], this is creative thinking" For Psychology, the competency model by Lahmer (2011: 8) for example mentions "ein Gedankenexperiment durchführen (sich vorstellen....; so, als ob....) [conducting a thought experiment (imagining....; pretending as if....)]". These objectives arguably fit very well with Dalton-Puffers' definition mentioned above.

To conclude, other members also belonging to this CDF type are *speculate*, *guess*, *estimate*, *simulate* and *take other perspectives* (Dalton-Puffer et al. 2018: 9), although the semantic relation might not be as strong as with *hypothesizing* and *predicting*.

¹⁰ Also see Kidd 1996.

4.4.7. Report

REPORT can be understood as informing about the ‘what, when, who, to whom, circumstances’ of a certain occurrence and includes synonyms like *recount*, *relate*, *narrate*, *present*, *summarize*, *give an account of*, that all share the following characteristics [original emphasis] (Dalton-Puffer 2016: 49):

- The illocutionary function ‘inform’ [...].
- Assume a reduced shared background knowledge of speaker and recipient.
- Foreground the referential function of language.

Thus, the communicative goal of this CDF can be defined as “‘I tell you about something external to our immediate context on which I have a legitimate knowledge claim’.” (ibid: 49). In Anderson’s et al. (2001) revised taxonomy of thinking skills, *summarizing* is explicitly mentioned, albeit at the lower end of the hierarchy. This hierarchical structure, however, is only used in the taxonomy and does not apply to the CDF-construct. The reason why Dalton-Puffer (2016: 49) chose to use the label REPORT instead, is because the selection of paramount information counts for all forms of *reporting*. As far as usage of *reporting* in the classroom is concerned, evidence indicates that it mostly occurs towards the end of lessons in form of *presenting* the results of group work, but it might also be showcased in longer, individually prepared, spoken presentations about a topic relevant to the subject (ibid: 49). In terms of *presenting* results, Lahmer (2011: 6) identifies “Ergebnisse strukturieren und präsentieren (Präsentation, Medieneinsatz)” as a crucial aspect of “Dekonstruktivistische (methodische) Kompetenz” for PUP education. Furthermore, REPORT can take the form of teacher monologues, although this does not happen too often (ibid: 51). In Psychology & Philosophy it might have certain significance though, considering that it is useful for the learners to hear about the socio-cultural and historical circumstances that lead to certain experiments (e.g. Milgram Experiment) or philosophical ideas (e.g. Plato’s Politeia).

5. Combining EFL and PUP education – competences and CDFs

In the Austrian educational context, Philosophy & Psychology are considered as one subject in upper secondary schools. Hence the acronym PUP (Philosophie und Psychologie), which hints at the presumed inseparability. As a result, PUP is normally taught for two lessons on a weekly basis since 1929, forming one subject (Geiß 2016: 229). Separately, Philosophy had been taught in Austrian upper secondary schools since 1849 (Schönberg 1983: 8), until the previously mentioned merger. Concerning the general compatibility of PUP and CLIL, we can find suitable objectives and intended educational goals (competences) mentioned in the curriculum. As the curriculum states, “[e]rworbene Kompetenzen in Psychologie und Philosophie sind im Sinne einer ganzheitlichen Bildung auch außerhalb des schulischen Kontexts von nachhaltiger Bedeutung“ (Lehrplan AHS Psychologie und Philosophie 2018: 1). Furthermore, the curriculum emphasizes interdisciplinary teaching and learning due to its inherent diversity of contents, topics and methods (ibid: 1). This entails that every aspect of PUP education is supposed to contribute to fostering “sprachliche und kommunikative Prozesse” (ibid: 1). Also, PUP students are supposed to deal with the following aspects:

Gesprächsformen üben, Gesprächsfähigkeit vertiefen, konstruktives Feedback geben, [...] begriffliche Genauigkeit anwenden und argumentative Begründungen erarbeiten. [...]. Die Schülerinnen und Schüler werden zu einer kritischen Auseinandersetzung mit den Möglichkeiten verschiedener Medien angeregt und lernen, Daten zu selektieren und zu interpretieren. Durch weltweite Kommunikation und Kooperation werden interkulturelles Denken und Handeln gefördert. (ibid: 1).

Given the curricular priorities of fostering linguistic and communicative processes embedded within overarching goals interdisciplinary teaching and learning and intercultural thinking in general, PUP seems to be an ideal CLIL subject.

Now, like all curricula in the Austrian educational system, the curriculum for PUP is competency-oriented. As Lahmer (2011: 1) points out, the curricular orientation towards competences is in fact nothing new, as it has been a core aspect within Austrian educational legislations for a long time. However, the competency orientation became an explicit guiding principle for the development of subject specific curricula as part of the “Oberstufenreform 2004 und durch die Reform der Reifeprüfung von 2010” (Geiß 2016: 229). This of course also included the curriculum for PUP. Since

one of the objectives of this thesis is to determine whether the CDF-Construct can help to build a bridge between PUP education and language learning within the context of CLIL, it is necessary to have a closer look at what is meant by competences in the context of PUP.

5.1. What are competences?

In general, there are two different conceptions of what is meant by competence. In linguistic research, based on the ideas of linguist Naom Chomsky, competence is defined as a system comprising knowledge and personal assumptions in which cognitive processes that presumably form the foundation for concrete behavior are emphasized (Duske 2017: 63). However, in differential psychology and educational sciences, a different definition is used. Especially in German-speaking countries, curricular competency models are based on Weinert's definition of competence (Lahmer 2015: 82):

Kompetenzen sind die bei Individuen verfügbaren oder durch sie erlernbaren kognitiven Fähigkeiten und Fertigkeiten, um bestimmte Probleme zu lösen, sowie die damit verbundenen motivationalen, volitionalen und sozialen Bereitschaften und Fähigkeiten, die Problemlösungen in variablen Situationen erfolgreich und verantwortungsvoll nutzen zu können (Weinert 2001: 27-28, qtd. in Duske 2017: 63).

More comprehensibly summarized by Lahmer (2011: 3) with additional reference to Rösch's (2009) competency model for Philosophy and Ethics as well as Pfister's (2010) ideas on Philosophy didactics, the following points regarding competences can be highlighted:

- Kompetenzen beschreiben einen nach längerer Lernzeit erreichten Ist-Zustand als das, was nach längerer Lernzeit bleiben soll. [Competences describe an as-is state after an extensive learning period as something that is supposed to remain after that learning period].
- Kompetenzen definieren zentrale Fähigkeiten und Fertigkeiten, die in einem Fach erworben werden können/sollen. [Competences define focal abilities and skills that can/are supposed to be acquired in a certain subject].
- Nur in der Auseinandersetzung mit konkreten Inhalten können Kompetenzen erworben werden. Inhalte haben eine Zubringerfunktion, um sich Kompetenzen

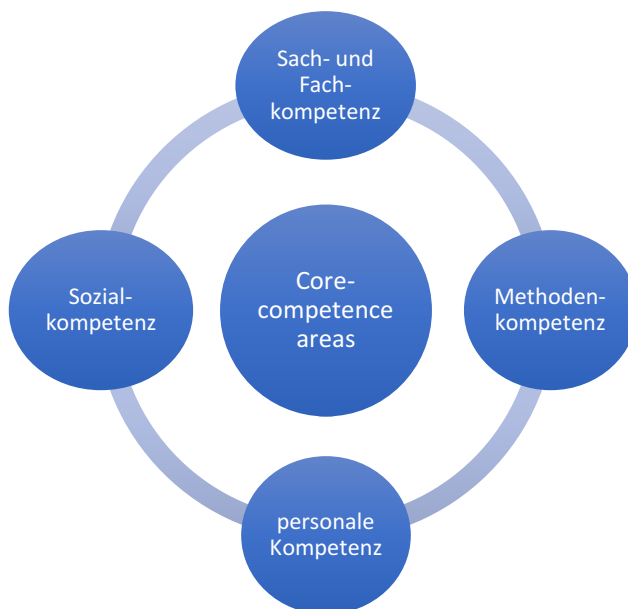
anzueignen. [Competences can only be acquired while dealing with concrete content. Subject contents have the function of bringing across those competences, so that students can acquire them].

- Um zum Handeln fähig zu sein, muss ein Individuum jene Kompetenzen erwerben, die zum Meistern einer komplexen Situation erforderlich sind. Dies setzt neben Fachwissen auch Vertrauen in die eigene Person und metakognitive Fähigkeiten voraus – man muss sich seiner Kompetenzen bewusst sein. [For independent actions, an individual needs to acquire the competences needed to master complex situations. Next to subject specific knowledge, this requires self-confidence and metacognitive abilities – one needs to be aware of their own competences].

Furthermore, in addition to providing a framework for didactic principles, material selection and educational goals, competency-oriented curricula and competency models were also developed to enable testing according to nationally defined educational standards, for mediation of cognitive abilities (Geiß 2016: 48), which are arguably necessary in any kind of educational context (see chapters 4.1.1. & 4.1.2.). Now that we have established a very general understanding of what competence means and why they are considered important in modern education, it is time to look at specific competences to be fostered in Psychology and Philosophy. After all, if the CDF-Construct is supposed to function as a bridge between EFL and PUP education, it needs to be established which subject specific objectives the teachers follow. Therefore, we need to take a closer look at the competency model underlying the Austrian PUP curriculum.

5.2. The competency model underlying the PUP curriculum

First and foremost, it needs to be clarified that competency-oriented teaching within the subject of PUP was met with skepticism from the side of the teachers and subject specific experts, which is reflected within the competency-oriented curriculum introduced in 2004 (Geiß 2016: 44). As mentioned in at the beginning of chapter 5, Psychology and Philosophy are treated as one subject, which is why an integrative competency model was developed. The guidelines for competency-oriented PUP teaching and testing provided by the BMBF (2015: 11) initially identifies four core competency areas:



Sach- u. Fachkompetenz:

e.g.: „erworbenes Wissen anwenden können“

Methodenkompetenz:

e.g.: „Informationen in ihrem Kontext bewerten und sachgerecht aufarbeiten; Ergebnisse einer Recherche auswerten/interpretieren“

personale Kompetenz:

e.g.: „sich in verschiedene soziale Rollen hineinversetzen“

Sozialkompetenz:

e.g.: „sich an vereinbarte Regeln halten“

Illustration 8: Core-competence areas PUP

Arguably, most of those competences could be considered very general and their presence is difficult to test (Geiß 2013: 4). Within the competency model provided in these guidelines (BMBF 2015: 11), an additional four subject specific competency areas are presented:

- 1) ***Wahrnehmen und Verstehen***
- 2) ***Analysieren und Reflektieren***
- 3) ***Argumentieren und Urteilen***
- 4) ***Sich-Orientieren und Handeln***

In turn, these consist of eleven basic competences that have another twenty-six sub-competences (BMBF 2015: 14). At this point it is important to mention that PUP employs a rather open competency model and is guided by an emphasis on exemplified teaching and learning (Lahmer 2011: 2), which essentially means that teachers are supposed to provide materials and topics that function as examples for an overarching theory or concept, so that the students can actively deal with them and apply their knowledge. This goes hand in hand with the call for “Handlungsorientierte Methodenvielfalt” [activity-oriented diversity of learning methods], which means that students should be guided and supported in the process of self-directed learning (BMBF 2015: 12).

Since it is not very extensive, I would like to present the entire competency model as proposed by the BMBF for illustration. The main competency areas are highlighted in green and bold print, the basic competences in grey and italics, and the sub-competences in white:

Wahrnehmen und Verstehen
➤ <i>Phänomenologische Kompetenz: eigene Bewusstseinszustände mitteilen</i>
Über ein exemplarisches Wissen verfügen und dieses anwenden
Die Komplexität von Wahrnehmungen und Erkennen differenziert beschreiben
➤ <i>Perspektivenübernahme: sich auf Beweggründe und Ziele einlassen</i>
Sich in Situationen anderer versetzen und ihre Gefühle und Entscheidungen nachvollziehen
Kommunikative Fähigkeiten im Umgang mit Menschen entwickeln
Erklärungsansätze zum menschlichen Verhalten aus unterschiedlichen Perspektiven beleuchten
Analysieren und Reflektieren
➤ <i>Sprach- und Textanalyse: Phänomene begrifflich exakt beschreiben</i>
Fachspezifische Terminologie verstehen, analysieren und verwenden
Eine Sensibilität in Bezug auf alltagssprachliche Begriffe entwickeln
Texte fachspezifisch analysieren, interpretieren und verfassen (hermeneutische Kompetenz)
Wissenschaftliche Gedanken und Argumente schriftlich fixieren
➤ <i>Interdisziplinäre (fächerübergreifende Aspekte):</i>

Verknüpfung zwischen Psychologie, Pädagogik und Philosophie herstellen
Wissen aus verschiedenen Fachgebieten reflektiert miteinander verbinden
➤ <i>Dekonstruktivistische Kompetenz: mit vorgegebenen Materialien kreativ umgehen</i>
Differenzen aufdecken und weiterdenken
Neuartiges kreieren; Ergebnisse strukturieren und präsentieren (Präsentation, Medieneinsatz)
Argumentieren und Urteilen
➤ <i>Diskursfähigkeit:</i>
Begründet argumentieren
Behauptungen durch Gegenpositionen in Frage stellen
➤ <i>Urteilsfähigkeit:</i>
Moralisch verbindliche Grundpositionen kennen und begründet moralische Urteile fällen
Werthaltungen in privaten, politischen und ökologischen Fragen entwickeln und begründen
Verantwortliches Handeln für die Gesellschaft reflektieren
➤ <i>Konfliktlösungskompetenz:</i>
Vernunftgeleitete Auseinandersetzungen führen
Lösungsmodelle entwickeln und Konflikte gewaltfrei lösen
Sich-Orientieren und Handeln
➤ <i>Existentielle Fragen:</i>
Eigene Stärken und Schwächen erkennen und richtig einschätzen
Reflexion über Identität und Werthaltungen als Bereicherung der Lebensqualität erkennen
➤ <i>Handlungskompetenz:</i>
Verantwortung wahrnehmen, solidarisch und tolerant handeln
Sich mit der eigenen Persönlichkeitsentwicklung vor dem Hintergrund psychologischer und philosophischer Erkenntnisse auseinandersetzen

➤ <i>Bildung:</i>
Fähigkeit zum offenen Gespräch, zur Selbsterkenntnis und Kontemplation pflegen
Eine vertiefende Auseinandersetzung mit Sinnfragen und Werthaltung entwickeln

Table 7: Competency model for PUP

In my opinion, Geiß (2016a: 232) rightfully describes this diverse accumulation of competences as “unübersichtlich und verwirrend” without any recognizable allocation to either Psychology or Philosophy. As I have already pointed out numerous times, the competency model was adapted from and is based upon lecture scripts by Lahmer (2011), who developed his (simplified) competency model based on Rösch’s (2009) competency model for Philosophy and Ethics education as well as on philosophy specific, didactic considerations by Rohbeck (2000; 2001). According to Geiß (2013: 4) Rösch’s work and consequently her competency model is founded on a “allgemeindidaktischen Verständnis” of what competence means, which makes the integration of Philosophy and Psychology in the Austrian competency model understandable (ibid: 6). However, since Rohbeck’s conceptions of philosophical competences were also implemented, one can detect a certain tendency to more philosophy-oriented competences in the model (ibid: 6). Geiß (2016b; 2017) for example, after analyzing a variety of competency-oriented didactic approaches for Philosophy and Psychology, has identified some differences between both subjects. For Psychology, he concluded the following:

Die Rekonstruktion der Psychologiedidaktikansätze machte sichtbar, dass das *Beschreiben, Erklären, Prognostizieren, Beeinflussen und Bewerten* von psychologischen Phänomenen die im Psychologieunterricht zu vermittelnde Grundkompetenz des Faches darstellt. (Geiß 2016b: 131).

For Philosophy on the other hand, the consensus concerning the basic competence that needs to be developed is a little different:

In der Philosophiedidaktik scheint der Grundkonsens darin zu liegen, dass das *Philosophieren* selbst die zu vermittelnde Grundkompetenz von philosophischen Bildungsprozessen darstellt. [...] [D]as *Wahrnehmen und Verstehen*, das *Analysieren und Kritisieren*, das *Begründen und Argumentieren*, [und] das *Entwickeln und Spekulieren [sind]* elementare philosophische Fertigkeiten (Geiß 2017: 91).

To put it in a nutshell, “[i]t doesn’t make any sense to teach Philosophy, if you don’t practice Philosophy” (Tompkins 2019: 56). Arguably, the basic competences for both subjects can be found in the competency model to some extent, but it is not clear which competences belong to which subject. However, in my opinion, the differences between the subjects do not seem to be extensive. The way I see it, every subject involves philosophizing with regards to the underlying principle of “love of wisdom” (or striving for knowledge). Interestingly, the authors of the guideline (PUP teachers and subject experts) also freely admit that not all of the competences mentioned in the model can actually be evaluated and operationalized (BMBF 2015: 12). This is not surprising given that the competences are predominantly linked to general educational objectives.

With regards to competency levels, the information in the guideline provided by the BMBF is rather scarce and given only regarding the testing format of the Matura. According to the guideline, competency-oriented means that every Matura task needs to involve aspects of **reproduction** (first level), **transfer** (second level) and **reflection & problem solving** (third level) (BMBF 2015: 16). In line with Bloom’s taxonomy of thinking skills (1956) and the revised taxonomy of thinking skills by Anderson et al. (2001), each level requires different cognitive operations and the higher the level, the more complex the thinking skills required. The operators presented and examples in the following table are mentioned in the guideline (BMBF 2015: 16). Additionally, the table is supplemented with operators for the different competency levels provided by Lahmer (2011: 8). He, however, does not specifically mention them as operators and presents them more as examples for each level of performance. Thus, I have taken the liberty to the basic (presumed) operators and added them to the table. Thereby, since the guideline is mostly concerned with competency-orientation of tasks for the final examination, we also get a glimpse at how competency levels can be practiced during regular teaching:

Competency level	Operators/objectives	Examples (for tasks)
<i>Level 1 (Reproduction)</i>	• benennen, • beschreiben, • Das Wesentliche zusammenfassen, • Sachverhalte präzise wiedergeben / definieren	- Fassen sie die wichtigsten Aspekte des Konstruktivismus zusammen. - Beschreiben Sie das Eisbergmodell von Sigmund FREUD.
<i>Level 2 (Transfer)</i>	• Zusammenhänge erklären • Sachverhalte verknüpfen und einordnen, • Materialien analysieren, • vergleichen u. unterscheiden • zuordnen • Experimente/ Beobachtungen durchführen • Sachverhalt/Inhalt visualisieren und präsentieren • Fakten übersichtlich gliedern • Recherchieren u. Zusatzinformationen einholen • Beispiele finden	- Ordnen Sie die Definitionen den jeweiligen Richtungen der Psychologie zu. - Vergleichen Sie die Hauptaussagen der beiden Texte
<i>Level 3 (Reflection & Problem solving)</i>	• Probleme erörtern, • Hypothesen entwickeln, • die eigenen Standpunkte u. Urteilsbildung reflektieren,	- Bewerten Sie die Grundaussage des Höhlengleichnisses im Vergleich zum Gedankenexperiment

• begründet diskutieren, • beurteilen, • bewerten, • interpretieren	- In welchen Punkten stimmen Sie der Argumentation von Peter SINGER zu? Welche Punkte beurteilen sie kritisch?
--	--

Table 8: PUP competency levels and operators

If we look at the operators marked in bold print, we can see an astonishing similarity with the CDFs mentioned in Dalton-Puffer's construct (2013). Even if there are no communicative intentions given, every CDF is present in the list of operators in some form. Note that some operators might overlap with more CDF types, which is understandable as there are no clear-cut boundaries between the CDF types (Dalton-Puffer 2013: 33):

CDF type	PUP Operators
Classify - (compare, contrast, exemplify, match, structure, subsume)	• Sachverhalte verknüpfen und einordnen • Vergleichen u. unterscheiden • Zuordnen • Fakten übersichtlich gliedern • Beispiele finden
Describe - (label, identify, name, specify)	• Benennen • Beschreiben
Define - (identify, characterize)	• Sachverhalte präzise wiedergeben /definieren
Report - (inform, summarize, recount, narrate, present, relate)	• Sachverhalte präzise wiedergeben / definieren • Sachverhalt/Inhalt visualisieren u. präsentieren • Das Wesentliche zusammenfassen

<i>Explain</i> - (reason, express cause/effect, deduce, draw conclusions)	• Zusammenhänge erklären • Probleme erörtern • Begründet diskutieren
<i>Evaluate</i> - (argue, judge, take a stance, critique, comment, reflect, justify)	• Beurteilen • Bewerten • Die eigenen Standpunkte u. Urteilsbildung reflektieren • Begründet diskutieren
<i>Explore</i> - (hypothesize, predict, speculate, guess, estimate, simulate)	• Experimente / Beobachtungen durchführen • Hypothesen entwickeln • Recherchieren u. Zusatzinformationen einholen

Table 9: Mapping of CDFs and PUP Operators

This mapping has yielded fruitful results concerning the compatibility of the CDF Construct and PUP education, which in turn, given the explicit intention of the CDF Construct “to create a conceptualization that would speak to subject teachers in terms that are meaningful to them from within their own subject” (Dalton-Puffer et al. 2018: 5), has meaningful implication for a successful implementation of CLIL in PUP education. Therefore, I would like to proceed in similar fashion and attempt a mapping of Dalton-Puffer’s CDFs and the PUP competences mentioned in the competency model.

5.3. Mapping CDFs and PUP competences

For this endeavor, it is necessary to take another, more detailed look at the competency model for PUP. Therefore, each of the four subject specific competences will be analyzed in terms of overlaps between CDFs and in conclusion, a table illustrating the overlaps of competences and CDFs will be presented, At this point I would like to point out that that this mapping is of rather hypothetical nature as no connection is made to competency-oriented tasks and exercise used in classroom reality. The mapping is solely based on the required language functions mentioned in

the competency model and my interpretation of how the competences reflect a CDF type in terms of presumed communicative intention involved. Explicit overlaps in wording are marked according to the color scheme that is presented in chapter 6.3. Study design and data collection & analysis.

5.3.1. Competence ‘Wahrnehmen und Verstehen’

Wahrnehmen und Verstehen	
➤ <i>Phänomenologische Kompetenz: eigene Bewusstseinszustände mitteilen</i>	
Über ein exemplarisches Wissen verfügen und dieses anwenden	
Die Komplexität von Wahrnehmungen und Erkennen differenziert beschreiben	
➤ <i>Perspektivenübernahme: sich auf Beweggründe und Ziele einlassen</i>	
Sich in Situationen anderer versetzen und ihre Gefühle und Entscheidungen nachvollziehen	
Kommunikative Fähigkeiten im Umgang mit Menschen entwickeln	
Erklärungsansätze zum menschlichen Verhalten aus unterschiedlichen Perspektiven beleuchten	

As we can see, DESCRIBE is specifically mentioned within the sub-competence ‘Phänomenologische Kompetenz’. According to Lahmer, this competence also entails “Zusammenhänge psychologischer und philosophischer Grundideen erkennen“ (2011: 5). To my understanding, this would require the students to compare and contrast the ideas and to relate them to each other. Hence, CLASSIFY and REPORT also match with this competence. Also, ‘sich in Situationen anderer versetzen’ and ‘Erklärungsansätze zum menschlichen Verhalten aus unterschiedlichen Perspektive beleuchten’ can be matched with EXPLORE, since a member of EXPLORE is to ‘take other perspectives’. This would arguably require to characterise (DEFINE) different ‘Erklärungsansätze’ “(Tiefenpsychologie, Behaviourismus, Rationalismus, Empirismus etc.)” (Lahmer 2011: 6) first, and also to EXPLAIN why these approaches came to their respective conclusions. ‘Kommunikative Fähigkeiten im Umgang mit Menschen entwickeln’ arguably includes “gesellschaftliche Entwicklungen und Probleme wahrnehmen und bewerten” (Lahmer 2011: 6) and “Werthaltungen verschiedener Weltanschauungen vergleichen” (ibid: 6). Thus, there are also overlaps between EVALUATE (and again CLASSIFY) and this competence.

5.3.2. Competence ‘Analysieren und Reflektieren’

Analysieren und Reflektieren	
➤ <i>Sprach- und Textanalyse: Phänomene begrifflich exakt beschreiben</i>	
Fachspezifische Terminologie verstehen, analysieren und verwenden	
Eine Sensibilität in Bezug auf Alltagssprachliche Begriffe entwickeln	
Texte fachspezifisch analysieren, interpretieren und verfassen (hermeneutische Kompetenz)	
Wissenschaftliche Gedanken und Argumente schriftlich fixieren	
➤ <i>Interdisziplinäre (fächerübergreifende Aspekte):</i>	
Verknüpfung zwischen Psychologie, Pädagogik und Philosophie herstellen	
Wissen aus verschiedenen Fachgebieten reflektiert miteinander verbinden	
➤ <i>Dekonstruktivistische Kompetenz: mit vorgegebenen Materialien kreativ umgehen</i>	
Differenzen aufdecken und weiterdenken	
Neuartiges kreieren; Ergebnisse strukturieren und präsentieren (Präsentation, Medieneinsatz)	

Again, DESCRIBE is mentioned explicitly. This time in relation to ‘Sprach- und Textanalyse’ and the requirement to describe Phenomena in detail. Furthermore, in order to understand subject specific terminology, it is certainly necessary to DEFINE the terms first. Moreover, to establish a connection between knowledge from different disciplines, students are required to reflect. Thus, CLASSIFY (compare & contrast) as well as EVALUATE (reflect) can be matched with this competence as well. Concerning the ‘hermeneutische Kompetenz’ mentioned in the model, Lahmer states that it includes discussing and evaluating “komplexe Sachverhalte anhand von (Gedanken-) Experimenten (2011: 6). As a result, EVALUATE is emphasized again. He also mentions that the competence ‘Analysieren und Reflektieren’ encompasses to generally reflect on psychological and philosophical problems and to use psychological and philosophical theories to think about our daily lives (ibid. 6). Furthermore, given information always needs to be evaluated in its context (ibid: 6). This reinforces the connection between this competence and the CDF type EVALUATE even more, in addition to showing that explorative elements are also included (EXPLORE). EXPLORE can also be matched with ‘Neuartiges kreieren’. In non-explicit form,

EXPLAIN also needs to be mentioned here as ‘Verknüpfungen zwischen Philosophie, Pädagogik und Philosophy herstellen’ always entails explaining how and why there are connections. Within the ‘dekonstruktivistische Kompetenz’ we can also find a relation to REPORT as students are required to structure (also CLASSIFY the results of their learning processes and to present them.

5.3.3. Competence ‘Argumentieren und Urteilen’

Argumentieren und Urteilen	
➤ <i>Diskursfähigkeit:</i>	
Begründet	argumentieren
Behauptungen durch Gegenpositionen in Frage stellen	
➤ <i>Urteilsfähigkeit:</i>	
Moralisch verbindliche Grundpositionen kennen und	begründet moralische Urteile fällen
Werthaltungen in privaten, politischen und ökologischen Fragen entwickeln und	
begründen	
Verantwortliches Handeln für die Gesellschaft	
reflektieren	
➤ <i>Konfliktlösungskompetenz:</i>	
Vernunftgeleitete Auseinandersetzungen führen	
Lösungsmodelle entwickeln und Konflikte gewaltfrei lösen	

Looking at the competence mentioned as ‘Diskursfähigkeit’ we can see that students are required to formulate justified arguments and to question certain statements with counter arguments. Lahmer (2011: 7) adds that identifying contradictions and critiquing them is also crucial. Hence, EVALUATE (argue, critique), along with DESCRIBE (identify, specify) are a good match. Also, identifying contradictions would require explaining why there are contradictions. Thus, EXPLAIN also fits here. EVALUATE and EXPLAIN are also reflected in ‘begründet moralische Urteile fällen’ and ‘Werthaltungen in privaten, politischen und ökologischen Fragen entwickeln und begründen’, since it is always necessary to give reasons for moral judgements. ‘Entwickeln’ in this context also hints at EXPLORE as developing suitable questions always includes some degree of hypothesizing which questions fit. Lahmer (2011: 7) also mentions “gesellschaftliche Probleme in ihren Ursachen und ihrer geschichtlichen

Entwicklung erfassen und diskutieren". This matches well with expressing cause and effect, which is a member of EXPLAIN in the CDF construct. Moreover, Lahmer (2011: 7) adds "ethische und politische Grundbegriffe erfassen" to this competence. For that, I would argue, defining the terminology is necessary. Hence, DEFINE is also a match regarding the competence 'Analysieren und Reflektieren'.

5.3.4. Competence 'Sich-Orientieren und Handeln'

Sich-Orientieren und Handeln
➤ <i>Existentielle Fragen:</i>
Eigene Stärken und Schwächen erkennen und richtig einschätzen
Reflexion über Identität und Werthaltungen als Bereicherung der Lebensqualität erkennen
➤ <i>Handlungskompetenz:</i>
Verantwortung wahrnehmen, solidarisch und tolerant handeln
Sich mit der eigenen Persönlichkeitsentwicklung vor dem Hintergrund psychologischer und philosophischer Erkenntnisse auseinandersetzen
➤ <i>Bildung:</i>
Fähigkeit zum offenen Gespräch, zur Selbsterkenntnis und Kontemplation pflegen
Eine vertiefende Auseinandersetzung mit Sinnfragen und Werthaltung entwickeln

This competence is probably the least subject-specific one and mostly describes general educational objectives. However, 'eigene Stärken und Schwächen erkennen und richtig einschätzen' could be matched with EVALUATE (estimate). Also, again referring to Lahmer (2011: 8), who clarifies that this competence also includes "Antworten der Psychologie und Philosophie auf die Fragen nach einem sinnerfüllten Leben kennen lernen und eigene Antworten finden", elements EXPLORE can also be matched with this competence in terms of giving accounts of something that is potential and exploring connections to situations, events and actions in our lives.

Arguably, this analysis is rather rudimentary. This, however, is also due to the fact that the competences are pretty loosely defined by the model. Nevertheless, the analysis has still shown significant overlaps between PUP competences and CDFs, making Dalton-Puffer's construct of CDFs compatible with PUP education. This in turn means

that integration of content and language in a PUP CLIL context can be facilitated by applying the construct. In summary, we get the following picture:

	Wahrnehmen und Verstehen	Analysieren und Reflektieren	Argumentieren und Urteilen	Sich- Orientieren und Handeln
CLASSIFY	✓	✓		
EVALUATE	✓	✓	✓	✓
REPORT	✓	✓		
DESCRIBE	✓	✓	✓	
DEFINE	✓	✓	✓	
EXPLORE	✓	✓	✓	✓
EXPLAIN	✓	✓	✓	

Table 10: Overview correlation between PUP competences and CDFs

6. The study – empirical research

6.1. Research questions

Now that the theoretical frameworks of CLIL, the CDF construct and PUP competences have been established, we can continue by investigating if and how the CDF construct is used in natural CLIL classroom interaction. Since PUP is not a typical CLIL subject in Austria, there is little to no existing research concerning proper integration of content and language in the subject. However, CLIL teaching projects in PUP have been carried out as practical parts of diploma theses, which yielded successful results and showed that PUP is indeed a suitable CLIL subject (Regitschnig 2009; Kikinger 2016; Gradl 2017). Yet, the intention of this study is to show PUP teachers that the implementation of CLIL does not necessarily require being a language expert and to ultimately make PUP more accessible to CLIL methodology. Thus, the main point of interest of this study is to work towards an empirical validation of the CDF Construct in PUP education. From a purely theoretical standpoint, realizations of CDFs should be manifold during lessons. In summary, the research questions can be formulated as follows:

- I. ***What is the overlap between CDFs and PUP competences?***
- II. ***Which CDFs are realized, to which extent and by whom?***
- III. ***How are the specific CDFs performed in interaction, including terms of lexico-grammar)?***

In order to provide a little guideline, questions I. has already been dealt with in chapter 5. Questions II. and III. will be dealt with in chapters 7.1. and 7.2. respectively. First, every observed lesson will be analyzed individually and then the results of each lesson will be compared and combined (quantitative research, chapter 7.1.). The discussion and qualitative analysis regarding question III. can be found in chapter 7.2. Please note that it would go beyond the scope of this thesis to provide a full account how the CDFs are performed interactionally and linguistically. Therefore, some noteworthy examples will be given for illustration.

6.2. Research context¹¹

To be able to provide an answer to those questions, a quantitative as well as qualitative empirical analysis based upon lesson observation/recordings and expert interviews has been conducted. The lessons observed for this study took place in two different schools located in Upper-Austria (School 1) and Vienna (School 2) respectively.

School 1 is a regular public secondary school (Bundesgymnasium) with a focus on languages, but no specific program for bilingual teaching. CLIL in PUP is more or less a matter of agreement between the specific teacher and the students. At the beginning of each school year, the PUP teacher, whose first subject is English, asks the students if they are willing to use English as the medium of instruction for all PUP lessons throughout the year. As the teacher pointed out, most classes gladly accept that offer. What needs to be clarified is that the students are not obligated to use English due to the voluntary nature of the setting. According to the teacher, students mostly use English but sometimes switch back to German. Students might start a conversation in English and finish it in German. They can also answer check-ups and do presentations in German if they feel at unease using English, and if the

¹¹ Background information provided in this chapter also includes insights gained from interviews with the teachers participating in the study. The questions asked during the interviews are presented in Appendix A.

content of the lessons deals with German philosophers, the original language is used.

Also, language is not graded and in testing situations the students can choose between German and English. So, content is the main focus while language functions as a means of transport, which of course includes focus on vocabulary and grammar to some extent. The teacher had been teaching PUP in English at the school for 6 years and had had 15 years of experience in using English as the medium of instruction prior to the engagement at the school where the lessons for this study were observed. The 21 students participating in this study were in 8th form upper secondary and 17 or 18 years old. They had had 1 year of CLIL Psychology education in 7th form upper secondary, in addition to the regular English lessons every year of their schooling careers. The basic concept of CLIL in this class could be summarized as “using English as a natural tool for PUP education and for additional language training”.

School 2 is a public secondary school (Bundesrealgymnasium) based in Vienna and is part of the Vienna Bilingual Schooling program (formerly known as Dual Language Program). CLIL is offered in the form of two different teaching branches: FE (Focus English) for lower secondary and VBS (Vienna Bilingual Schooling) lower and upper secondary. The 37 learners for this study were 16-18 years old and in 7th (Psychology) and 8th (Philosophy) form upper secondary and part of the bilingual school program. Hence, they have had at least 3-4 years of experience with CLIL in upper secondary across most subjects. Some have even had additional experience with CLIL education in lower secondary in FE classes (Focus English). It needs to be noted that all the students had to enroll in bilingual classes, which required an orientation talk to determine whether the students fulfill the necessary linguistic requirements for bilingual learning. So, English language proficiency among the students in the observed lessons was generally high. Enrollment in bilingual classes is voluntary so students in both classes “have particular interest in learning foreign languages and enhancing their English within a bilingual immersion programme, using English as a working language in Humanities” (BRG 14 school website <https://www.brg14.at/?Page_id=4205>). PUP is taught twice a week by a German speaking subject teacher (T1) and an English native speaker teacher (T2), of whom the latter has a Lehramt degree in English and PUP. Both languages, L1 German and L2 English are equal mediums of instruction during the lessons, but English is

the language mainly used. The lessons observed were guided by the English native speaker with regards to both content and language. The regular subject teacher supplemented the lessons with additional psychological and philosophical input provided in German, but sometimes T1 also gave input in English. In bilingual teaching programs, both teachers had been working together for 15 years, meaning they are very experienced when it comes to bilingual teaching. Before engaging in cooperation with the native speaker teacher, T1 had also taught PUP in English independently for a couple of years. The focus during CLIL PUP lessons is definitely content, but linguistic aspects are also considered in terms of vocabulary, grammar, spelling and pronunciation.

6.3. Study design and data collection & analysis

Overall, four lessons were observed and audio recorded. Before this could be done and to ensure that research ethics are maintained, permission to record and observe the lessons was obtained in written form from the 'Bildungsdirektionen' Upper-Austria and Vienna, the head teachers of the schools and of course the teachers and learners participating in the study. The declaration of consent students had to sign took the form of an information sheet and was handed out before each observed lesson. Given the students age (16-18) and the analogy to the right to vote, the students' were deemed old enough to give consent. For information sheet and declaration of consent see Appendix B.

School 1, a double Philosophy lesson (Philosophy lessons 1+2) was observed and audio recorded while at School 2, the same was done in one Philosophy (Philosophy lesson 3) and one Psychology lesson (Psychology lesson 3). The information given in parenthesis indicates how the lessons are referred to in the analysis. Concerning the topics dealt with in each lesson, detailed information is provided in chapter 7. The audio data obtained from the lessons was transcribed according to the VOICE transcription conventions and transformed into a Word document. It needs to be noted that decoding the sound recordings of Philosophy lessons 1+2 posed significant difficulty due to high noise levels caused by group work and discussions. The decoding of Philosophy lesson 3 and Psychology lesson 4 was easier as the lessons included less independent student work and more teacher-guided talk. Once the data was transcribed, the transcriptions in word documented form were manually analyzed to identify CDF use by both teachers and students. CDF realizations were color coded and relevant

sequences were marked with comments concerning which CDF was realized and by whom. The comments (e.g. EVALUATE (S), EXPLAIN/REPORT (T)) were necessary since the color-coded episodes often included more than one CDF realized by either teachers or students and in order to be able to count the realizations of the CDF types. CLASSIFY was highlighted in a regular blue, EVALUATE in orange, REPORT in grey, EXPLORE in yellow, DESCRIBE in light blue, DEFINE in light green and EXPLAIN in dark blue. The following compilation extracts taken from the word documented transcriptions illustrate the handling of the data:

CLASSIFY:

EX. 1:

T2: Ahm, and one of his favorite questions was - was basically that one question - one of the four philosophical questions we were talking about with Kant, ahm, how should we live. So he was very interested in the way that the Athenians should be living. So what kind of a question is this? (.) Ahm, what kind of a, ahm, what area of Philosophy are we talking about if we say how we ought to live?

S1f: Ethics?

Kommentiert [Office1]: Classify (S)

EX. 2:

T1: Die zweite Disziplin behandelt dieses Wissen, und wenn er sagt ich weiß dass ich nichts weiß hat das mit welchem Teilbereich der Philosophie zu tun? </L1fr>

S2f: (.) <L1fr> Erkenntnisphilosophie? </L1fr>

T1: <L1fr> Ja. Erkenntnisphilosophie. </L1fr>

Sfx: <L1fr> Das wollt ich auch sagen. </L1fr>

Kommentiert [Office2]: Classify (S)

T1: <L1fr> Er sagt hier eigentlich, ja? Was können wir tatsächlich wissen, und das ist der Teilbereich den wir auch nennen hier - es geht bereits schon um Erkenntnistheorie, ja? (.)

Kommentiert [Office3]: Classify (T)

EVALUATE:

EX. 1:

T2: If it makes you happy? The thing is, once you have done it enough times you realize that it makes you happy in the moment and then afterwards you are like: oh, that was too much pizza. And then you feel bad because you have not achieved anything that day and all you did was binge-watch some stupid American TV show. |

S3f: But whether I achieve something or not that is so - that's like a question of definition. |

S2f: Yeah. I have binge-watched an entire season and that's an achievement. |

T2: I am a mega binge-watcher. I am the best binge-watcher ever.

S2f: And like, essentially, it is the same as learning. You just absorb information. |

T2: Yeah, but what information are you absorbing?

S2f: A story.

T2: If it's healthy information - if it's information that's doing you good - and you feel like it's doing you good. You are learning about life or. And again you are learning something so you can flourish. So that you can get somewhere (.) If you are just binge-watching a useless TV show that's just not teaching you anything and just flashing lights and - I don't know - cars =

S2f: = But you will know that it's bad, so in effect you are still learning. You are always learning.

T2: You are always learning something, yeah. |

Kommentiert [Office4]: Evaluate (T)

Kommentiert [Office5]: Evaluate (S)

Kommentiert [Office6]: Evaluate (S)

Kommentiert [Office7]: Evaluate (S)

Kommentiert [Office8]: Evaluate (S) & Explore

S2f: So, even if I watch a really bad show and it has some stupid things then I will know that they are stupid. |

T2: Is it gonna make you happy? Socrates would say no, because it's not the truth and it's not giving you wisdom and you are not moving towards that eudaimonic state. |

S2f: But why wouldn't it make you happy to know that the show is stupid? Cause I know I'd know.

Smx: Yeah but you know after the first episode. So why would you watch 4 seasons?

S2f: But if it makes me happy? You don't need to binge-watch a stupid series, but I can consider something stupid and still like it.

T2: Oh yeah. |

Kommentiert [Office9]: Evaluate (S)

Kommentiert [Office10]: Explain (T)

Kommentiert [Office11]: Evaluate & Explore (S)

EX. 2:

S1m: Well but if it was said that they don't have any responsibility it kind of says that if they don't do it (.) someone else will do it. Or the experimenter would do it himself. So for me, I don't think the teacher - they didn't sort of have a choice because they - on the one hand if they did it it was bad for the learner, but on the other hand if they sort of protested someone else would have done it. So it didn't change in their mind - it didn't change for the learner. |

T2: Ahm, it is interesting that you should bring up that point, but how would you feel if you were the teacher and you had to sleep that night and you =

S1m: = well bad, of course of course = |

T2: = and it was you who pressed the button?

S1m: (.) Of course, but I would then say to myself: Well, if I hadn't done it then someone else would have done it. |

Kommentiert [Office12]: Evaluate (S)

Kommentiert [Office13]: Evaluate (S)

Kommentiert [Office14]: Evaluate (S)

REPORT:

EX. 1:

T1: = <L1fr> Ah, es hat so ein richtiges auch Eichmann Ministerium gegeben. Also der war sozusagen dafür verantwortlich, ahm, dass hier alle Juden auch sozusagen verteilt wurden auf die einzelnen Lager. Also er war der big boss eigentlich, ja. </L1fr> |

T2: (.) Okay, so. He was transportation administrator and he managed all the trains that transported all of the Jews and all the other nationalities to their deaths. He sent 430 000 Hungarians to the gas chambers, but that was after the entire thing had stopped. They had been halted by the Nazis. So he was still doing it (.) You can imagine what kind of evil is lurking behind such a face. I mean he's just an ordinary guy - looks like it - you could meet this guy in any kind of bureau in the government anywhere. He doesn't look like anything special (.) at all. Just like a normal, sort of old guy. And he did this kind of stuff (.) and Milgram and other people wanted to know why and how this happened, okay? <to S1f> You wanted to answer the question? </to S1f> |

Kommentiert [Office15]: Report (T)

Kommentiert [Office16]: Report 1 (T)

Kommentiert [Office17]: Report 4 (T)

EX. 2:
Sxm: = They actually did the same experiment in Poland in 2015 with the same results. And that's during a time when most people should be aware what happened during holocaust. It still had the same effects on them. That's pretty interesting.

EXPLORE:
EX. 1:
S3f: If you're like, ahm. If you are privileged enough to be ignorant then you can go through your whole life with this sort of happiness. Because then you are just ignorant your whole life and <un> XX </un>. But if you are like, if you, if you are confronted with obstacles and struggles from an earlier age, then you will have to like question why you are here. Maybe just like as, ahm, in a way to still have hope and stuff, so?

EX. 2:
S2f: Well he was the only one who was seeing through these, ah, the facade of his world, so he was struggling because he felt alone in being like the only intelligent, like not ignorant and therefore intelligent person around. So I feel like if you are not surrounded by people who do feel the same way or share the same views; or at least have faced similar obstacles, you will have a different point of view on life. And then, if you are the only one, you will definitely feel lonely. So it won't bring you happiness even then.

DESCRIBE:
EX. 1:
T2: Yeah, to a man with heart condition. And then (.) there is one with XXX on it. And there it is (showing picture of switchboard), that's the thing that they used. It's very scientific looking (.) Alright. Then the teacher was given a list of word pairs and they had to read out the word pairs through a microphone to the learner, okay? They would read the word pairs and then they would ask the learner: "Can you tell me which word goes with this half of the pair?" Okay? And they would just read on word and say: "Which is it?", and they were given 4 options and then the learner would answer. And if they got the wrong answer, the teacher had to give them a shock.

EX. 2:
T2: Okay? (.) So the teacher was then asked to go into a different room, which is the experimental room, okay? And was asked to sit in front of a very very real looking switchboard. And the switchboard had labels on it and had switches. The switches went from slight shock up to danger, severe shock, and then there was one switch which just had XXX (2)

DEFINE:
EX. 1:
T2: Okay? Ahm, just to see if you have understood - what do you think the independent and dependent variables are in this experiment? (.) What's your independent variable? Do you remember what these are?

S1f: Yeah - the one you change.

T2: The independent variable is the one - the experimental variable - you are changing it to see what happens in the dependent variable.

EX. 2:
S3f: Ahm, and do like scientists also recognize that they - that the only - or that they are not - ahm, when you know everything - what, what's it called? Omni =

T2: = Omniscience.

EX. 3:
T1: What's that? (showing a bottle)
SS: A bottle
T1: It's a bottle. Why - what makes it a bottle?
Sfx: Some people call it a bottle.
S2f: And some people call it =
T1: = But still, they call it a bottle, but (.) we could call that a bottle, couldn't we? (showing pencil case)
S1f: Yeah, we could have.
T1: So, language is arbitrary <L1fr> zufällig </L1fr>.
Sfx: And we could put like, something liquid in it and then maybe it would be some kind of a =
T1: Ah, that's some kind of definition. Say that again.
Sfx: Ahm, we could put liquid in it so that's why we call it a bottle?

EXPLAIN:
EX. 1:
Sfx: Yeah, but first you will need some money and you get money from a job. And you get a job with education, so education is more important at first.
S2f: So if you invest your money in education it then pays off. Because you can get more money with a better job.

EX. 2:
T2: Okay. The person comes to see themselves simply as an instrument of the power-structure. That's what you said - this is your point. Yeah? You are an instrument of the power-structure. It doesn't matter that it was you that pressed it. You were just part of the machine and the machine was just running and you were a cog and someone else would have done it and hey, it's not my fault. I mean they said it was okay and just because I did it you can't blame me. You know. These kind of thoughts, alright? (.)

Kommentiert [Office18]: Report (S)

Kommentiert [Office19]: Explore & Evaluate (S)

Kommentiert [Office20]: Describe (T)

Kommentiert [Office21]: Describe (T)

Kommentiert [Office22]: Define (S)

Kommentiert [Office23]: Define (S & T)

Kommentiert [Office24]: Define (T)

Kommentiert [Office25]: Define & Explore (S)

Kommentiert [Office26]: Explain & Evaluate (S)

Kommentiert [Office27]: Explain & Evaluate (S)

Kommentiert [Office28]: Explain (T)

Illustration 9: Extracts data analysis

As previously mentioned, all the comments were counted in order to determine which CDF type was used to which extent and by whom. In a subsequent step (chapter 7.3.) exemplary samples for each CDF type realization were analyzed in terms of language and communicative intention. Finally, the insights gained were used in an attempt to match the realizations of CDFs with PUP competences, again using exemplary samples from the transcriptions and the insights gained through the theoretical mapping of the PUP competency model and CDFs.

7. Results

7.1. Occurrences of CDFs – quantitative analysis

In the following sections, the occurrences of CDF types based on the transcripts of the audio data will be quantitatively analyzed. What needs to be clarified at this point is that the CDFs were often verbally performed in longer episodes frequently overlapping with other CDF types. This insight was already pointed out by Kröss (2014) based on her exploratory study of six CLIL physics lessons (Dalton-Puffer 2013: 33). Due to these circumstances, sometimes the entire episodes were counted as one instance of the respective CDF, if the episode was not interlaced with other functions. If it was, the additional CDFs were counted separately. Furthermore, it needs to be noted that “it is generally difficult to find CDF episodes realized independently by students” (ibid: 48), as well as finding clear boundaries between the CDFs as they all occurred in natural classroom interaction. Given these obstacles, the quantitative results might not present a complete picture but should certainly suffice for a validation of the CDF-Construct and its potential applicability for CLIL PUP lessons.

Since it is also necessary to understand the context in which the CDFs were realized, a short description of the contents dealt with in each lesson will also be provided. In order to gain insights into the variation and differences of CDF type usage, each lesson will be analyzed individually in terms of which CDFs were used, to which extend and by whom (teacher(s) vs. students). In a subsequent step, the obtained results of each lesson will be compared with the intention of finding overlaps and differences with regards to CDF usage in School 1 and School 2, as well as potential differences between Philosophy and Psychology. Finally, a compendium of the results will be presented.

7.1.1. CDFs in Philosophy lessons 1+2 – Epistemology (School 1)

The main topic of the first two lessons recorded in the process of this study was epistemology (Erkenntnistheorie). In previous lessons, students had already worked on topics such as the necessary and crucial aspects of what philosophizing entails as well as trying to find answers for the following questions:

- 1) What is real?
- 2) What can we know?

3) What is reliable knowledge and information?

4) How can we distinguish between reliable and non-reliable knowledge?

While trying to answer those questions, they were presented with the ideas of famous Greek philosophers like the Sophists, Protagoras, Socrates, Plato and Aristotle. However, the lessons referred to in this small-scale study include only some small aspects of the students' and teacher's treatment of the broad field of epistemology. Overall, 107 tokens of CDF types were found in the data of Philosophy lessons 1+2. The following chart shows the distribution of the CDFs identified:

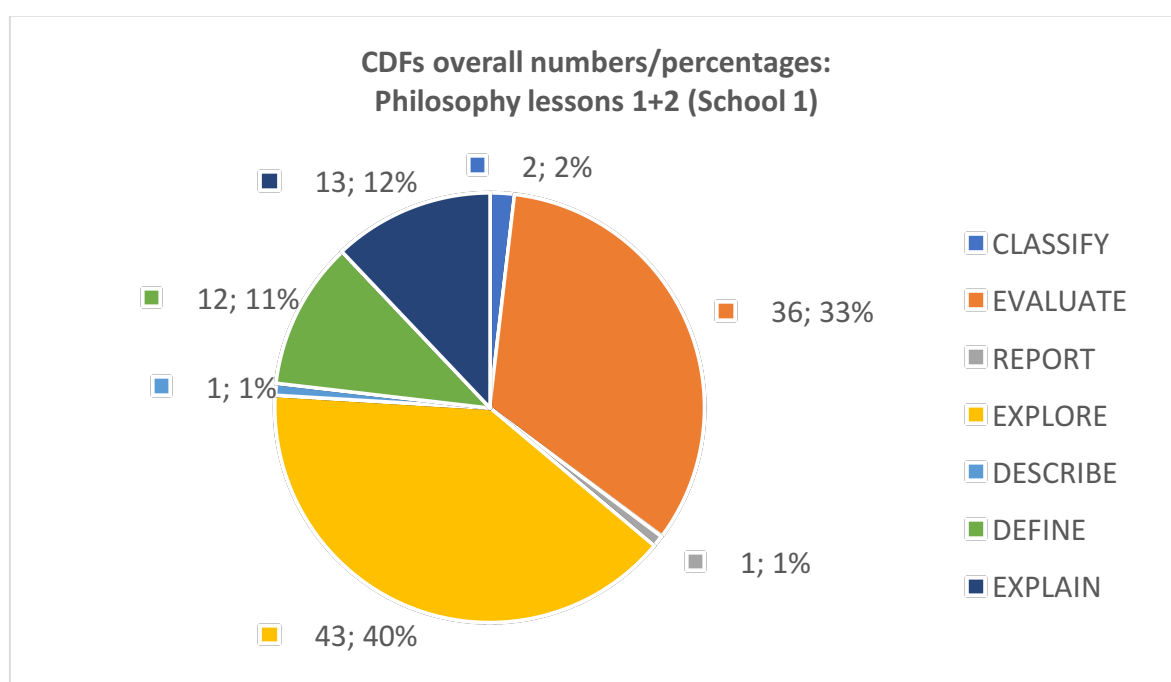


Figure 1: CDFs overall numbers/percentages (Philosophy lessons 1+2 – school 1)

As this pie chart clearly indicates, EXPLORE and EVALUATE were by far the most commonly used CDFs in Philosophy lessons 1+2 with 43 (40%) and 36 (33%) realizations respectively. EXPLAIN and DEFINE were used only sporadically with 13 (12%) tokens for the former and 12 (11%) tokens for the latter. Interestingly, the usage of REPORT and CLASSIFY does not seem to be significant as both CDFs occurred only once and twice respectively. The CDF type DESCRIBE was also only used once, albeit in very rudimental form as we will see in the example given at the end of this section. This is surprising since the Competency Model (Lamer 2011, BMBF 2015) analyzed in the previous chapter mentions DESCRIBING as an essential skill. However, this might only be due to the particular tasks worked on during the recorded

lessons. Other lessons with different topics, tasks and language focus (e.g. writing tasks) may also include DESCRIBE. The same counts for REPORT and CLASSIFY (e.g. student presentations, comparing philosophical views on life/reality/knowledge). Considering that the numbers and percentages given in this chart include CDF applications by both students and teacher, it is necessary to take a closer look at the extent to which both parties made use of CDFs. This will be done in the following two graphs.

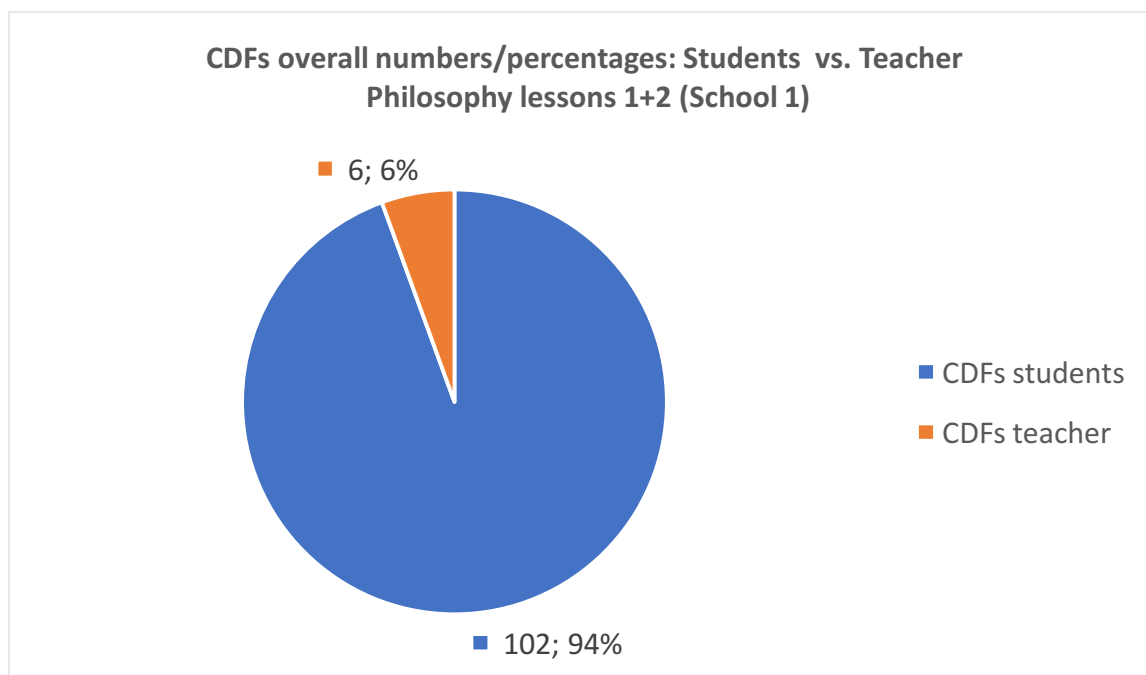


Figure 2: CDFs overall numbers/percentages students vs. teacher (Philosophy lessons 1+2 – school 1)

As we can see in this chart, the vast majority of CDFs was used by the students with 102 tokens accounting for 94% of all CDFs identified in the transcripts. Overall, the teacher only used 6 CDFs during the double lesson amounting to 6% of the entirety of CDFs that occurred. At this point I would like to reiterate that the didactic principles governing the double lesson heavily relied on individual and group work carried out by the students based on materials provided by the teacher on the online learning platform *Moodle*, which every student accessed on their own laptop. This resulted in a very learner-centered approach giving the students the opportunity to philosophize and use the English language independently and authentically with the teacher merely explaining the tasks and providing input via *scaffolding* if needed. Given that the students could individually select their preferred exercises from the materials provided,

some decided to work on individual reading, writing and listening tasks and did therefore not contribute any oral output for the audio-recordings referred to in this study. Some of those tasks and exercises also require the usage of CDFs that do not feature prominently in the obtained audio data. For instance, Plato's allegory of the cave that can be analyzed and compared (CLASSIFY) to the movies '*Matrix*' or '*The Truman Show*'. Afterwards, the ideas presented in the movies can be subsumed (CLASSIFY) under the conceptual framework of the allegory of the cave, highlighting the relevance of this ancient idea for the modern world. In '*The Truman Show*', the protagonist is living in a pre-fabricated TV-studio world, unknowing of his captivity and unable to recognize the world for what it really is. Everything he sees and experiences is essentially a reflection (shadow) of the truth, and in order to escape his bondage he has to go on a painful journey of overcoming his fears and false perceptions, leaving the familiar, heteronomous world behind to finally create his own, self-determined life and find the real truth and self-knowledge. Concerning '*Matrix*', we can identify a similar concept. Benedikt Simons (2009: 97) provides a comprehensible summary of the overlaps between the Matrix and the allegory of the cave:

Platons Dualismus von Scheinwelt und wahrer Welt bestimmt die Vorstellung in Matrix, in beiden Fällen ist die „Realität“ eine Scheinwelt, der in Wahrheit eine zweite Welt zugrunde liegt, der Film und Platon weisen den beiden Welten jeweils dieselben Formen der Wahrnehmung zu, nämlich durch die Sinne bzw. durch den Geist. Bei Platon und in Matrix ist die diesseitige Welt abhängig von den subjektiven Interpretationen des Einzelnen und bietet keine Sicherheit, auf der anderen Seite steht in beiden Vorstellungen die Existenz der jenseitigen Welt als absolute Wahrheit fest.

Just like the people in Plato's cave, the protagonist in Matrix (Neo) must escape the 'prison' of sensual perception and false reality and free his mind, to finally realize who he really is and to find the truth behind the world. Without going into further detail here, we can see that the materials and tasks provided by the teacher are rather extensive and would likely require CDF usage (CLASSIFY & ELABORATE) that could not be identified in the audio recordings. However, because of these circumstances, only the (groups) of students engaging in oral exercises and discussions in vicinity of the microphone were recorded. Thus, the presented results cannot be considered as a complete representation of the lessons contents. Nevertheless, the data obtained yielded interesting and helpful insights regarding the potential applicability and compatibility of the CDF-Construct for CLIL PUP education, as the following graph will show:

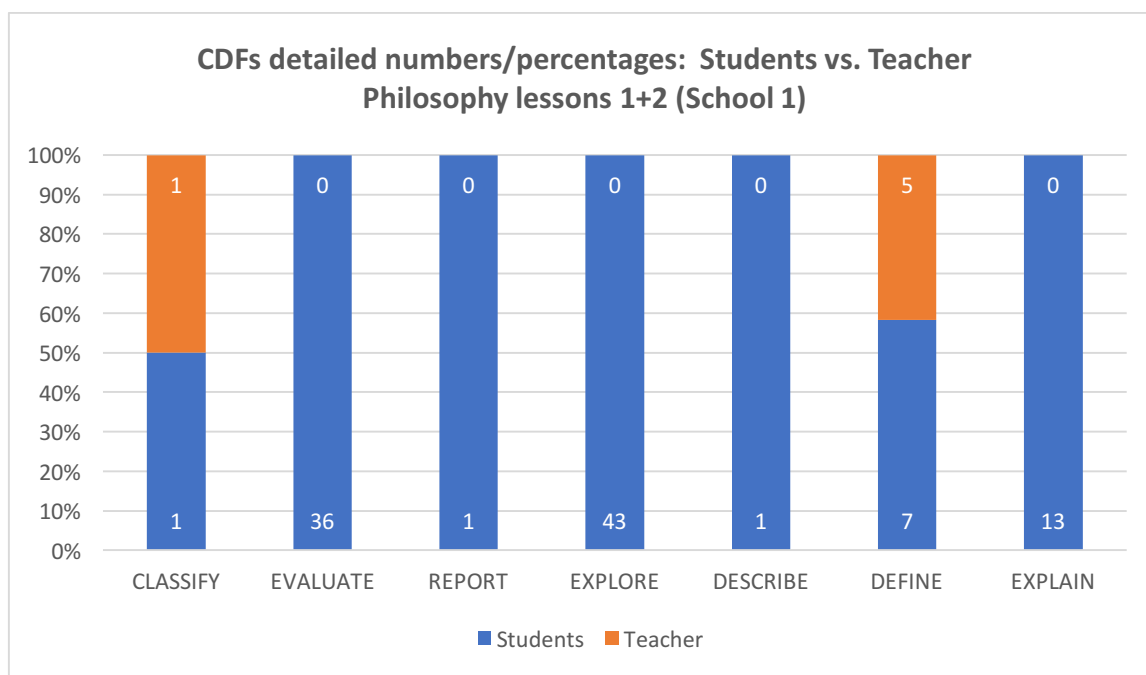


Figure 3: CDFs in detail (Philosophy lessons 1+2 – school 1)

This graph reinforces what has already been mentioned before. The students were the main producers of CDF verbalizations as the teacher simply guided the lesson with questions and remarks. EXPLORE and EVALUATE are by far the most common CDFs identified in the data with 43 and 36 tokens respectively. EXPLAIN and DEFINE follow far behind with only 13 and 12 tokens identified, 5 of which (DEFINE) were verbalized by the teacher. Thinking of this graph as a vertical scale, we would find CLASSIFY and REPORT and DESCRIBE at the bottom end. CLASSIFY was only used twice, once by the teacher and once by the students and REPORT and DESCRIBE were each used only once.

7.1.2. CDFs in Philosophy lesson 3 – Socrates (School 2)

Philosophy lesson 3 was concerned with the topic of ancient Greek Philosophy. The lesson evolved around the life and ideas of the famous Athenian philosopher *Socrates*, widely regarded as the founding father of occidental thinking. More specifically, the lesson dealt with epistemology, the true nature of our true self and the striving for truth, wisdom and perfection to reach the state of '*Eudaimonia*' (happiness or more accurately 'human flourishing'), which, according to Socrates, requires the knowledge of what is "good" and what is "evil". Thus, the topic of ethics and morale were also

encompassed. In total, the data obtained from Philosophy lesson 3 contained 130 instances of CDFs. However, the distribution of CDFs looks rather different than the one found in the data of lessons 1+2.

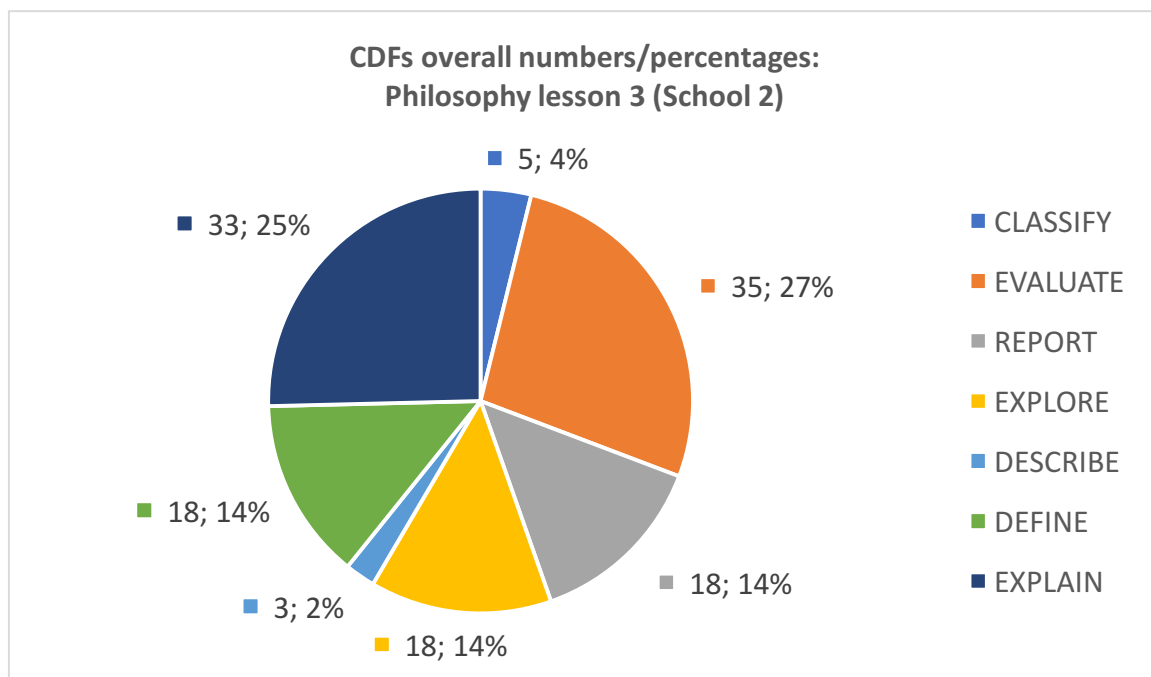


Figure 4: CDFs overall numbers/percentages (Philosophy lesson 3 – school 2)

Looking at this chart, the CDFs most frequently identified in the audio recording of the third Philosophy lesson (school 2) were EVALUATE and EXPLAIN accounting for more than half of all the CDF types used (52%). Overall, 35 tokens of EVALUATE and 33 tokens of EXPLAIN could be spotted. DEFINE, EXPLORE and REPORT each accounted for 14% (18 tokens) of the overall CDF realizations, while CLASSIFY and DESCRIBE were the least used CDFs with only 5 (4%) and 3 (2%) verbalizations respectively. The fact that all CDFs were used in this lesson likely stems from the different methodological approach used in this lesson as opposed to lessons 1+2 in which the students dealt with the materials mostly independently. The teachers structured their lesson around a PowerPoint Presentation providing the students with visual input containing all the information needed to understand the relevance of the content and topic. Throughout the lesson, the teachers also provided verbal input in form of background information and explanations of the content presented in the PowerPoint Presentation. Additionally, the students were asked guiding questions to ensure for a deepened processing of the content. However, looking at the distribution

of CDFs in terms of who used them, it can be determined that the total usage of CDFs by the teachers exceeded the CDF applications by the students.

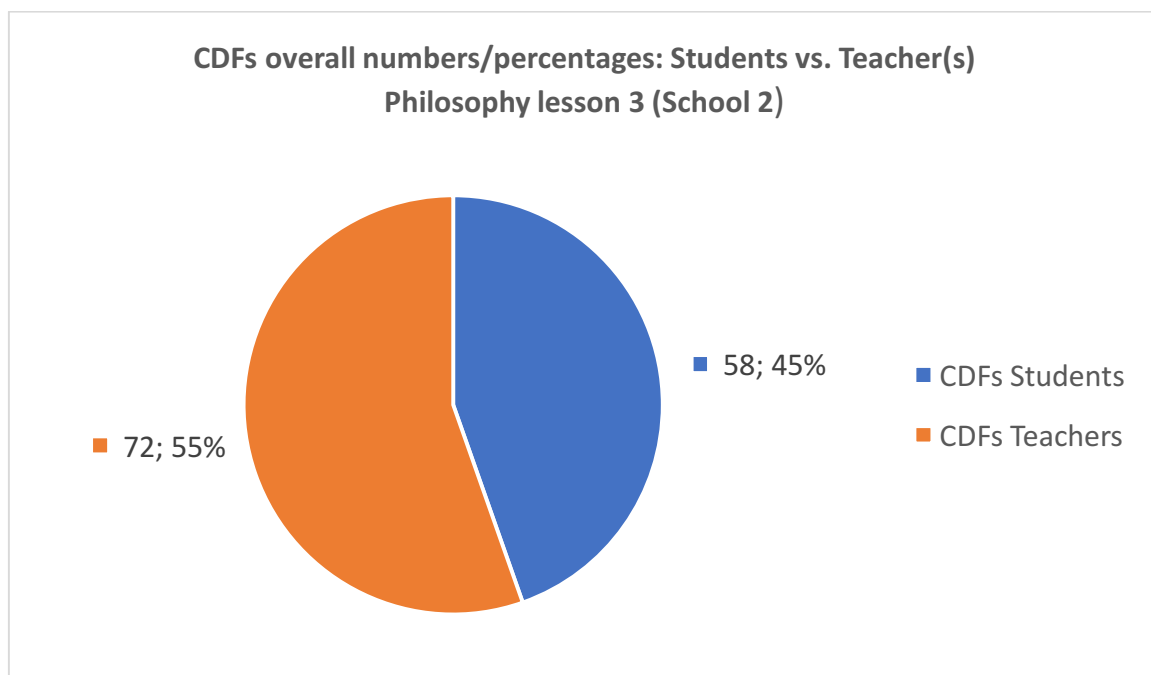


Figure 5: CDFs overall numbers/percentages students vs teacher(s) (Philosophy lesson 3 – school 2)

Of the total 130 CDFs used in this lesson, 72 CDFs were realized by the teachers (55%), while only 58 realizations by students could be identified in the data (45%). This indicates that more speaking time was allocated to the teachers. I would argue that this is the result of a more teacher-centered teaching approach in form of frontal teaching due to the need of introducing a new topic and establishing the foundation for further, more student-centered treatments of the content and topic in subsequent lessons. Interestingly, even though more CDFs were used by the teachers in overall numbers, there were major differences between teachers and students in terms of which specific CDFs were used. The following graph will provide a clearer picture concerning this matter.

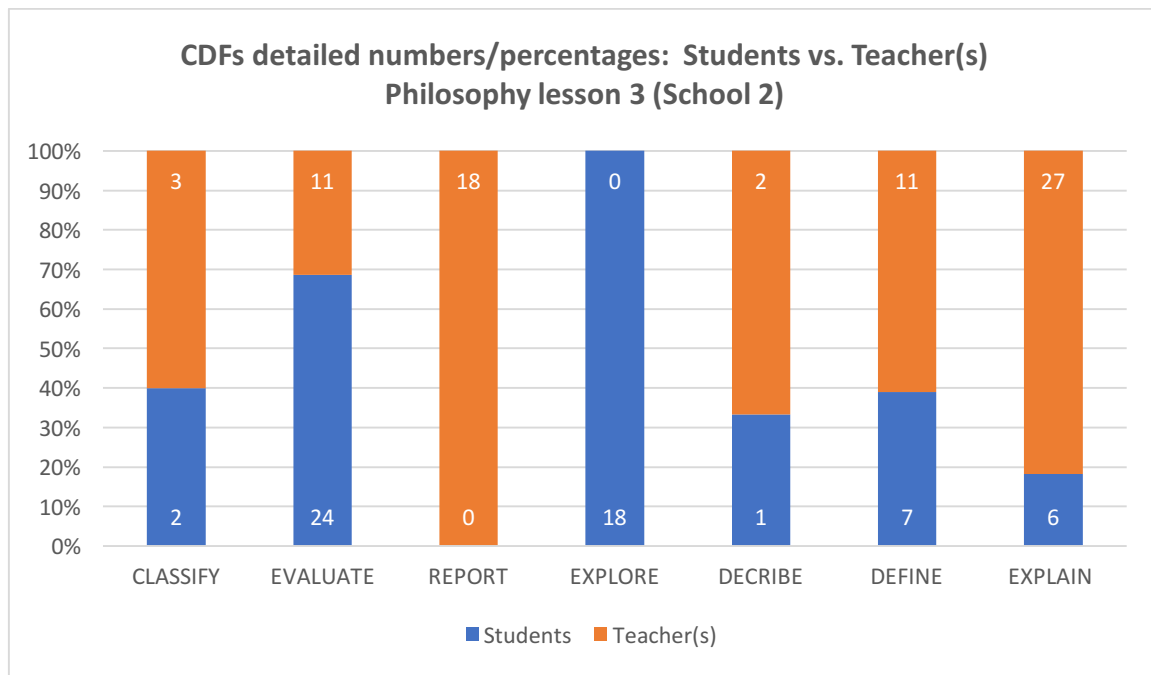


Figure 6: CDFs in detail (Philosophy lesson 3 – school 2)

Looking at the distribution of CDFs in detail, we can see that CLASSIFY and DESCRIBE were used nearly equally often by teachers and students. 3 tokens of CLASSIFY were used by the teachers and 2 by the students. The application of DESCRIBE shows a similar picture with 2 realizations by the teachers and 1 by the students. Concerning DEFINE, teachers made more extensive use of this CDF type with 11 verbalizations identified compared only 7 tokens found for the students. Particularly interesting are the distributions of EVALUATE and EXPLORE, showing that the vast majority of these CDF types were used by students with 24 of 35 tokens for EVALUATE and 18 of 18 tokens for EXPLORE. This means that approximately 70% of all instances of EVALUATE and even 100% of instances involving EXPLORE can be attributed to the students. If we look at EXPLAIN and REPORT on the other hand, the roles are pretty much reversed with 27 of 33 instances of EXPLAIN (approx. 80%) and all the sequences involving REPORT (18 tokens) being realized by the teachers. Now, as mentioned earlier, the teachers used a PowerPoint Presentation to support their teaching. Given that it is usually necessary to explain or clarify the presented content especially when introducing a new topic, it is not surprising that the teachers were the ones using EXPLAIN and REPORT extensively to provide the students with the necessary information needed for independent handling of the philosophical subject matter. Thus, they gave the students the opportunity to think on

their own and come to their own conclusions via EXPLORING the new information reflecting on it and subsequently taking a stance (EVALUATING). As pointed out by the main subject teacher (see section 8.1.), this kind of discursive reasoning is a major objective in PUP lessons.

7.1.3. CDFs in Psychology lesson 4 – The Milgram Experiment (School 2)

The topic of this lesson was the experiment conducted by Milgram, which sought to find a psychological explanation for the atrocious crimes committed by the Nazis during World War 2. Basically, Milgram wanted to find out whether all the Nazis involved in the Holocaust were simply following orders and not making their own decisions, leading to their arguments and believes that they were not responsible for their actions. Based on his findings, Milgram developed two critical theories for human behavior, namely the **Theory of Conformism** and the **Agentic State Theory**. During the lesson, a close look was taken at the procedures, results and implications of Milgram's experiment, giving the students an idea of why people are capable of terrible, immoral actions when faced with the pressure and authority of a higher principle (such as science in the case of the experiment or national ideology in the case of National Socialism) by seeing themselves merely as an instrument of carrying out another person's wishes. Overall, 131 CDFs were found in the audio data retrieved from the lesson with a similar distribution compared to Philosophy lesson 3.

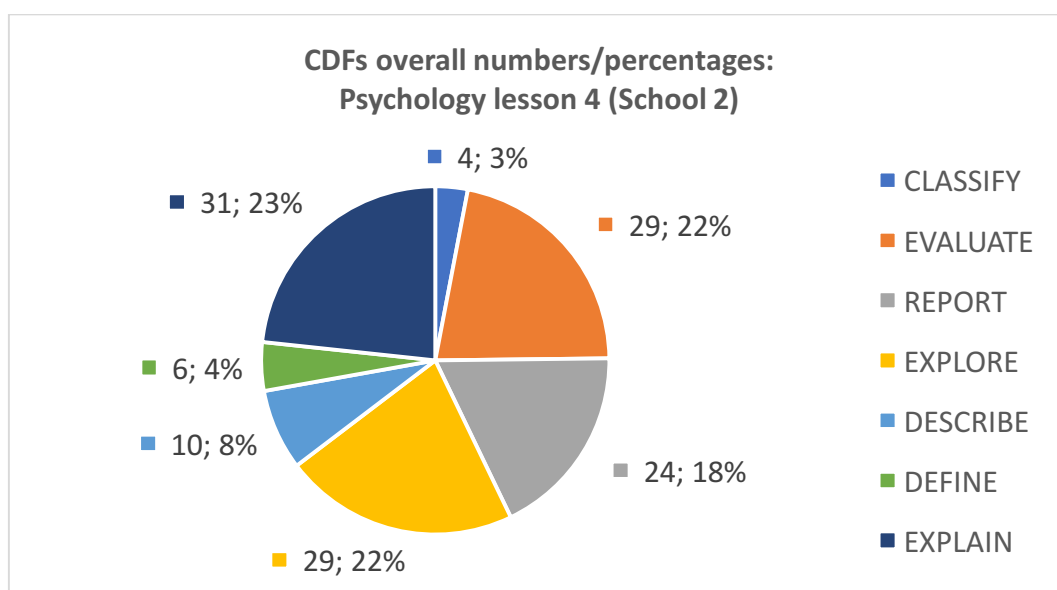


Figure 7: CDFs overall numbers/percentages (Psychology lesson 4 – school 2)

As the pie chart indicates, EXPLAIN, EVALUATE and EXPLORE were the most commonly used CDFs during the lesson with 31 tokens (23%), 29 tokens (22%) and once more 29 tokens (22%) respectively. REPORT follows closely behind with 24 instances accounting for 18% of all the CDFs used. Analogous to Philosophy lesson 3, albeit in slightly different order, DESCRIBE, DEFINE and CLASSIFY were the least used CDFs. For DESCRIBE, 10 instances were identified amounting to 8% of the overall percentage of CDFs. DEFINE was hardly used with only 6 instances (4%) and CLASSIFY was merely used four times (3%). Having a look at who realized more CDFs during this lesson though, we can detect a difference compared Philosophy lesson 3.

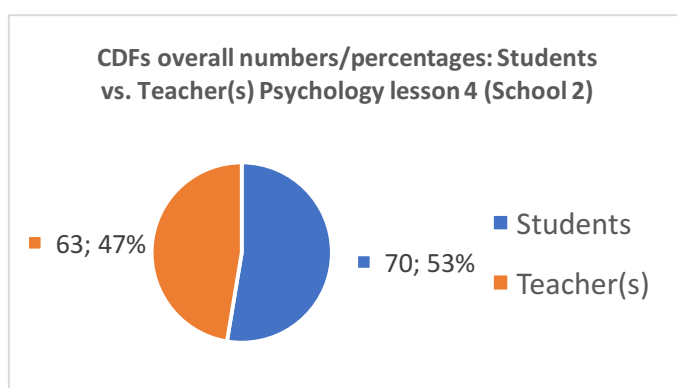


Figure 8: CDFs overall numbers/percentages students vs. teachers (Psychology lesson 4 – school 2)

In this lesson, student's usage of CDFs exceeded CDF utilization of the teachers by a small margin. Numbers and percentages are more or less reversed compared to Philosophy lesson 3. This time, 70 tokens of CDFs can be attributed to the students, meaning that more than half

(53%) of all the CDFs used were realized by the students. Nevertheless, the teachers' contribution in terms of CDFs is still high with 63 tokens amounting to 47%. Again, when looking at by whom specific CDFs were used, there are significant differences between students and teachers.

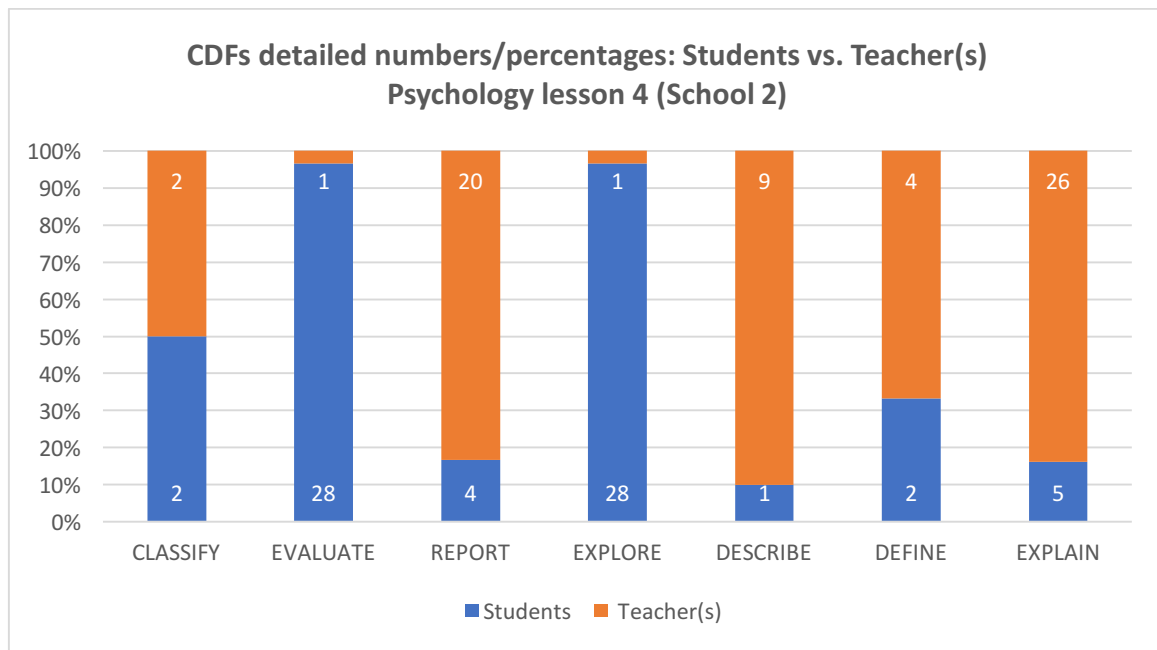


Figure 9: CDFs in detail (Psychology lesson 4 – school 2)

CLASSIFY and DEFINE were seldom used by both teachers and students. In total, only 4 instances of CLASSIFY could be identified, being realized two times by students and teachers each. Concerning DEFINE, 4 tokens could be attributed to the teachers and 2 tokens were identified for the students. DESCRIBE was also only used once by the students, but the teachers made use of this CDF type 9 times. The most significant differences can be found regarding the other 4 CDF types. Once again, EVALUATE and EXPLORE were the CDFs used most frequently by students with 28 tokens each, while the teachers only made use of these CDF types once. Yet, inspecting the data for REPORT and EXPLAIN, it becomes evident that these CDF types were mainly the domain of the teachers. Students used REPORT and EXPLAIN only 4 and 5 times respectively, while 20 or more tokens for each CDF type could be identified for the teachers. Combining the numbers of Philosophy lesson 3 and Psychology lesson 4 (both taught by the same teachers but with different students), we get an interesting picture:

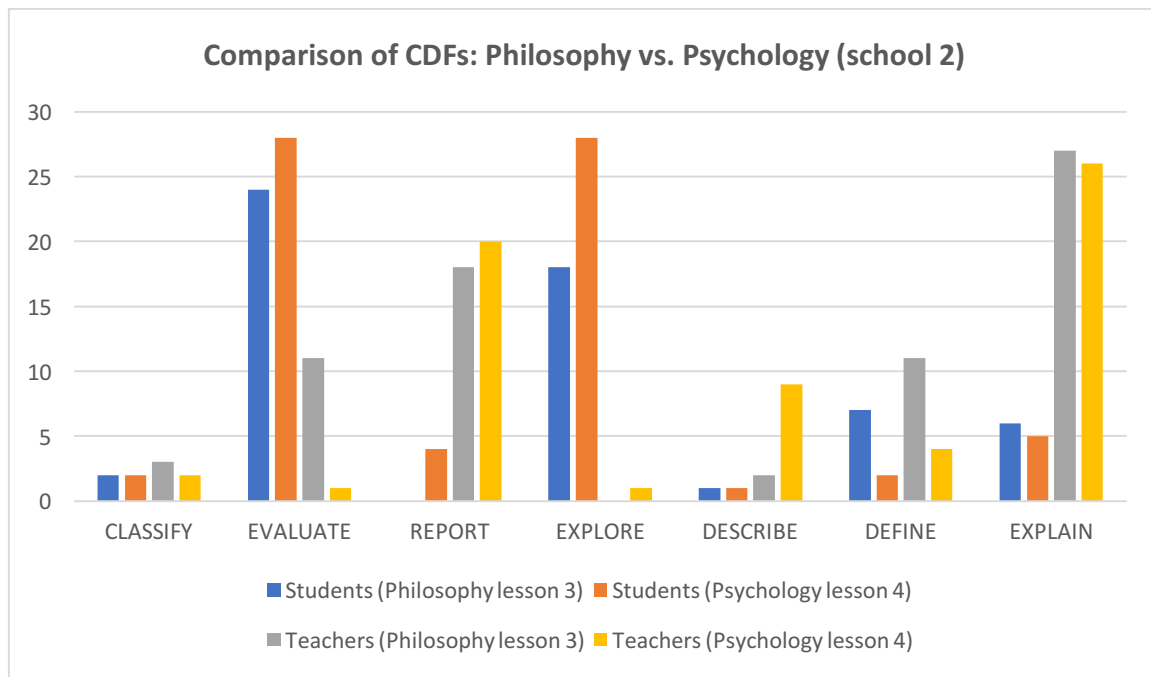


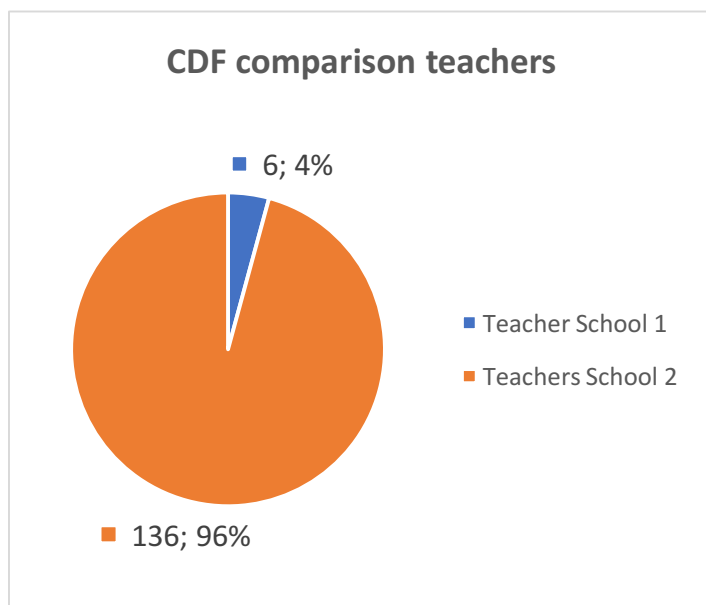
Figure 10: Comparing CDF usage in Philosophy and Psychology (School 2)

In both lessons, EVALUATE and EXPLORE are by far the most frequently used CDFs by the students, while at the same time hardly being used by the teachers. EXPLAIN and REPORT on the other hand are rarely used by the students in both lessons, while being the most frequently used CDFs of the teachers. CLASSIFY was used to almost equal extents by students and teachers in both lessons, which could also be said for DESCRIBE. However, in Psychology lesson 4, the teachers made significantly more use of DESCRIBE, which is due to the process description of the Milgram Experiment. A more detailed analysis of this process description will be carried out in the qualitative analysis of the CDFs. All in all, it can be concluded that the distribution of CDFs is very similar across both lessons with regards to who uses which CDFs, supporting the idea of Philosophy and Psychology being considered as one subject (PUP).

7.1.4. Comparing and combining the results of School 1 & 2

If we take a comparative look at CDFs used by the teachers in School 1 and School 2, it becomes evident that the teachers in School 2 used CDFs far more extensively. Even if it is not the main objective of this study to investigate the CDF usage of teachers, it is still interesting to see how the extent to which CDFs are used by teachers is affected by their methodological approach. As pointed out in the section 8.2.1, the teacher in School 1 implemented a very student centered-teaching style, giving students the

opportunity to deal with subject-specific content independently. On the other hand, the teachers in School 2 relied more on teacher-fronted teaching (see section 8.2.2.). The differences of these two methodological approaches in terms of CDF realization by the teachers are illustrated in the following graph.



Clearly, the teacher in school 1 used a significantly smaller number of CDFs compared to a rather extensive usage by the teachers in school 2. Overall, 96% of all CDFs used by teachers could be attributed to the teachers of School 2 (136 instances), while only 4% (6 tokens) were identified for their colleague in school 1.

Figure 11: CDF comparison teachers

Despite the differences in teaching style, content and CDF realization, the numbers for the students of both schools show striking similarities. While there might be some slight differences with regards to overall numbers, one can still identify a clear pattern. Thus, the most frequently used as well as the least often used CDFs were the same in both schools, with EVALUATE and EXPLORE at the one end of the spectrum and REPORT,

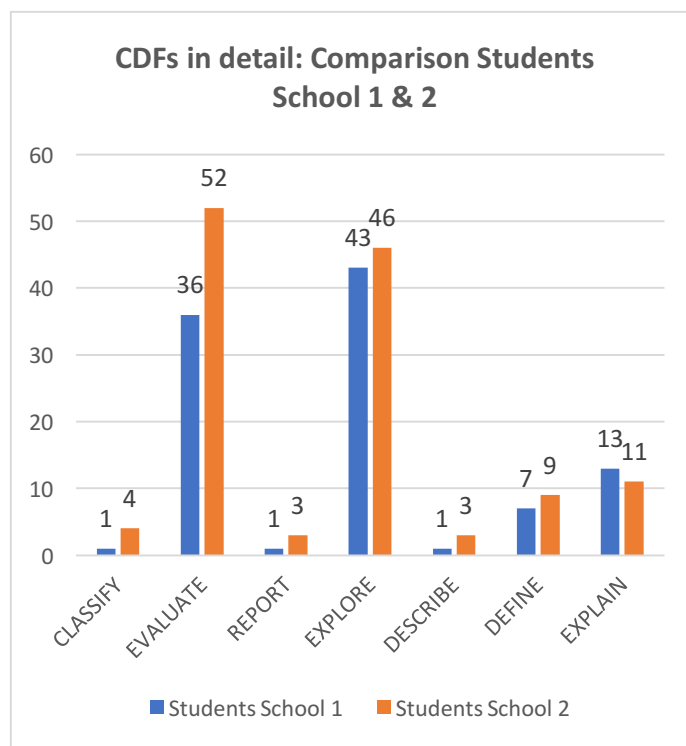


Figure 12: CDF comparison students

CLASSIFY and DESCRIBE at the other end. EXPLAIN is in between the two extremes, albeit in numbers clearly closer to the less frequently realized CDFs.

At this point I would like to take up on the comparison between the Philosophy and Psychology lessons again, only focusing on the CDFs produced by the students. considering the data of both schools, the following graph indicates that the distribution of CDFs in Philosophy and Psychology is very similar, creating an interesting pattern:

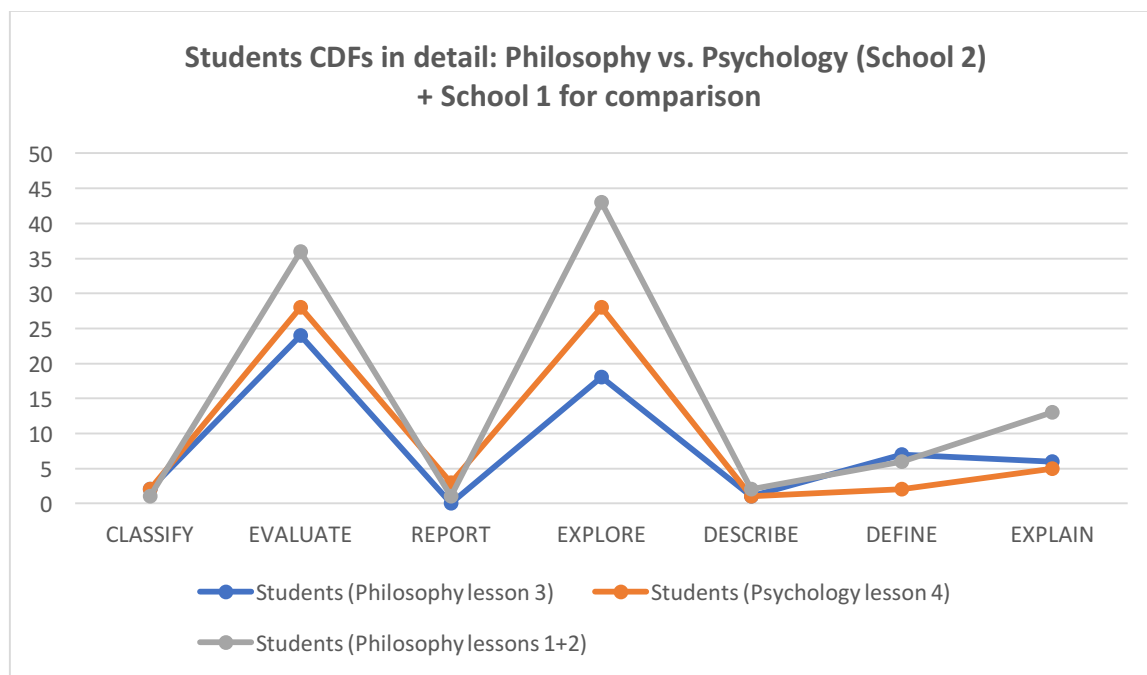


Figure 13: CDF comparison Philosophy vs. Psychology

Regardless of the lesson, EVALUATE and EXPLORE stand out as the most common CDF types. For EVALUATE, more than 23 tokens could be identified in each lesson, with a maximum of 36 tokens in Philosophy lessons 1+2. The line indicating EXPLORE form the same pattern with at least 18 tokens found in each lesson and a maximum of 43 tokens produced by the students in Philosophy lessons 1+2. DEFINE and EXPLAIN were used to similar extents across all lessons as well, albeit not surpassing the mark of 10 realizations. The sole exception was EXPLAIN in Philosophy lessons 1+2, for which 13 tokens could be identified. The use of CLASSIFY, REPORT and DESCRIBE was not significant in all lessons, as no more than 3 tokens were found for each CDF type across all lessons recorded. Based on these results, we can conclude that both CLIL settings (Philosophy and Psychology) seem to foster production of the same CDFs, regardless of the content dealt with. Combining these findings in another pie chart, this becomes even clearer:

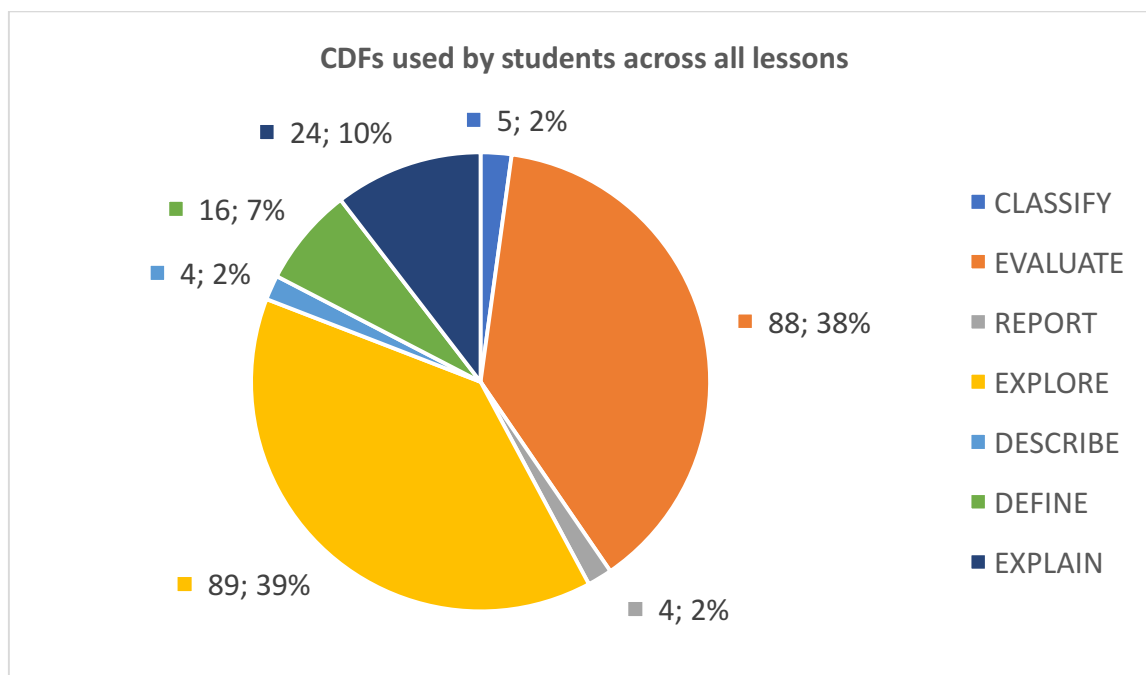


Figure 14: CDFs used by students across all lessons

Across all lessons, 89 instances of EXPLORE and 88 instances of EVALUATE could be identified, both amounting to 39% and 38% of the total CDFs used by students. Considerably less use was made of EXPLAIN with only 24 tokens found (10%). Relatively close behind is DEFINE with 16 tokens (7%). The least frequent CDF types in overall numbers and percentages were CLASSIFY (5 tokens; 2%), REPORT (4 tokens 2%) and DESCRIBE (4 tokens; 2%).

To conclude this chapter, a table summarizing the results of the of the quantitative analysis was compiled. Please note that all the percentages given were either rounded up or down, giving only one digit after the comma:

<i>CDFs</i>	Teachers (%)	Students (%)	Total (%)
<i>Classify</i>	6 (54,6)	5 (45,4)	11¹² (100)
<i>Evaluate</i>	12 (12)	88 (88)	100 (100)
<i>Report</i>	38 (90,5)	4 (9,5)	42 (100)

¹² Note that one instance of CLASSIFY was co-constructed by teacher and student(s), which is why both were awarded with one realization of the CDF

<i>Explore</i>	1 (1,1)	89 (98,9)	90 (100)
<i>Describe</i>	11 (73,3)	4 (26,7)	15 (100)
<i>Define</i>	21 (56,8)	16 (43,2)	37¹³ (100)
<i>Explain</i>	53 (68,8)	24 (31,2)	77 (100)
Total (%)	142 (38,2)	230 (61,8)	372 (100)

Table 10: Summary quantitative analysis

Based on this compilation of the results, we can see that a total of 372 tokens of CDFs could be identified in the data. Close to two thirds of the CDFs were produced by students (61,8 %), which amounts to 230 tokens in total numbers. Teachers performed slightly above 1/3 of all CDFs with 38,2% and 142 tokens. All in all, both teachers and students performed all seven CDF types, providing a strong claim for the natural occurrence of the CDF-Construct in CLIL PUP settings. While teachers mainly produced the CDFs EXPLAIN (53 tokens), REPORT (38 tokens) and DEFINE (21 tokens), students strongly resorted to the CDFs of EVALUATE (88 tokens) and EXPLORE (89 tokens). In addition to the quantitative overview, examples of how each CDF type was realized with regards to lexico-grammar also needs to be investigated. This will be done in the next section. As it would go beyond the scope of this paper, 3-5 examples for each CDF produced during the lessons under investigation will be provided. The examples will mainly be restricted to data provided by the students, however, for reasons of insights into the complexity of CDF structure, it is interesting to also look at some CDFs produced by teachers.

¹³ Note that three instances of DEFINE were co-constructed by teacher(s) and student(s), which is why both were awarded with one realization of the CDF

7.2. Application of CDFs – qualitative analysis

Having established which of the CDF types were mostly used and by whom, I would like to start the qualitative analysis with the most frequently used CDFs and finish it with the least used CDFs. Within all the examples given, which are mostly episodes, instances of other CDFs are also present. The exact numbers were presented in the previous chapter. Relevant passages in terms of lexico-grammar are highlighted in bold print.

7.2.1. EXPLORE

As mentioned in section 4.3.6., EXPLORE involves the communicative intents of voicing something with theoretical implications, meaning the statements are not established facts. Thus, it includes *hypothesizing*, *predicting* and of course *speculating*, by making use of modal verbs, auxiliary verbs and conditionals. During the lessons recorded, the teachers provided a lot of opportunities for speculative and hypothetical thinking. Especially in Philosophy lessons 1+2, the guiding questions by the teacher and the individual and cooperative analyses and interpretations of quotes provided on the online learning platform *Moodle* triggered this CDF.

Ex. 1:

1. T1: Ah. Do I see the same apple? If I look at that image, do I see the same apple as you?
2. Sfx: **It's like the picture, the picture we saw on the internet.**
3. Sfx: With the gold and white, with the colors. The dress.
4. T1: Right. So? (.) So there is something to color as well. What's that? Do we perceive, do we all perceive the same way?
5. SS: We don't know?
6. T1: We don't know? Why don't we know?
7. S1f: Yeah we actually do because if I say this is blue and [name] says too that is blue then =
8. S2f: = Yeah **but it could be that** in my perception it is, ahm, blue and red in yours. But we both call it blue because we were taught that it's blue.
9. S1f: But **why would you say** it is blue **if you think it's red?**
10. S2f: Because I was taught that it is blue. **It could be that there** are different shades of colors and for you see it differently than I do, but both of our parents told that this is blue. That's why we call it blue, **even though we maybe don't see the** same thing. We can only differentiate them by saying it's warmer or cooler colors for example. That's the same for everybody. Because snow is cooler for everybody; **blue things are normally cooler** for everybody and orange things are warmer. **But you can't say this is** the exact same color that I perceive, **if you perceive it.**

As we can see in this longer episode of EXPLORE, two students engaging in a discussion about if we all perceive colors or things the same way make significant use of the conditional auxiliary verb *would* as well as the modal verb *can/could*. Furthermore, conditional clauses involving *if* to indicate a possibility, which is clearly related to speculation, are used. The same counts for the adverb *maybe* used in passage 10. One student, triggered by the teacher's question on whether we all perceive an apple the same way, compares this issue to the example of the picture of a dress found on the internet that people either perceived as blue or gold. While comparing is usually a domain of CLASSIFYING, I would argue that this comparison is more an act of exploration, as it is not a given fact that that both examples are related. However, the teacher confirms the student's speculation by saying "Right. So? (.) So there is something to color as well." Arguably, we can also find elements of EVALUATE in this example. Looking at passage 10, the student supports her argument that we do not know if we perceive the same colors by pointing out that we were simply taught that a certain term refers to a specific color (blue). Additionally, she states that a differentiation between colors is made based on the effect they have on us (cooler or warmer colors), indicating that you cannot be certain if colors are perceived the exactly the same by everyone.

Ex. 2:

Example number 2 consists of an excerpt taken from a long discussion about the construction of knowledge and how we might be able to differentiate between reliable and unreliable sources of knowledge. EXPLORE features very prominently in these passages, but of course, the episode is also interlaced with other CDFs like EXPLAIN and EVALUATE.

1. Sfx. So, let's move on. Can one know anything? (.) Why? (.) How do we get there?
2. S2f: Reliable sources?
3. S1f: But how do you know the sources are reliable?
4. Sfx: Ah, you mean how do we gain reliable knowledge? Question 3?
5. S2f: Well, **I think even the most famous theories** are not really reliable (.) like for example the atom-theory =
6. S1f: = Yeah we know somebody said this before, **but how do we know if his theory was true? Maybe he misunderstood something.**
7. Sfx: **And maybe also (.) I mean - don't other people also need to know it was correct?** They just think it has been like this for years - many people

made a new invention and thought this is it, now we know the truth. But then later people said that was completely wrong.

8. S2f: **I think (.) I think it actually comes down** to if the person that tells you something is reliable.
9. Sfx: Yeah.
10. S2f: Because if the person that tells you something =
11. S1f: = You never know, you never know =
12. S2f = You gotta know the person, like get to know the person very well (.) like your parents for example. I consider my parents to be reliable.
13. Sfx: **Yeah, but maybe is then everything** true that they say, because they can't know like something. **Because they believe something they can't really, I don't know, prove or something.**
14. S1f: **But even if you think it's a reliable person, you never know.**
15. S2f: **Well I wouldn't ask my mom questions about, ahm, atomic physics, (.) but if I asked an expert on atomic physics, like our physics teacher, he would give me the right answer.**
16. S1f: Yeah, **he would give you the answer that you learn in school, but you would never know if it's the right answer. In order to really know you would probably have to find the answer yourself so you really understand it.**
17. Sfx: Yeah. You always have to check the answers yourself; do your own research as well. Just because the person that presents you with knowledge is an authority doesn't mean it's the correct information.
18. Sfx: And **maybe they got the information from** somebody who is not reliable.

Here we can see that students often resorted to the phrase *I think* (also *I mean*) to express that the given information is based on their own “theories” about the reliability of sources for knowledge creation (see passages 5,7 and 8). Also, the adverb *maybe* was used frequently, turning their utterances into subjunctive structures (passages 6, 13 and 18) when talking about the fallibility of presumably reliable sources. Furthermore, just like in example 1, conditionals in form of *if-clauses* and phrases including the auxiliary *would* were used. In passage 16 for example, the student argues about the reliability of knowledge presented by an expert (teacher) and points out that “you would never know if it’s the right answer”, concluding that real knowledge can only be constructed if you find the answers yourself.

In Psychology lesson 3 dealing with the Milgram Experiment, similar episodic examples were found, albeit involving less student talk. In this episode, students are exploratively trying to identify the dependent and independent variables of the experiment, interlaced with guiding questions and explanations by the teachers.

Ex. 3:

1. T2: The independent variable is the one - the experimental variable - you are changing it to see what happens in the dependent variable. So what are your independent variables and your dependent variables in this experiment?
2. S1f: **Maybe how much pressure** the experimenter puts on the teacher?
3. T2: The pressure the experimenter puts on teacher? This is, eh, definitely a variable, **and it could be an independent variable**, but not in the original setup. But, yeah, that's definitely a variable and that would be something that I think Stanley Milgram experimented with and changed, that amount of pressure, yeah.
4. S1f: Mhm.
5. Sfx: **Maybe the different participants** are the, ahm, the changing variables?
6. T2: Ah, just - just concentrate on the experiment here - with the three here. Cause that is an **extraneous variable that definitely would have an effect**, yeah, but not in the original here. We got - we got two (.) yeah?
7. Smx: **The position of the people?**
8. T2: The position? Ahm, no, no (.) What, what what are changing here to actually have an effect?
9. Sfx: **Oh, ahm - the voltage?**
10. T2: {giggling} yeah?
11. Sfx: Yeah, I was gonna say increasing the voltage so =
12. T2: = yeah, so - yeah?
13. Sfx: **Maybe the amount of wrong answers given? (.) Like if he gives the wrong answers he has to shock him, right?**
14. T2: (.) Yeah.
15. SS: {laughter}
16. Sfx. No {giggling}
17. S1f: **The reaction of the learner, maybe?**
18. T2: The reaction of the learner is something we are looking at.
19. S1f: How - like how - **well if they are gonna act like they are being shocked?**

In 2,5,13 and 17, the students use the adverb *maybe*, which indicates the speculative nature of their inquiries indicated by the rising intonation (indicated by “?”). Rising intonation towards the end of students’ utterances (also passages 7, 9 and 19) could generally be considered as an indication of EXPLORE, since they are not sure about their answers and speculations concerning what the dependent and independent variable is as being correct. In 19, the student also uses a conditional clause with *if*, which further emphasizes the explorative nature of the utterance. Interestingly, we also find EXPLORE being used by the teacher in passages 3 and 6, when he refers to answers by students as being possibly correct within a different set up of the

experiment. Here, EXPLORE is indicated by the modal *could* and the conditional auxiliary *would*.

Ex. 4:

Since Philosophy lends itself to speculative and creative thinking, or even requires it (see section 4.3.6.), the data of Philosophy lesson 3 also provided some good examples of the CDF EXPLORE. However, most instances of EXPLORE during the lesson also involved some degree of evaluation and vice versa. In example 4, based on the knowledge that for ancient Greek philosophers the purpose of life was to find happiness (which can supposedly be attained by continually reflecting on one's own life), the student EXPLORES whether this might actually be necessary to find happiness. Note that the episode is also interlaced with an explanation (EXPLAIN) by the teacher to clarify what happiness meant for Socrates (passage 4).

1. S3f: Well if, like [name] said before, ah, sorry, like the girl said before {laughter}. Like if the reason you are alive is to find happiness, **I feel like sometimes** examining your life, ahm, actually brings unhappiness. But when you're like - like ignorance is bliss kind of, like =
2. T2: = Ah, yeah.
3. S3f: **So maybe it's not this like, if you go through life without thinking of it's like**, purpose and stuff, you sometimes can be ignorant but at least you (.) because you know, **if you think about life too much then I feel like this will inevitably lead to unhappiness.**
4. T2: Mhm, yeah. That's very true. Ignorance is really bliss, right? But is it really? Socrates didn't think that ignorance was bliss. (.) He didn't think that it was bliss because that eventually it would lead to major unhappiness. So that if you just live your life with blinkers on and you never look to the side and just go straight forward and don't ask any questions, eventually reality will break through. That's what he thought. Eventually reality will get the better of you and everything will come to your head and you will be like I have no idea what's going on {laughter} and I need to reflect at some point.
5. S3f: **If you're like, ahm. If you are privileged enough to be ignorant then you can go through your whole life with this sort of happiness.** Because then you are just ignorant your whole life and <un> XX </un>. **But if you are like, if you, if you are confronted with obstacles and struggles from an earlier age, then you will have to like question** why you are here. **Maybe just like as, ahm, in a way to still have hope and stuff, so?**

In passage 1 and 3, EXPLORE is realized in the form of the phrase *I feel like*, an *if-clause* as well as the adverb *maybe*, used by the student for further reasoning and arriving at the conclusion that examining your life too much brings unhappiness and that being ignorant makes you happier (EVALUATE). In passage 5, the student's explorative argumentation continues. The student again uses conditionals and the

modal *will* for her comparison (also elements of CLASSIFY and EXPLAIN (*because*), but rather explorative in nature) between the happiness of a privileged life of ignorance and a life full of obstacles that make people question their lives so they don't lose hope. Moreover, a very rudimentary form of EXPLORE could be identified in the data of Psychology lesson 3. When asked by the teacher how participants in the Milgram Experiment went to the maximum voltage, students simply guessed the percentages:

Ex. 5:

1. T2: Alright. If a subject still wished to stop after four successive verbal prods, okay? The experiment was halted. It was halted. (.) Alright? (.) And otherwise it just went on to the maximum of 450 volts. (.) What do you reckon? How many people do you think went to the maximum?
2. Sfx: <1> **Way too many** </1>
3. Sfx: <1> **Most of them** </1>
4. S1m: **50 percent.**
5. Sfx: **80 percent.**
6. T2: Uh. You don't have much faith in humanity. 80%, 50%. Any more?
7. Smx: <1> **40%** </1>
8. Sfx: <1> **60 %** </1>
9. Sfx: **I guess 90.**
10. T2: 90? So all of you are saying more. So it's 50% and then more than 50%, not less. (.) You are all correct, okay. 65% in the first group.

7.2.2. EVALUATE

To do a quick recap, EVALUATE essentially means to state one's positions and supporting them with evidence or reasons to arrive at a justified judgement. These evaluations may also be of qualitative nature in the form of moral judgements.

Ex. 6:

In this example, students worked on a quote stating: "An investment in knowledge and education is always the best investment". The example consists of excerpts from the discussion the students had during group work:

1. Sfx: Okay then. (.) Ahm, an investment in knowledge is always the best. **With that statement I think he means if you spend money on education it's the most useful way to do so. And I would agree with it but not 100%.**
2. S1f: Why?
3. Sfx: Ahm, I don't know. **Because it's unfair because** then not everybody has the same chances. **Not everybody is blessed with a lot of money they can invest in education and education is mostly rather expensive.**

Here we can see how one of the students involved in the conversation uses the evaluative adjective *unfair* and the conjunction *because* to emphasize that she does not completely agree with the quote. Frankly, her argument is a little misleading as it does not completely relate to the quote, but still, she made her point that not everybody has the opportunity to invest their money in education because education is very expensive. Presumably, the argument she wanted to convey was that the statement is unfair towards people who cannot afford education or need to invest everything they have to ensure their daily survival. By not completely agreeing, she avoids rendering those people's investments useless or bad in a sense.

Ex. 7:

This is a continuation of the excerpt presented above. This time, students express the reasons for their positions more clearly:

1. S1f: **In my opinion spending** money on other things than education is also, like, a good thing. **Because if you**, like, buy a house and sell it sometimes **and then you can get even more money**.
2. Sfx: **Yeah, but first you will need some money and you get money from a job. And you get a job with education, so education is more important at first.**
3. S2f: So, **if you invest your money in education it then pays off. Because you can get more money with a better job.**
4. S1f: But just, **like if you invest your money or anything else in education it doesn't mean that you are actually getting a job.** So many people go to university but then **afterwards they don't get a chance** to show what they actually can do; what they are able to. You know, show their qualifications.

Starting with "*In my opinion*", S1f establishes her position. Afterwards, she gives a valid example to support her argument that investing money in real estate can create profit and is therefore also a good thing. Interestingly, another student taking part in the discussion does not refute that argument, but uses EVALUATE to show that education is the prerequisite to get a job that allows you to earn money which can then be invested into something else (passage 2). Subsequently, S1f adds that education is not a guarantee to get a job and shows that she is able to provide a reason for this claim by giving the example of academics who cannot find a job after finishing their studies. All in all, this example shows that the learners involved know how to adequately express and argue their positions with suitable vocabulary.

Ex. 8:

The following instances of EVALUATE occurred towards the end of the discussion when students had moved away from the idea that an investment needs to be of monetary nature:

1. Sfx: **I think you also don't** really have to invest money to get knowledge and to educate yourself. Because you **get to know things just by talking to other people.**
2. S1f: Yeah but then other people had to invest something in this.
3. Sfx: Yes. But you don't.
4. S1f: Yeah. But it's a general thing so like =
5. S2f: = **I even think it's mostly time that you gotta invest in knowledge** and not money, **because I personally see for myself that I have to invest more time than money into knowledge.** Because if I wanna know something about, for example, English or Spanish and about the structures of the languages and, I don't know, of the history of of a certain country I'm visiting, then **I gotta google it** and **I gotta read something about it. That's time I invest; not necessarily money.**

In this episode we can see how students use the present tense (presenting something as a fact) as well as the imperative form “*gotta*” (*got to*) to argue their points and positions, paired with examples from their own experiences in form of subordinate and superordinate *because*-clauses. All of these factors contribute to form a convincing argument.

Ex. 9:

This example was taken from Philosophy lesson 3 in which a total of 24 tokens of EVALUATE could be identified. What is interesting about this example is that the student used REPORT to bring in new information to connect it with topic of the immediate context and thereby strengthening her argument.

1. S2f: Ahm, just **quickly going back to Brave New World.**
2. SS: {laughter}
3. S2f: Sorry {giggle}. **Cause it does play, like - I go over these themes - cause if you are like the only person who is faced with obstacles like -** what's his face? The protagonist. The one that is =
4. Sfx: = John Savage, right? =
5. S2f: No, the other one.
6. Sfx: Ah, Bernard (.) Marx.
7. S2f: Bernard, yeah. He was faced with the obstacles of being short and therefore =
8. SS: = <1> laughter </1> =

9. S2f: Yeah, really. Quite <un> XX </un>. Ahm, sorry (.) and, ahm, sorry. I'm focusing {laughter}.
10. T2: Are you being <shortaged?>
11. S2f: Well he was the only one who was seeing through these, ah, the facade of his world, so he was struggling because he felt alone in **being like the only intelligent, like not ignorant and therefore intelligent person around**. So I feel like if you are not surrounded by people who do feel the same way or share the same views; or at least have faced similar obstacles, **you will have a different point of view on life**. And then, if you are the only one, you will definitely feel lonely. So it won't bring you happiness even then.
12. T2: **Yeah. It's a very interesting point, yeah.**
13. S2f: **Because you can't share it with anyone.**

In the process of discussing the Greeks' philosophical conception of happiness (Eudaimonia)¹⁵ in relation to Socrates being rather lonely due to his method of showing people that they do not know anything (which annoyed them and made them avoid him), the student connects these occurrences to the themes presented in "Brave New World" by Aldous Huxley. By comparing (CLASSIFY = passage 11) the situation of Socrates (who was essentially an outcast) and the book's protagonist Bernard Marx (who was rather short and did not fit in with a society obsessed with superficial beauty standards and sensual pleasure), the student argues her point that wisdom, (self-) knowledge and virtue do not lead to happiness, if they cannot be shared with other people. In the next example, students present counter arguments while also judging Socrates' most famous saying:

Ex. 10:

1. S1f: = Yeah. But then he was admired by many and, so **I don't feel like it involves** the entire level. **Maybe at the beginning** when everyone questioned him and his ways, but then **he is still part of our, you know, still such a big part of our community** and everyone, like, **everyone knows the name Socrates**.
2. T2: Yeah.
3. S3f: So he wasn't all alone after he died?
4. S1f: Yeah, but **he wasn't alone when he died. Because he had his pupils and ahm, his admirers**, so =
5. Smx: = **I think Socrates would have said it wouldn't even have mattered if everybody had hated him. He would still have found more happiness in knowing than in not knowing**. So, it doesn't matter what everybody thinks of you either. **You can be alone; be totally hated** by everybody, but **if you continue these strives for self-knowledge** and knowledge about the universe, then **that's better than being liked by everybody**.

¹⁵ = human flourishing and prosperity (intellectually and mentally)

6. S3f: So knowledge made him happy?
7. T2: Looks like it. Self-knowledge.
8. S3f: But he said he didn't know anything. **We have contradictions everywhere.** So what did he mean then? Because we have contradiction here. He said he didn't know anything, but self-knowledge is the way. Oh thanks a lot mate =
9. SS: {laughter}
10. T2: = You've sent me on a way with no ending there. I've got =
11. S2f: = **You are a huge oxymoron.**

Sf1 uses the phrase *I don't feel like* to express her point of view and justifies her contrary stance by pointing out that Socrates is still one of the most famous philosophers in history even though nobody liked him. S1f then completes the justification by using a *because*-clause in stating that Socrates was not alone due to his many pupils and young admirers. Hence, he had somebody to share his knowledge with. Thereby, the point that you can't find happiness if you can't share your knowledge with others (ex. 9) is refuted. In passage 5, Smx comprehensively includes both arguments into his own evaluation of Socrates situation by using reported speech in a hypothetical manner (*Socrates would have said; He would still have found* etc.) to arrive at his own conclusion. Arguably, we can also find elements of EXPLORE in that excerpt. Finally, S3f (passage 8) and S2f (passage 11) make use of CLASSIFY in their arguments, subsuming Socrates' teachings (not knowing anything vs. self-knowledge under the concepts of *contradiction* and *oxymoron*.

Ex. 11:

The last example I would like to present for EVALUATE is special because the student takes on the teacher and essentially argues against the ancient, Greek ideas of happiness and human flourishing (Eudaimonia) based on the example of senseless entertainment (binge watching Netflix).

1. T2: If it makes you happy? The thing is, once you have done it enough times you realize that it makes you happy in the moment and then afterwards you are like: oh, that was too much pizza. And then you feel bad because you have not achieved anything that day and all you did was binge-watch some stupid American TV show.
2. S3f: **But whether** I achieve something or not that is so - **that's like a question of definition.**
3. S2f: Yeah. I have binge-watched an entire season and **that's an achievement.**
4. T2: I am a mega binge-watcher. I am the best binge-watcher ever.

5. S2f: And like, **essentially, it is the same as learning.** You just absorb information.
6. T2: Yeah, but what information are you absorbing?
7. S2f: A story.
8. T2: If it's healthy information - if it's information that's doing you good - and you feel like it's doing you good. You are learning about life. And again you are learning something so you can flourish. So that you can get somewhere (.) If you are just binge-watching a useless TV show that's just not teaching you anything and just flashing lights and - I don't know - cars =
9. S2f: = **But you will know that it's bad, so in effect you are still learning.** You are always learning.
10. T2: **You are always learning something, yeah.**
11. S2f: So, **even if** I watch a really bad show and it has some stupid things then I will know that they are stupid.
12. T2: Is it gonna make you happy? Socrates would say no, because it's not the truth and it's not giving you wisdom and you are not moving towards that eudaimonic state.
13. S2f: **But why wouldn't it make you happy to know that the show is stupid? Cause I know I'd know.**
14. Smx: Yeah but you know after the first episode. So why would you watch 4 seasons?
15. S2f: But if it makes me happy? You don't need to binge-watch a stupid series, **but I can consider something stupid and still like it.**
16. T2: **Oh yeah.**

What this example basically shows is that the student is in command of the necessary vocabulary and general language proficiency to express her own point of view, opposing the one presented by the teacher. What stands out is the continuous use of the conjunction *but* to introduce her point that contrasts what has already been mentioned and to give reasons for not agreeing with it. Overall, this sequence could be considered as exploratory talk, but according to Beacco et al. (2010) EVALUATE is expected to occur “particularly in exploratory and procedural talk” (Dalton-Puffer 2007: 43).

7.2.3. EXPLAIN

As the quantitative analysis in chapter 7.2. has shown, two thirds of all the instances of EXPLAIN were produced by the teachers (53 tokens) and only one third by the students (24 tokens). EXPLAIN refers to the cognitive and verbal action of elaborating on cause & effect relations as well as providing reasons for certain circumstances and essentially giving the “why?” something is the way it is. However, as already pointed out in chapter 4.3.5, I would like to loosen Dalton-Puffer’s (2013) restriction of EXPLAIN for this study also (partially) including aspects such as ‘making something

plain or intelligible; to clear of obscurity' and 'to give details of or to unfold (a matter)' into this CDF. Otherwise, too much of the data would have fallen through the grid and could not have been properly matched with a CDF.

Ex. 12:

In the following passage, the teacher presents (REPORT) background information on the Milgram Experiment and explains (EXPLAIN) what motivated Milgram to conduct his experiment:

1. T2: And he was, eh, a Yale psychology professor and **he wanted to investigate conformity and also to see if people actually followed orders regardless, if they used their own heads while they were following orders or if they just followed them and didn't bother to think on their own.** Ahm, actually Stanley Milgram went to school with Ash, so **he was inspired by Ashe's experiments and he wanted, eh, he wanted to create his own experiment.** And, eh, **he was also motivated by the fact that his parents were Jewish,** so he was from a Jewish family and his parents had fled Nazi-Germany. And this experiment actually took place 3 months after a certain trial. Now, I'm not sure if you recognize that man there {pointing towards picture on wall}?

The teacher explains that Milgram's reasons were manifold, including his general interest in the concept of conformity, his relationship with Solomon Ash (who had already conducted experiments on conformity), and his own Jewish heritage. It should be noted that most of the identified instances of EXPLAIN follow a similar pattern. In the following example, the teacher uses DESCRIBE (process description of the experiment) to EXPLAIN how the test subjects were made to believe that the roles in the experiment were randomly selected and that experimenter and "learner" are not acquainted:

Ex. 13:

1. T2: And they were just told that they were going to take part in a memory experiment, okay? So, **they were deceived** already, so we already have some ethical questions, okay? So, **this is all about deception.** Okay. (.) So this is how the experiment took place. The **participant and the learner were told by the experimenter that they would be taking part in an experiment on memory and learning in different situations.** Two slips of paper were given to the participant and learner and in those slips of paper **they were told they said either learner or teacher on them, so that they could draw a piece of paper to see who would play learner or teacher in the experiment, but in reality, they both said teacher on them.** So it was

fixed. Okay? So they were taken into a room and they were given two pieces of paper and said: "draw this piece of paper" to see who takes the role of teacher or learner in the experiment. **Both pieces of paper said teacher on it, okay? So the participant drew it and went "ahh", I got to be the teacher. And so they thought that it was random.**

2. Sfx: So they didn't know that =
3. T2: = they didn't know that the two were accomplices in the experiment and it was, ahm, yeah, this was a, ahm, **technique to make it even more believable that they were actually in an experiment and it was totally random.**

In passage 1 is essentially a process description (DESCRIBE) of the proceedings of the experiment, but due to its length and the fact that it is all new information to the students, it could also be considered as an instance of REPORT (teacher monologue). However, the intention behind this passage is EXPLAIN, essentially answering why the experimenters proceeded the way they did. The final reason is then found in passage 3. Thankfully, some the data also contained EXPLAIN used by the students:

Ex. 14:

1. T2: Right. We need to move forward, yeah? All about self-knowledge. So what is the true nature of self? He was trying to answer this question. What's the true nature of your-self? Can we come to happiness? Is it that? {pointing at picture of expensive car}
2. Sfx: Mhm. Definitely.
3. Smx: <L1de> Ich glaub schon, ja </L1de> {giggle}
4. T2: Oh come on. If I had that I would be, I would be really happy.
5. S2f: Would you though?
6. Sfx: It would make you only short-term happy.
7. T2: Only short term happy. Okay,
8. S2f: **Yeah, because then your neighbor gets the newer version of that and you are** like mmmh =
9. T2: = Ahhhh, yeah. Exactly.
10. T1: <L1de> Aber das is ein wichtiges Argument [name]. Das is meines Erachtens ein richtiges Argument weil immer die Frage, wenn jemand schon 100 Millionen Dollar verdient (.), dann is immer die Frage was bedeutet das für ihn wenn er dann doch einen Steigerung schafft und dann, äh, 110 Millionen Dollar das nächste Jahr verdient? Begründung liegt immer darin - **es is immer Neid da. Weil er vielleicht jemanden kennt der noch mehr verdient und der, der, und ah deswegen hat es eine Bedeutung.** Sonst würde es ja keine Bedeutung haben letztendlich, ja. </L1de>.

The student's application of EXPLAIN can be found in passage 8, when he uses a subordinate *because*-clause to explain why the new, fancy car in the picture would make only short-term happy. However, this explanation is later completed by the teacher, giving "Neid" (envy) as a reason for the continual accumulation of wealth in

the misguided pursue of happiness. Another episode involving this kind of cooperative construction of EXPLAIN could also be identified in Psychology Lesson 3. Unfortunately, during this episode, students switched back to German as a result of interacting with the German speaking main teacher:

Ex. 15:

1. T1: So ahm, wir habens hier. {pointing towards pictures on wall}. Äh, eindeutige Befehle oder? Er sagt nur: "Machen sie weiter, machen sie weiter". Er sagt nix anderes. Kommt nicht in Diskussion. **Wir haben die stufenweise Annäherung.** Stufenweise, das selbe was du gsagt hast, eine stufenweise Annäherung. **Das hat er ganz bewusst gemacht. 45 Volt und immer 15 Volt erhöhen. Warum? Da gibts ja einen Grund.** Weil wenn ich jetzt schon - was is, was passiert? Jetzt hab ich schon einmal gedrückt, ja =
2. Smx: = **Vielleicht denkt man sich ja 15 Volt mehr oder weniger, das is jetzt auch nicht mehr so oarg.**
3. T1: **Genau.** Einerseits, diese nur 15, das macht jetzt nichts mehr aus. Und das Zweite?
4. Smx: **Es is leichter wenn man schon drin is =**
5. T1: = Natürlich. Ein kleines Verbrechen hab ich eh schon begangen und dann is eh scho wuascht. Das is ja das. Das wir letztendlich hier bereits - und davon is er ja auch ausgegangen - auch im Nationalsozialismus kleine Verbrechen und irgendwann wirds dann größer, klar? (.) Das nennt man hier an und für sich stufenweise Annäherung eigentlich hier, stufenweise Annäherung. Und, ah, **wir werden dann einen Mord begehen wenn wir schon bereits kleine Verbrechen verübt haben.**

Triggered by the question of the main teacher asking why Milgram used a "stufenweise Annäherung" (gradual approach) in the increase of voltage applied by the participants after each false answer (passage 1), the first student formulates his explanation in an explorative manner using the German equivalent of *maybe* to start his answer (passage 2). His explanation is then confirmed by the teacher (passage 3). The other student provides a second explanation in form of a factual, present tense statement using *wenn* (*if*) while omitting *then* to indicate the causal relation. In English, the full explanation could have been formulated as "If you are already engaged in the action then it is easier to continue". In passage 5 the teacher then summarizes the explanations given by the students by embedding them into the wider research context (Crimes in National Socialism). In Philosophy lessons 1+2, explanations by students looked similar but were expressed in English. The context of this example was a class discussion about why we all know what to call certain things (apple in this case).

Ex 16:

1. T1: **Why** do we all know what it is?
2. Sfx: **Because** that's what we were taught.
3. S1m: **Because** we just talked about it.
4. S1f: **Because, because** it was just there. Suddenly.
5. T1: Suddenly? Out of the blue?
6. S1f: Yes.
7. Sfx: **Someone decided** to call it this.
8. S2f: **Someone discovered** it and **then decided** to give it a name **so that other people would know** what to call it.

The request for an explanation is initiated by the teacher asking a *why*-question (passage 1). In turns, three different students give their answers (passages 2, 3, 4) making use of *because*-clauses, but only passage 2 represents a valid explanation. In passages 7 and 8, students show that they can also express their explanations without using *because*. In passage 7 however, the student's answer does not provide a reason for their statement. Subsequently, this is done by student S2f in passage 8, who manages to successfully express the cause (discovery) and effect (decision to name it) relationship as well as the intention behind giving things names (so others know what to call it) by using the linkers *then* and *so that*.

7.2.4. REPORT

The CDF type REPORT is concerned with utterances and statements that represent the language function of informing about something that goes beyond the immediate context of teaching and learning, but still possesses relevance in terms of the general topics dealt with during lessons. Thus, information ought to be selected and organized. This CDF was rarely used by students (4 tokens) but very frequently by teachers (38 tokens). Interestingly, it rarely occurred in isolation but was usually paired with other CDFs:

Ex. 17:

1. S1f: Well, he had that **very special technique** of, ahm, **having a conversation with people** because he **always asked them - like questioned their use** - and he was very genuine about it and he, he **pretended to really not know stuff**. And so the **other person had to explain their opinion and their point of view** an so (.) **Socrates, ahm, kind**

of made them question their own opinions more and **that's why he was so, ahm, successful** and, ahm, **had such an impact**.

In this example, the student gives an answer to the teacher's question about what they happen to know about Socrates and shares it with the entire class to refresh their memory (REPORT). The student colloquially summarizes the Socratic method and at then even adds the argument that this kind of behavior is why he was so *successful* and had *such an impact* (EVALUATE/EXPLAIN). Another similar instance of REPORT was identified in the data of Psychology lesson 4:

Ex. 18:

1. T2: But he only had 40 participants. That's not very many participants, but this experiment has since been recreated and the same results are obtained. The same kind of figures.
2. Sxm: = They actually did the same experiment in Poland in 2015 with the same results. And that's **during a time when most people should be aware what happened during holocaust**. It **still** had the **same effects** on them. That's **pretty interesting**.

Triggered by the teacher's summary of how many participants the experiment had and that the same results had been obtained in later trials, the student provides the class with specific, external information (REPORT) about the same experiment carried out in Poland only 4-5 years ago. He then concludes with a judgment of the results, basically arguing that the results should have been different given that in 2015, everybody should be aware of Milgram's experiment and especially the terrible events of the Holocaust.

Ex. 19:

In this example, REPORT is initiated by the teacher towards the end of the lesson by asking the students to inform the rest of the class about what they have learnt.

1. T1: May I please interrupt your vivid discussion? (.) Ahm, quickly. What do you remember? What do you think you have learnt today? (.) [name]
2. Sf1: **Yeah, we actually learnt that we might learn wrong things, or actually things we don't know if they are completely true. If there is an authority in front of us, like if we believe this person. But we actually never know if it's true.**
3. T1: Ah, yes. So me walking in and telling you things.
4. Sf1: Yeah. It **can actually be, like complete and total bullshit**.
5. T1: Crap. Yes. Absolutely. (.) [name]?

6. S2f: And **even if this authority like a teacher is genuinely honest** and wants us to tell the truth that they believe is true, **maybe they learnt it from a person who didn't tell the truth.** Or from a book that actually isn't true. **There is fake information everywhere.**

What is interesting about this episode of REPORT is that the language used by students closely resembles the one used for EXPLORE (talking about something hypothetical, theoretical). Since Philosophy is a subject involving a lot of speculating and theorizing, the choice of using *maybe*, *might* and *if-clauses* is understandable. After all, Philosophy is not an empirical science that resolves issues but seeks to provide a thorough analysis of different viewpoints, making it inherently hypothetical. Finally, Student S2f ends the group report REPORT with an evaluative statement (EVALUATE) including a factual *there is*.

Having had a look at students' usage of REPORT, I would also like to provide an example involving the teachers who, in this case, provide the students with historical background information on Adolf Eichmann:

Ex. 20:

1. T1: = <L1fr> Äh, es hat so ein richtiges auch Eichmann Ministerium gegeben. Also der war sozusagen dafür verantwortlich, ahm, dass hier alle Juden auch sozusagen verteilt wurden auf die einzelnen Lager. Also er war der big boss eigentlich, ja. </L1fr>
2. T2: (.) Okay, so. He was transportation administrator and he managed all the trains that transported all of the Jews and all the other nationalities to their deaths. He sent 430 000 Hungarians to the gas chambers, but that was after the entire thing had stopped. They had been halted by the Nazis. So he was still doing it (.). You can imagine what kind of evil is lurking behind such a face. **I mean he's just an ordinary guy - looks like it - you could meet this guy in any kind of bureau in the government anywhere. He doesn't look like anything special (.) at all. Just like a normal, sort of old guy.** And he did this kind of stuff (.) and Milgram and other people wanted to know why and how this happened, okay? <to S1f> You wanted to answer the question? </to S1f>

Both passages are essentially teacher monologues providing new information to the students (REPORT). The interesting aspect about the second passage is that we can identify some kind of descriptive evaluation (DESCRIBE/EVALUATE) by the teacher when talking about the picture of Adolf Eichmann presented in the PowerPoint Presentation (see bold print) using adjectives such as *ordinary*, *normal*, *old* and phrases like *doesn't look like anything special at all; you could meet this guy in any kind of bureau*.

7.2.5. DEFINE

When being defined, the CDF DEFINE is essentially concerned with determining which features characterize an object or concept. Overall, 37 tokens of DEFINE (21 for the teachers and 16 for the students) were found in the data. Most of the definitions were restricted to literal translations (mostly teachers) and one-word answers by the students:

Ex. 21:

T2: So he said he didn't know anything and then somehow, he became the most famous figure in **Philosophy**, **which means love of wisdom**, yeah.

Ex. 22:

T2: So his favorite place to ask questions was the **Agora** and **it literally means "gathering place"**, but it was the Athenian market place.

Ex. 23:

T1: Now what is very very **important when we are trying to philosophize?**

S1m: To **ask**.

SS: <1> **To ask** </1>

T1: Yes. Good. **Ask. Critically** if you don't mind.

Ex. 24:

1. T2: So ahm, <L1fr> **Erkenntnistheorie** </L1fr> is in English? <L1fr> Erkenntnistheorie </L1fr> **in English?** Anyone know? (.) Right at the beginning, if you remember? (.) **Episteme =**
2. S3f: **= Epistemology.**

Ex. 25:

1. S3f: Ahm, and do like scientists also recognize that they - that the only - or that they are not - ahm, **when you know everything** - what, what's it called? **Omni =**
2. T2: **= sch =**
3. S3f: **Omniscience.** Thank you. Do they recognize that they are not **omniscient?**

What is interesting about examples 24 and 25 is that the definition in form of a translation is co-constructed by teacher and student. In example 24 the teacher asks about the translation and triggers the answer by giving the first part of the word ('*episteme*' = 'knowledge/understanding') that leads student S3f to complete it with the suffix '*ology*' (= roughly refers to 'science'). In example 25 we find the same process, only that the student is the one initiating the definition this time by paraphrasing the meaning of *omniscient* as '*when you know everything*'. The student even comes up with the first part of the word and completes it with the help of the teacher. Afterwards,

the student also shows that she can use the word in its adjective form as well. Linguistically more sophisticated instances of DEFINE could also be identified in the data:

Ex. 26:

1. Sfx: **I think knowledge is** something - I don't know - you learn from other people. You learn from your friends and you learn at school, so **knowledge is really, ahm, can we do that?** And you can learn different things and know different things. **I think it's also knowledge if you** have social skills and, (.) are able to do something, but in a classical way knowledge is probably what we learn in school and so on.

Here we can see how the student makes use of EXPLORE (*I don't know; can we do that?; I think; if-clause*) to arrive at a personal definition of 'knowledge'. A similar, more collaborative attempt was made at defining the meaning of 'self-conquest':

Ex. 27:

1. S2f: **Would self-conquest signify**, ahm, <L1de> **hinterfragen? Selbst hinterfragen?** </L1de>
2. Sfx: = **I think** <L1de> **Beherrschung** </L1de>.
3. T1: Yeah. **Conquer is**, ahm, <L1de> **einnehmen, also übernehmen** </L1de>. So if it's self-conquest if I cope with what I am. Or I control myself - you could do that as well.
4. Sfx: Or it **could also mean to understand who you actually are. To conquer your true self.**
5. T1: Yes.
6. S2f: So you, ahm, **understand your true self**; you are **able to cope with who you actually are** (.) and you then are **able to hold yourself back** as well?

What we can notice here is that students and teacher use '*translanguaging*' (using all of their linguistic abilities/skills available) to arrive at possible definitions of the term. The fact that more than one definition is given shows that this episode also includes aspects of EXPLORE in form of hypothetical thinking.

Ex. 28:

T2: What's humanity? Well let's not get into that quick. We are gonna go off in a tangent. (.) Okay soul in a sense of the **thinking and willing subject**. So our **inner being**. And you have to learn to care for that **inner being** and it has its **idiosyncrasies** and it has **its feelings** and it's **urges** and its **drives**. But really all it wants to do is **being happy**. Yeah? (.) So your **inner being**. (.)

This example of DEFINE is special since the teacher characterizes an entity that cannot be seen; the human soul. In order to do that, he uses adjectives and nouns to DESCRIBE what soul means (*thinking and willing subject; has its idiosyncrasies, feelings, urges, drives; inner being*), and what the soul (or humanity) wants deep down (*being happy*). When asked about what soul meant to the ancient, Greek Philosophers, students might be required to give an answer similar to the definition presented by the teacher and therefore also use DEFINE and DESCRIBE.

7.2.6. DESCRIBE

The CDF DESCRIBE basically means to present details of what can be seen in verbal or written form regarding an object, a person, an entity, an event, a situation, or a process. In the competency model for PUP, DESCRIBE is mentioned as a part of the competences 'Wahrnehmen und Verstehen' and 'Analysieren und Reflektieren'. In the data obtained however, DESCRIBE played a rather insignificant role with only 15 instances overall of which 4 were realized by the students and 11 by the teachers. This might be due to the topics of the lessons observed, which did not feature any requirement for the students to describe something explicitly. Nevertheless, some simple forms of DESCRIBE were still observed.

Ex. 29:

1. Sfx: It's a <L1de> **Becher** </L1de>. It's a **cup**. A **mug** with a **lid**.

The context of this utterance was the discussion about how people know what to call things. In this example, the student simply names the object the teacher is showing, along with the specific features it possesses (lid). The student shows she is in command of several synonyms referring to the same object (*cup, mug*). Arguably, this could also be considered an instance of DEFINE, as the student uses the German word *Becher* first and then gives two English translations.

Ex. 30:

1. Sfx: Well, he was **sort of ugly**.
2. T2: Sort of ugly? He was **mega ugly**. He would have won an ugly-competition. I swear.
3. S1f: That's why he became a Philosopher.

Here, the student and the teacher use DESCRIBE in an evaluative sense by saying how Socrates looks based on a picture of a sculpture of his head. More complex instances of DESCRIBE were only used by the teachers.

Ex. 31:

1. T2: Okay? (.) So the teacher was then asked to go into a different room, which is the experimental room, okay? And was asked to sit in front of a very very real looking switchboard. **And the switchboard had labels on it and had switches. The switches went from slight shock up to danger, severe shock, and then there was one switch which just had XXX (2).**

While in the process of informing (REPORT) the students about the Milgram Experiment, the teacher uses DESCRIBE to tell the students how the switchboard used in the experiment looked like and what features it had.

Ex. 32:

2. T2: Yeah, to a man with heart condition. And then (.) there is one with XXX on it. And there it is {showing picture of switchboard}, that's the thing that they used. It's very **scientific looking** (.). Alright. Then the teacher **was given** a list of word pairs and they had to read out the word pairs through a microphone to the learner, okay? They **would read the word pairs** and **then** they **would ask the learner**: "Can you tell me which word goes with this half of the pair?" Okay? And they **would just read** one word and say: "Which is it?", and **they were given** 4 options and then the learner would answer. And **if they got the wrong answer**, the teacher had to give them a shock.

In this sample, the teacher shortly describes the switchboard again (scientific looking) and then continues with a process description of the experiment, informing (REPORT) the students about the various steps (using the adverb *then*) and what the participants had to do (using the modal *would* and the conjunction *if*, along with the passive verbal phrases *were/was given*). Almost all of the instances of DESCRIBE took the form of process descriptions similar to the one shown in example 31. I would also like to point out here that in a testing situation, students might be asked to describe the procedures as well.

7.2.7. CLASSIFY

CLASSIFY, which refers to organizing and structuring subject matter of a specific field of inquiry as well as finding similarities, differences and pattern that can be matched with an overarching principle or concept, was the least used CDF in the data. Overall,

only 11 tokens (6 for the students and 5 for the teachers) could be identified. Given the priority assigned to CLASSIFY in the taxonomy of thinking skills developed by Anderson & Krathwohl et al. (2011), the low number of tokens comes as a surprise.

Ex. 33:

1. T2: And the Socratic problem is basically that we don't know anything about him apart from what people wrote about him. **It's a bit like Jesus.** Jesus didn't write anything down. Everybody wrote down stuff after Jesus died and we're like is it really him? Is it really about him? Did that actually happen? You know? So we don't really know anything about Socrates apart from what other people wrote about him.

In this example, the teacher uses CLASSIFY in form of a comparison. In order to clarify what the Socratic problem is he compares Socrates and Jesus of whom we only know about based on what was written down by other people. The adjective *like* (*it's a bit like Jesus*) is used to indicate their similarities. As far as students' realizations of CLASSIFY are concerned, they are usually reduced to rather short utterances triggered by teacher questions:

Ex. 34:

T2: Okay. So today we gonna look at one of the most famous psychology experiments. There is a lot of famous experiments that you need to know in psychology and one of them was already mentioned. The one with the lines. Can you remember who that was by?

S1m: **Wasn't it by Ash?**

T2: It was by Ash, yeah. What was Ash experimenting on? What was he (.) investigating?

Sxf: **Peer pressure?**

T2: **Peer pressure and conformity.**

Okay. Yeah. (.) So, ahm, this is the Milgram Experiment. It goes a bit deeper into conformity, okay?

Ex. 35:

T2: Ahm, and one of his favorite questions was - was basically that one question - one of the four philosophical questions we were talking about with Kant, ahm, how should we live. So he was very interested in the way that the Athenians should be living. So what kind of a question is this? (.) Ahm, what kind of a, ahm, what area of Philosophy are we talking about if we say how we ought to live?

S1f: **Ethics?**

T2: Yes, very good.

In example 34, students are merely asked to match (CLASSIFY) the experiment with its experimenter and to name the concept(s) the experimenter was investigating. This is done with *counter questions*, indicating that the students are not completely sure about their answers, expecting a confirmation by the teacher. The same pattern can be found in example 35. Here, the student simply gives the superordinate term for the

field of Philosophy described by the teacher. One could therefore argue that the classification was co-constructed in exploratory talk.

Finally, the interviews conducted with the teachers have also shown that they are aware of the interplay between language, thinking and learning (elaborated in chapter 4.1.1.) and that CDFs play a role in their teaching even if they are not explicitly familiar with Dalton-Puffer's CDF construct. For example, *explaining, defining, describing, arguing, hypothesizing, reflecting, presenting, criticizing, and classifying*, albeit not always explicitly, was mentioned by the teachers in some way. The following excerpts from the transcriptions of the interviews provide some examples in that regard:

Excerpts from interview teacher school 1:

Ex 36:

T: They for example find out they can cope with terms, content, theories, ideas, even when using the foreign language. They experience their skills and success when discussing or presenting philosophical and psychological contents in English. (REPORT)

Ex 37:

T: Well, I try to start with examples, situations and problems which students deal with in the first place (.) and then we work our way towards the philosophical and psychological theories. (CLASSIFY)

Ex 38:

T: For me it is also important that students deal with philosophical and psychological topics, to analyze them independently, to form their own opinions and draw conclusions based on what they have learnt. I want them to be able to give proper explanations for the relationship between philosophical and psychological topics and their real living environment. (EXPLAIN)

Excerpts from interview teacher school 2:

Ex 39:

T: Die Vierte ist eine Kompetenz die sich äh also hier ergibt dass wir uns hier frei äußern. Diese Kompetenz der sprachlichen Formulierungen und genau achten auf die sprachlichen Formulierungen. Das ist mir in Philosophie sehr wichtig, dass wir wissen worüber wir reden und dass wir nicht dampfplauden sondern letztendlich hier ganz bewusst mit Sprache umgehen (.) also erklären, definieren, beschreiben und dann letztendlich auch immer argumentieren. (DEFINE, DESCRIBE, EVALUATE)

Ex 40:

T: Philosophie betreffend ist natürlich auch das Reflektieren etwas das unbedingt genannt werden muss und, ähm, vermutlich auch das Aufstellen von Hypothesen, also aktives hypothesisieren über bestimmte Sachverhalte. (EVALUATE; EXPLORE)

Ex 41:

T: Schüler sollen auch die Fähigkeit entwickeln auch Perspektiven einzunehmen. Und diese Kompetenz hier ist eigentlich auch, ahm, die Fähigkeit zur Kritik. (EXPLORE, EVALUATE)

8. Conclusion

In this thesis, I have tried to provide an overview of what CLIL is, how and where it originated, how it is different from other similar approaches and why and how it should be implemented.

CLIL is essentially a complementary form to regular second language teaching in which content knowledge and language acquisition are equally fostered, without having to introduce extra lessons. Based on SLA theories, the consensus seems to be that foreign language acquisition requires a focus on meaning and not only on form. If the content (input) presented is meaningful and comprehensible and embedded within natural, authentic discourse and interaction that allows them to practice the language (output), then students' language proficiency will improve. Within this process, scaffolding takes a central role as teachers need to guide and support students in overcoming linguistic obstacles to express their ideas and solve the problems/tasks/exercises at hand. CLIL offers that kind of learning environment.

Yet, the educational goals of CLIL are manifold, ranging from preparing students for life in a multi-cultural and internationalized society and conveying respect and tolerance for the culture of the target language, over using language for practical purposes and motivating students to learn languages, to simply improving students' overall communicative skills. In General, CLIL is a very diverse approach to second language teaching that is realized differently in numerous socio-cultural contexts throughout Europe, including top-down governmental policy and grassroots movements initiated by individual schools or teachers.

With regards to Austria, CLIL seems to become more and more popular as many schools adopt the CLIL approach in a variety of subjects such as natural sciences, political education, economics & business, geography and history. Even in primary education CLIL is being implemented across all subjects available. However, CLIL in Austria is more or less using the target language as a medium of instruction (*Fremdsprache als Arbeitssprache; Englisch als Arbeitssprache*), with the primary focus on content and language fluency. Form is usually not overtly addressed.

Overall, CLIL has proven to be very effective in fostering students' language abilities, even if there are some concerns that only the linguistically proficient students participate in CLIL programs or that it is simply the extended exposure to the target language that causes the positive outcomes. Concerning the acquisition of content knowledge, only a small amount of research has been conducted so far. The research conducted indicates that content knowledge acquisition does not seem to suffer in CLIL settings, but the positive effects are also scarce. The acquisition of content knowledge seems to take longer due to the dual-focus on language and content, but in general, CLIL students appear to be as successful in learning subject content as their non-CLIL counterparts.

In terms of how content and language can be properly integrated in a CLIL context to facilitate students learning processes, there seemed to be uncertainty. And this is where the interrelatedness of language, thought and learning comes into play. In this thesis it has been shown that language, cognition and learning (in terms of creation of knowledge) are practically inseparable since thinking occurs in language and learning occurs in thinking and therefore language. Thus, language takes a functional role in knowledge acquisition and also in application in terms of externalizing cognitive processes. To quote Dalton-Puffer again:

Under a social and contextual theory of language and learning we must assume that these verbal actions of representing knowledge, showing epistemological stance, or modeling cognitive strategies are constitutive of learning itself and represent what has variously been called academic language (Dalton-Puffer 2013: 220)

Hence, the construct of cognitive discourse functions was introduced (Dalton-Puffer 2013), which provides a framework for the integration of content and language in CLIL. With PUP not being a typical CLIL subject in Austria, this thesis intended to show that the CDF construct can build the bridge between PUP education and CLIL and therefore provide teachers interested in teaching PUP as a CLIL subject with a framework for

content and language integration. The theoretical analysis of the PUP competency model and operators provided by the guidelines for competency-oriented PUP education showed significant overlaps between PUP competences and CDFs, and especially the operators and CDFs. Furthermore, the empirical study conducted for this thesis showed that CDFs are commonly used in PUP in a CLIL settings. Thus, in combination, the theoretical and empirical analysis have provided an indication for the validation of the CDF construct in PUP education. As the empirical part indicates, all CDF types occurred within natural classroom interaction. Thus, the CDF-construct can function as an overarching framework for content and language integration in PUP and as a guideline for CLIL teachers.

In total, 372 instances of CDFs were identified in the data, of which 230 were realized by the students and 142 by the teachers. In terms of who realized them, the two schools investigated in this study showed certain differences. In School 1, the teacher only used 6 CDFs (DEFINE 5x; CLASSIFY 1x), while all the other CDFs (which included all types) were used by the students (94%). This can be attributed to the student-oriented teaching style that focused on an independent handling of the materials provided on Moodle. In School 2, the teaching was more frontal, with the teacher providing content input via PowerPoint Presentations. As a result, the distribution of CDFs was approximately 50:50. Yet, the comparison of the students use of CDFs in both schools showed that essentially the same CDFs were used to very similar extents. Thus, despite the differences in methodology, CDF use by students was basically equal. The comparison between CDFs used by students in Philosophy lessons and Psychology lesson also provided an indication that both subjects seem to trigger the same CDFs and also to very similar degree.

The most dominant CDF types in the data were EXPLORE and EVALUATE, both with almost 90 tokens identified for the students. They were mostly realized in explorative, dialogic with the teachers as well as among the students themselves. This sits well with educational objectives of PUP as students are supposed to think on their own and reflect, develop their stances in open talks and dialogues and to use the presented content for reflection and justification of their arguments. As the transcripts show, students were enabled to do that during the lessons.

EXPLAIN was the third most CDF identified, albeit in majority realized by the teachers (53 tokens). Students made use of this CDF only 24 times, which amounts to one third of the overall realization of EXPLAIN. The teachers mostly used EXPLAIN to indicate

why an experiment followed certain steps or why the experimenter wanted to investigate a psychological phenomenon. The students mostly used EXPLAIN to give reasons for their personal stances or to explain the behavior of people in various contexts.

REPORT comes in at fourth place with 42 tokens and was almost exclusively used by the teachers in form of teacher monologues and presenting the students with new information. Only 4 tokens could be identified for the students, which included presenting the learning outcomes of the lesson giving individual background knowledge in connection to the topics dealt with.

In fifth place, we find DEFINE with 37 tokens identified in the data. Most instances of DEFINE were used by the teachers (21) and included definitions of subject specific terminology, theories or concepts as well as characterizations of non-observable entities (human soul, Eudaimonia). The students (16 tokens) also made use of DEFINE a similar fashion, either paraphrasing and presenting the meaning of a word in their own words or giving German translations.

Second to last, we have DESCRIBE. Overall, this CDF was scarcely used by both teachers (11 tokens) and students (4 tokens). Students only used it to describe an object in the process of finding out how people know what to call things (epistemology) and to give an evaluative description of Socrates' looks. The teachers in school 2 used DESCRIBE in longer passages that involved process descriptions of the steps taken during the Milgram Experiment.

Last but not least, CLASSIFY. Realized by teachers and students to equal degree, it was either used to make comparisons or to match psychological and philosophical concepts and ideas with their originators. Thus, it did not play a significant role in the lessons observed, but might be used when dealing with different topics.

Finally, the shortcomings of this study need to be addressed. While the theoretical analysis has shown that PUP competences and CDFs are indeed a good match, the empirical study is based on a relatively small sample size. Therefore, the results can only be considered as indications as more quantifiable examination is needed. Even if it has become evident that CDFs play an important role in PUP education and occur naturally in PUP classroom interaction in various lexico-grammatical forms, empirical investigations of how PUP competences and CDFs correlate need to be undertaken. For instance, this could be done by devising competency-oriented oral tests similar to

the Matura examination and to have both CLIL and non-CLIL students take them for comparison.

In general, PUP teachers should be aware of the role language plays in their subject and pay more attention to the fact that language, thinking and learning are inseparably interlaced. I hope that this thesis has contributed to this desired development, that it will spark further research in the future and that it will motivate and inspire other PUP teachers to make use of advantages of CLIL.

“The limits of my language mean the limits of my world.”
- Ludwig Wittgenstein -

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10. Appendix

A. Teacher interview: Questions

1. What are the reasons you decided to conduct PP in English? (first)
2. What are your main objectives / goals of conducting Psychology & Philosophy in English?
3. Which competences do you intend to foster with interdisciplinary teaching?
4. Are there overlapping objectives for both subjects? (English and PP respectively). Which aspects of English and PP didactics overlap? Where do you see synergies?
5. In how far does your teaching adhere to both competency based curricula of English and PP?
6. Which methodological approach do you prefer in this interdisciplinary setting?
7. Is there any overarching framework that connects both the content and the language subject?
8. What do you think are the benefits for your students of doing PP in English / Challenges?
9. What aspects of English are important to you in a PP lesson (are there any English related goals?)
10. When you first implemented CLIL, what have you changed and what are you doing differently now?

B. Information sheet and declaration of consent



universität
wien

Supervisor: Univ.-Prof. Mag. Dr. Julia Hüttner, MSc

Mail: julia.huettner@univie.ac.at

Student: Gabriel Pischinger

Mail: a01005034@univie.ac.at

Einverständniserklärung

Liebe Schülerinnen und Schüler des BRG 14,

mein Name ist Gabriel Pischinger und ich bin Student an der Universität Wien. Ich studiere Englisch und Psychologie & Philosophie auf Lehramt und arbeite momentan an meiner Diplomarbeit für den Abschluss meines Magisterstudiums.

Zweck der Audioaufnahmen

Im Zuge meine Diplomarbeit beschäftige ich mich mit fächerübergreifendem Unterricht und untersuche welche Faktoren für erfolgreichen Psychologie & Philosophie Unterricht auf Englisch notwendig sind. Dafür benötige ich authentische Audioaufnahmen einer solchen Unterrichtssituation.

Rahmenbedingungen

Die Audioaufnahmen und gesammelten Daten werden selbstverständlich anonym und vertraulich behandelt, nicht an Dritte weitergegeben und lediglich für akademische Zwecke im Rahmen der Diplomarbeit verwendet. Dies bedeutet, dass weder Namen, noch Schule, noch Schuljahr explizit genannt werden. Des Weiteren werden die Daten auf einem passwortgeschützten Computer gespeichert. Die Teilnahme an dieser Studie ist natürlich freiwillig und kann jederzeit zurückgezogen werden.

Unterschrift

Mit eurer Unterschrift bestätigt ihr, dass ihr die oben genannten Punkte gelesen und verstanden habt und den Rahmenbedingungen zustimmt. Ich hoffe ihr helft mir dabei mein Studium erfolgreich abschließen zu können.

Vielen Dank, Gabriel Pischinger

(Datum; Ort)

(Name u. Unterschrift)

C. Abstract

In Austria, numerous CLIL programs have been implemented in primary and secondary education over the past two decades, with the most common subjects being natural sciences like physics and biology and social sciences like history and geography. The endeavor of this thesis is to provide a comprehensive compilation of what CLIL is, how it developed, what educational objectives, advantages and disadvantages it has, and how it is currently implemented in Austria. Furthermore, a closer look is taken at the interrelatedness of language, cognition and learning, to see how content and language can be properly integrated in CLIL. The construct of Cognitive Discourse Functions developed by Dalton-Puffer (2013) proposes to constitute “a zone of convergence between content and language pedagogies” (Dalton-Puffer 2013: 1) and thereby gives CLIL teachers a useful framework to work with. So far, Philosophy & Psychology has been mostly left out as a potential CLIL subject, but the CDF construct appears to be the necessary missing link to make content and language integration generally applicable to Philosophy & Psychology education. The study conducted in this paper aims at providing a theoretical and empirical validation of the CDF construct for PUP education. First, an analysis of the guidelines for competency-oriented PUP teaching in Austria was conducted and mapped with the CDF construct. This showed significant overlaps between PUP competences (as well as the operators used for the Matura examination) and CDFs. To see in how far CDFs are relevant in actual classroom interaction, interviews with two teachers who have implemented the CLIL approach were conducted. Albeit not mentioning them explicitly, there seems to be an understanding of the role of CDFs in their teaching. Furthermore, four CLIL PUP lessons of the respective teachers were recorded and the obtained data was analyzed to investigate if CDFs are realized, which CDFs are realized, to which extent and by whom. The results confirmed that all CDFs play indeed a significant role in PUP education and that the use of the most relevant CDFs (according to the mapping with the competences) is fostered.

Key words: CLIL, Cognitive Discourse Functions, Philosophy & Psychology education, PUP competences, Language, thought and learning, bilingual PUP education

D. Zusammenfassung

Während der letzten beiden Jahrzehnte sind in Österreich viele CLIL Programme eingeführt worden, sowohl im primären als auch im sekundären Bildungssektor. Die häufigsten Fächer in diesem Kontext sind Naturwissenschaften wie Physik und Biologie, und Sozialwissenschaften wie Geschichte und Geografie. Das Unterfangen dieser Arbeit liegt darin eine umfassende Zusammenstellung abzubilden was CLIL ist, wie es sich entwickelt hat, welche Bildungsziele, Vorteile und Nachteile es hat, und wie es in Österreich implementiert wird. Des Weiteren wird ein genauerer Blick auf die Verknüpfung von Sprache, Kognition und Lernen geworfen, um zu sehen wie Inhalt und Sprache ordentlich integriert werden können. Das Konstrukt der kognitiven Diskursfunktionen (Cognitive Discourse Functions, CDFs) das von Dalton-Puffer (2013) entwickelt wurde soll eben genau diese Integration von fachspezifischer Pädagogik und Sprachpädagogik ermöglichen. Dadurch wäre CLIL Lehrerinnen und Lehrern ein hilfreicher Rahmen geboten mit dem sie arbeiten können. Bis jetzt ist das Fach Philosophie und Psychologie als potenzielles CLIL-Fach meistens außen vor gelassen worden, aber das CDF Konstrukt scheint die notwendige, fehlende Verbindung zu sein um die Integration von Inhalt und Sprache auch für den PUP Unterricht anwendbar zu machen. Die Studie die im Zuge dieser Arbeit durchgeführt wurde zielt darauf ab, eine theoretische und empirische Bestätigung für das Konstrukt der CDFs in Bezug auf PUP herzustellen. In erster Linie wurde eine Analyse des Leitfadens für kompetenzorientierten PUP Unterricht unternommen und mit dem Konstrukt der CDFs abgeglichen. Dies zeigte maßgebliche Überschneidungen zwischen PUP Kompetenzen (als auch den Operatoren die für die Reifeprüfung verwendet werden) und den CDFs. Um zu sehen inwiefern das Konstrukt im Klassenraum auch tatsächlich relevant ist wurden Interviews mit zwei Lehren durchgeführt, welche bereits einige Erfahrung mit CLIL im Kontext von PUP hatten. Auch wenn es nicht explizit ausgedrückt wurde konnte man dadurch dennoch erkennen, dass es ein Verständnis für die Rolle der CDFs in ihrem Unterricht gibt. Des Weiteren wurden vier Unterrichtseinheiten dieser Lehrer aufgenommen. Die dadurch erhaltenen Daten wurden untersucht um herauszufinden welche CDFs in welchem Ausmaß von wem verwendet werden und wie sie sich sprachlich im Diskurs äußern. Die Resultate zeigten, dass alle CDFs in der Tat eine wichtige Rolle im PUP Unterricht spielen und, dass die Verwendung der wichtigsten CDFs (gemäß dem Abgleich mit den Kompetenzen) gefördert wird.

Schlagworte: CLIL, CDFs, Zweisprachige PUP Erziehung, PUP Kompetenzen, Englisch als Arbeitssprache, Sprache, Denken und Lernen