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Cognitive discourse functions in Austrian upper secondary EFL classes

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1 Introduction

The field of applied linguistics can be considered as a mediator between practice and the theoretical framework of linguistics. Linguists have found out that language is an instrument of expressing thought or cognitive skills. An aspect of language use that is directly influenced by this connection is the language of schooling. Therefore, researchers have tried to investigate phenomena that are of importance for the practical field of future teaching, thereby mediating between theory and practice. Research endeavors have examined how language is used for expressing thought in the classroom. A recent attempt of capturing this is Dalton-Puffer's (2013) construct of Cognitive Discourse Functions (CDFs). The model was designed in a special environment, Content and Language Integrated Learning (CLIL). This teaching methodology promotes a balance of both language and content in subjects like Geography, History, Biology etc., which is hardly ever met in real classrooms. Dalton-Puffer's construct presents seven functions that are expected to appear in any classroom, irrespective of the subject being taught. The functions represent thinking skills that are realized by means of language, namely CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT. The model is intended to serve as a heuristic for finding cross-curricular similarities. At some point in the future the construct might support CLIL teachers in the incorporation of both language and content in their lessons.

However, studies that test the construct's applicability for real life classrooms are still low in number (cf. Lackner 2012; Kröss 2014). Dalton-Puffer herself concedes that a "fact-finding mission" is necessary for the development of the CDF model. Even though her construct is based on some empirical grounding, more studies are needed to gain further insights into the nature of CDFs in real classrooms. These observations allow necessary adaptations in order to augment the theoretical model's usefulness for practitioners.

This study answers to Dalton-Puffer's call and aims at investigating whether the above-mentioned CDFs are present in Austrian EFL classrooms. Precisely speaking,

Lower Austrian upper secondary EFL (English as a Foreign Language) lessons are analyzed in terms of the CDF construct. Apart from the main aim of testing the construct's applicability, this study also discusses the questions of which CDFs are realized by whom and how, i.e. in terms of lexico-grammar. Moreover, this study tries to find similarities and differences between two Austrian school types, the grammar school and the vocational school (AHS and BHS). Finally, the aspect of meta-talk on CDFs is considered as well.

In order to answer these questions, a thorough theoretical discussion of cognitive psychology, prototypical academic language and Dalton-Puffer's CDF construct is provided as the basis of this empirical study. After the presentation of the methodology of this quantitative and qualitative survey, the main part of this thesis answers the questions posed above. First of all, the occurrences of the CDF types are dealt with. Then, it is clarified who the initiators of the CDFs are. Moreover, a comparison of the AHS and BHS is provided. Furthermore, the lexico-grammatical realization is a main aspect of the analysis. Finally, meta-talk is briefly touched upon.

2   Cognitive psychology

To begin with, an analysis of cognitive discourse functions cannot leave the realm of cognitive psychology unnoticed. Put differently, such an analysis must also ask for the relationship between thought and language. The first crucial question that needs to be answered is whether this relationship exists or not. Following established researchers in the field like Lev Vygotsky and Michael A.K. Halliday, this question can be answered in the affirmative. Having established the connection between cognition and linguistic realization, the next step is to investigate the nature of this bond. In order to do this, this chapter first discusses the similarities and differences as regards language and cognition that were found by studies with chimpanzees. Next, it shortly investigates ontogenetic development. After addressing the important issue of interaction in language acquisition, the chapter goes on to explain the semiotic nature of language, i.e. how language is used for making meaning and how it simultaneously makes meaning itself. This leads directly to the heart of this study, namely the functions of language. Finally, an important distinction is drawn between everyday and educational functions of the linguistic system.

2.1   The language of apes

As far as language and cognition of chimpanzees are concerned, they have been found to have "an intellect somewhat like man's *in certain respects* […] and a language somewhat like man's *in totally different respects*" (Vygotsky 1986: 79-80; original emphasis). Referring to the cognitive aspect of this argument, what Vygotsky means is that apes do use tools to solve a problem. However, they need to see both the problem and the solution, i.e. the tool, at the same time, otherwise they cannot make use of it (Vygotsky 1986: 77). Therefore, their use of tools is not based on memory or cognition – as is humankind's – but on visual input (Vygotsky 1986: 77). The linguistic aspect of the argument mentioned above is concerned with the fact that chimpanzees do have a number of 'words' that are phonetically similar to human speech and that they do use language for both "emotional release" and for socializing (Vygotsky 1986: 78-79). This distinguishes anthropoids from other

animals such as geese, which are not capable of sophisticated communication due to the absence of a system of signs, i.e. a language (Vygotsky 1986: 7). Nevertheless, it was also found that the intellect and the language of chimpanzees cannot co-operate (Köhler 1973, cited in Vygotsky 1986: 78). This, amongst other findings[1], leads Vygotsky (1986: 80) to the conclusion that the close bond between thought and language that is typical of human beings is not present in apes. Quite the contrary, their language "functions apart from [their] intellect." (Vygotsky 1986: 71) It can thus be summarized that, in connection with cognitive psychology, humans and apes share certain features, but they are nevertheless distinctly different in many respects. The single most important similarity that Vygotsky established refers to a phase in the ontogenetic development of the child, which is investigated in more detail in the following paragraph.

2.2   Ontogenetic development

It is stated above that there is no simultaneous display of thought and language by chimpanzees. The ontogenesis of the human child also involves a stage when cognition and linguistic realizations are unconnected, or, to use Vygotsky's (1986: 81) words, there is an "independence of the rudimentary intellectual reactions from language." He alludes to the babbling and crying of the very young child (less than one year) and their first words, which are proven not to represent intellectual actions. Consequently, Vygotsky (1986: 83) states that thought and language spring from different roots and that their development does not run parallel. This is an important investigation for this thesis, even though it is primarily concerned with first language (L1) acquisition, because of its resemblance to the relationship between subject matter and second language (L2) learning. Upper secondary students of English as a Foreign Language (EFL) who are taught content subjects like history, geography or biology in English, might be cognitively able to solve a

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[1] The scope of this thesis does not allow a thorough discussion of further arguments in favor of Vygotsky's conclusion. For further details see "Vygotsky, Lev. 1986. Thought and language. Massachusetts: MIT." (Chapter 4).

certain task but quite often lack the appropriate language for doing so. To put it differently, their linguistic development in the L2 lags behind, i.e. is independent of their cognitive development. This issue is again commented on in chapter 3 on academic language.

2.3 Social interactionist theory

Having discussed the resemblance of anthropoid cognitive psychology and an early ontogenetic phase, it is now time to shift the focus to the linguistic development of the human child. Adhering to the principles of Vygotskian social interactionist theory, a number of researchers (Eckerth 2009: 109; Walsh 2006: 20; Dalton-Puffer 2007b: 8 - referring to Vygotsky) stress the fundamentality of interaction for language learning. The central argument thus is that it is only through interacting with, i.e. listening and talking to, their social environment that the child learns a language, the crucial aspect being the provision of necessary input. Eckerth (2009: 109) elaborates on the major role of interaction by underlining that it is not only the most common way of providing input, but it is also the best means of fostering language acquisition (in comparison to written input, for example). Additionally, both Eckerth (2009: 109) and Walsh (2006: 22, 24) emphasize the importance of negotiating for meaning in the context of L2 learning. Negotiating for meaning means that speakers of a language – not only in an educational environment but also in everyday communication – who are engaged in interaction try to work out the meaning of what is said by the interlocutor. They do so by formulating questions, paraphrasing previous statements, asking for clarification or requesting additional information. Walsh (2006: 24) is certain that this process of making meaning reveals that language acquisition has taken or is taking place. Naturally, the social interactionist theory is not *the* theory of language acquisition, but it is only one school amongst many. At this point, reference could for example be made to Behaviorism or Nativism, which constitute two very different approaches. Yet, it is beyond the scope of this thesis, and of this chapter in particular, to provide a

thorough description of language learning theories in general.[2] Since the empirical study presented later in the thesis analyzes oral interaction in EFL classrooms, it was necessary to mention the social interactionist theory at least briefly here. More important than this global approach to language learning, however, is the nature of the relationship between thought and language. This connection is at the center of attention of the next section.

2.4   Language as a social semiotic

Concerning the semiotic nature of language, the point of departure should be Vygotsky's (1986: 2-5) argument that history provides two basic approaches for the study of cognitive psychology, namely a) fusion or identification of thought and language and b) segregation or disjunction of thought and language. He opts for the first alternative and calls for an "analysis into units" as opposed to an analysis "into it components". This means that, as stated above, the close connection between cognition and linguistic realization should again be emphasized. Similarly, Lemke (1985: V) underlines that language cannot be separated from meaning, thus it is never neutral but, conversely, it builds meaning. Furthermore, he explains that language is not only a means of communication, but it is also used for performing actions and creating situations (Lemke 1985: 5). When Lemke says language performs actions, he means that we do something with the language, e.g. we comfort a baby, we hurt somebody's feelings, we negotiate etc. He also states that language creates situations, meaning that the language that is used at home will strikingly differ from the language that is used in a business meeting. These above-mentioned features of language clearly show that language cannot exist on its own. Consequently, thought and language must be acknowledged as being closely connected. There is a term that succinctly summarizes this interdependence, i.e. social semiotic.

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[2] For a detailed discussion of language learning theories, please see Mitchell, Myles & Marsden. 2013. *Second language learning theories* (3rd edition). London: Routledge.

Language as a social semiotic is a concept that was coined by Michael A.K. Halliday. It means that language is seen "as a resource for meaning, centrally involved in the processes by which human beings negotiate, construct and change the nature of social experience." (Lemke 1985: VI, referring to Halliday 1978) This summary again addresses the fact that language is not solely a communicative tool, but it is also part of performing actions, i.e. constructing social experience, and in creating situations, as outlined above. This means that learning a language involves more than learning how to speak, it also involves "learning how to mean" (Halliday 1977: 24). What's more, not only does Halliday see language as the "prototypical resource" for making meaning, but he also, quite generally, considers language the basis of all types of learning (1993: 93). In other words, Halliday maintains that any type of learning is impossible if it happens independent of language.

This argument is in line with Vygotsky's notion of signs and tools. In Vygotskian (1978: 54-55) terms, both a sign and a tool have a mediating function, but while signs are used in internal processes that aim at impacting on behavior, tools are oriented toward the external world, trying to change objects or nature. Only the combination of these two concepts results in higher thinking or higher behavior (Vygotsky 1978: 55). This view highlights the importance of the semiotic nature of language, i.e. the sign. Higher thinking is not possible without language and vice versa. This points at another crucial aspect of cognitive psychology, namely that, apart from being a means of communication, language serves a great number of functions which are considered in more detail in the following section.

2.5   Functions of language

After having outlined the semiotic nature of language – that it is used for making meaning – this paragraph explores what it is used for, or, more precisely, which functions it fulfills. In his groundbreaking book *Explorations in the functions of language* Michael A.K. Halliday (1977: 26) defines functions of a language as "certain definable patterns, certain options" a speaker has when engaging in communication. He explains this by giving the example of a visit at the doctor's. Even though, he

admits, it is possible that certain patients do not only talk about diseases and medical treatment but also chat with their doctor, usually the language used during an examination shows global similarities (Halliday 1977: 26). A related example revolves around congratulations. Typically, speaker A would express their compliments and speaker B would thank the congratulator. Independent of the context – be it a birthday, a wedding or a graduation – this pattern still applies. In Hallidaian terms, this pattern is called a function of language.

By referring to the linguistic development of a child, Halliday (1977: 28-32) tries to give an intelligible account of basic language functions. First of all, a child uses language in order to satisfy material needs, e.g. food or body care. Secondly, language is applied to control the behavior of others, for example when demanding an action, like throwing a ball. Thirdly, there is the interactional function, referring to actions like greeting or calling. In other words, a child may use language for three different purposes: They either want to raise their environment's attention and make clear that they are hungry. Another possibility is that they want to be entertained. Finally, it is also possible that they simply want to make contact with their environment.

Even though child and adult language do resemble each another, there is one main difference concerning functions. According to Halliday (1977: 34) each utterance of a child serves exactly one function, whereas an adult's statement is usually the expression of several functions at the same time. In order to make this argument more comprehensible, different aspects of the following example sentence (1) are investigated.

(1) Welcome home, darling, was your flight very turbulent?

Along with the basic notion that underlies this question, namely asking how a flight was, the question reveals a number of things about the speaker and the relationship between the two speakers. First of all, the speaker is referring to his or her background knowledge. Most probably he or she had listened to the weather forecast which said that the weather would be rough. Secondly, the sentence shows

that the speaker is aware of the fact that the addressee has been away (on holiday, on a business trip etc.) for a while. Moreover, the term of endearment 'darling' indicates that the interlocutors have a very close relationship. They might for example be husband and wife or mother and daughter. Finally, the addressee could also infer that the speaker cares for him or her and that he or she is interested in his or her well-being. In this regard, the adult statement differs strongly from an exclamation such as *Bread!* that a small child would use to have their need for food satisfied.

Consequently, the question that arises is how child language develops into adult language. Halliday (1977: 36) calls this process functional reduction, which on the one hand means that the small collection of functions that is at a child's disposal slowly becomes more varied; on the other hand the system that is used to express these functions, i.e. language or grammar, simultaneously stays the same. Put differently, an adult has a variety of functions available, but only a steady set of grammar to perform them. In a nutshell, there is no one to one relationship between functions and linguistic representations in adult language.

Since there are such a great number of different functions an adult needs in his everyday life, writing an exhaustive list would be preposterous. Instead, Halliday invented three meta-functions that serve as a comprehensible holistic bracket. These are the ideational, interpersonal and textual function (Halliday 1977: 40). By ideational, Halliday (1977: 37) means that language is used for "expressing a content in terms of the speaker's experience and that of the speech community." In this respect, the first function answers the questions of why something is uttered or written and what the text is about. Secondly, the interpersonal function deals with any linguistic act that shows "social and personal relations, including all forms of the speaker's intrusion into the speech situation and the speech act." (Halliday 1977: 41) The second function responds to the question of who the addressee of a text is. Thirdly, the textual function acknowledges that language "should have a texture, in real contexts of situation" (Halliday 1977: 42). This means that the textual function revolves around the issue of presenting information in a coherent and logical way,

therefore, the interest of this last function lies in analyzing the linguistic aspects of a text.

However, this functional diversity outlined above does not correlative with the same kind of linguistic diversity. A language has only one grammar, not an open number of different grammars for each function. Since one grammar has to fulfill the overwhelmingly great number of functions mentioned in the previous paragraph, necessarily, there is a connection between form and function. Both Lemke (1985: 6) and Halliday (1977: 22-23) assert that a relation between these two exists. Halliday (1977: 34) even argues that language is shaped by its functions. Similarly, he maintains that "[t]he internal organization of language is not accidental" (Halliday 1977: 43-44), meaning that grammar does serve a particular purpose. He is referring to thousands of years of human language development that peaked in the heavily coded language that is known to us today. Halliday (1977: 79) introduces another term that accounts for the fact that social meanings, i.e. threatening someone, praising someone etc., are expressed by means of language. He calls it a semantic network, i.e. the mediator between "behaviour [sic] patterns and linguistic forms." (Halliday 1977: 83) In conclusion, language is far more complex than the everyday user might expect and it has a great number of features that are not overtly visible.

2.6   Everyday vs. academic language functions

Having mentioned the everyday user directly leads to the final point made in this chapter, namely that a distinction has to be drawn between everyday and educational language functions. In his article *Towards a language-based theory of learning* Michael A.K. Halliday (1993: 93) separates common sense, or everyday, knowledge, and educational knowledge. While common sense knowledge primarily refers to spoken language, educational knowledge usually takes the form of written language (Halliday 1993: 109). Naturally, the language functions used in these two areas will differ. In everyday life, typical language functions are, for example, greeting and buying something in a shop. In educational or academic settings

speakers have very different needs, such as hypothesizing and defining. The topic of everyday vs. academic language in general is discussed in more detail in the next chapter.

The first chapter revolved around cognitive psychology, in other words, around the relationship between thought and language. In the beginning, an analogy was drawn between the language of chimpanzees and humans. It found that the language of apes differs fundamentally from human language, because they cannot simultaneously 'speak' and think. In a second step, the ontogenetic development of the human child was discussed, the results being that cognitive and linguistic maturation run along different lines that only meet at certain points. Afterward, an influential language learning theory, social interactionist theory, was presented in some detail. Following this section, the semiotic nature of language was outlined, emphasizing that language cannot be separated from thought. In Lemke's terms, language is not a neutral entity, quite the contrary, it makes meaning, performs actions and creates situations. The central part of this chapter dealt with the different functions a language serves. Starting with Halliday's tripartite model of basic child language functions, the discussion also included his construct of meta-functions of adult language (ideational, interpersonal and textual). The close connection between function and linguistic form was also highlighted. Finally, it was pointed out that language functions differ according to their environment. In everyday situations, language fulfills different functions than in an academic setting. The next chapter provides a thorough description of academic language and its functions.

3 Academic language

After the discussion of cognitive psychology, which confirmed an inseparable connection between thought and language and underlined the important social functions of language, this chapter's investigations can now steer toward a different objective: It centers on academic language. Initially, more light is shed on the distinction between everyday and educational language. The focus then shifts to academic language in particular and its importance for learning. Thirdly, the analysis of typical features of academic language plays a major role, as do the functions that academic language serves. Furthermore, this chapter looks more closely at classroom language and finally presents proposals on how successful teaching of academic language functions (ALFs) might look like.

3.1 Everyday vs. academic language revisited

To start with, the binary opposition of everyday and academic language needs to be discussed in more detail. This distinction goes back to the influential binary model of BICS and CALP by Cummins, dating back to 1979. BICS refers to Basic Interpersonal Communciation Skills and CALP is an acronym for Cognitive Academic Language Ability. According to Dalton-Puffer (2013: 225) Cummins established this binary distinction in order to clarify why some students with a very high proficiency in a language still do not succeed in educational environments. The reason, according to Cummins, is that interpersonal or everyday language is a different aspect of language than academic language. Therefore, a student who is fluent in small talk might not necessarily write successful papers in biology, for example. In section 2.2 it is stated that EFL students often lack the appropriate language for solving a certain task. This problem points at the central aspect of Cummins' argument: The reason why they do not succeed is the absence of CALP. Despite their cognitive ability, they do not know how to express themselves appropriately, because they have no training in academic language.

Right after the model was published, but especially in the last two decades, Cummins' way of correlating language proficiency and academic success has given rise to critique. According to Bunch (2006: 286), Cummins' has been accused of "ignoring the sociopolitical context of schooling [...] and [of] privileging the language of the educated classes" (cf. Rivera 1984; Bartolome 1998; Cummins 2000; MacSwan & Rolstad 2003; Rolstad, forthcoming). Nevertheless, Cummins' distinction was also drawn upon and expanded by Snow (1987). She uses a slightly different terminology, contextualized language skills instead of BICS and decontextualized language skills instead of CALP. Additionally, she introduces a distinction between incidental and intentional learning. To give a general account of her findings, BICS is acquired incidentally, whereas CALP takes longer to develop and is usually connected with a certain amount of intentional learning (Snow 1987: 8). This view is again taken into consideration in the discussion of how effective teaching of ALFs should look like.

Initially, Scarcella (2003: 5) claims that her "alternative framework [...] rejects Cummins' BICS/CALP distinction". Despite this assertion, she presents an extremely thorough comparison of everyday and academic language on the phonological, lexical, grammatical, sociolinguistic and discourse level (Scarcella 2003: 12-21). Thereby, she reinforces the binary opposition she has intended to question. At least she adds the so-called 'sociocultural/psychological' dimension (Scarcella 2003: 29) and maintains that academic English consists of more than just "knowledge of the linguistic code and cognition, but also [of] social practices in which academic English is used to accomplish communicative goals." In other words, she points at the importance of the discourse community of academia.

A number of researchers (cf. Martin 1993; Gibbons 2006; Morton 2010; Koch and Österreicher 1985, 2007; Bunch 2006, 2009) nowadays question Cummins' binary opposition in a more successful manner than Scarcella. Morton (2010: 93, cited in Dalton-Puffer 2013: 226) offers a comprehensible explanation for the claim that the BICS/CALP model is not applicable for the school context: He

"demonstrates how thematic meanings from a reading text get transformed via students' and teachers' *reformulations and rewordings* into the eventual *blackboard version* which satisfies the teacher's expectations of a formal academic history register." (my emphasis)

This quote gives an adequate picture of real classroom talk. Instead of going through the process of formulation on their own, students co-construct language together with their teachers, which is typical of classrooms. Naturally, students would start with the register that they are familiar with, the informal way of speaking of everyday life. By rephrasing their students' contributions, the teacher then tries to guide them toward an academic version. This supports the view that a binary distinction between everyday and educational language has to be handled with care.

Another critic of the distinction between everyday and academic language, Bunch, correctly states that discussions of school language often contrast academic language and any other language use, "termed variably *everyday*, *ordinary*, *informal*, *conversational*, *interpersonal*, *basic*, *playground*, and even *street* language" (2006: 285, original emphasis) However, as he emphasizes, "this distinction also potentially masks, or at least downplays, the important ways in which students use language in a wide range of ways, including 'conversational' or 'everyday' uses of English, to engage in academic tasks." (Bunch 2006: 286) In other words, Bunch has realized that learners in a classroom do not only apply prototypical academic language but also resort to what is familiar to them, i.e. everyday language. Therefore, he opts for a descriptive focus that generally examines students' language use. In his words (Bunch 2006: 286, original emphasis): "[M]y focus was on the *variety* of ways that students' use language to 'get things done' in the world of 7th grade classrooms." He concludes that the learners have used several 'languages', reaching from conversational to academic, and have shown an ability to distinguish different registers, even within academic genres (Bunch 2006: 298). Therefore, he underlines the necessity of challenging the traditional binary opposition. In this sense, he promotes the concept of a language continuum.

Koch & Österreicher (2007: 351) also dismiss the idea of an opposition (between spoken and written language). They present ten parameters that determine where

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on the continuum of 'immediacy' and 'distance' a stretch of discourse is located (see table 1). The terminology 'immediacy' and 'distance' can be considered as synonyms for informal and academic language.

immediacy	distance
privacy	public
interlocutors closely related	interlocutors not known
strong emotional bond	hardly any emotional bond
connected to situation and acts	not connected to situation and acts
referential immediacy	referential distance
face-to-face	remote
cooperation while communicating	no cooperation while communicating
dialogue	monologue
spontaneous	reflected
topics develop	topics fixed

Table 1. Koch & Österreicher's continuum of immediacy and distance (translated and adapted from Koch & Österreicher 2007: 351)

If all parameters of the left hand column are given, Koch & Österreicher (2007: 351) talk of 'immediacy', i.e. conversational language. Likewise, if all parameters of the right hand column apply, they talk of 'distance', i.e. academic language. What is important to understand is that, apart from the dichotomy face-to-face and remote, any combination of parameters of immediacy and distance is possible (Koch & Österreicher 2007: 351). Consequently, they take an immediacy-distance-continuum for granted. In other words, they take a continuum between everyday and academic language for granted.

However, a full account of all possible shades of language register is not only hard to give, but it renders any research highly complex and thus hard to conceptualize. Even though it should be reinforced that there are doubts as regards the binary opposition described above, the major part of this theoretical discussion thus has to focus on one end of the continuum, the prototypical academic language. Otherwise, the discussion would lack comprehensibility. Nevertheless, the issues of a language continuum and the multiple shades of 'academic language' reappear in the empirical part of this thesis (cf. section 6.4.2). The fact remains that prototypical everyday and academic language show different features and functions. At this point the theoretical discussion is narrowed down to academic language and its functions.

3.2 Academic language and educational success

The consequence of the existence of a different register prevalent in education is that a relation can be detected between a student's level of academic language proficiency and their educational success (cf. Schleppegrell 2001; Zwiers 2007; Chamot & O'Malley 1987; Lemke 1985). This is not a far-fetched claim if modern schools and modern teaching are considered. As Lemke (1985: 1) correctly points out, schools in these days do not resemble the "knowledge delivery systems" of former times. He promotes a view of education where "teachers and students [are] sharing and negotiating ways of talking and doing", which has to be distinguished from "transmitting knowledge" (Lemke 1985: 8). Doubtlessly, the prevalent philosophy of teaching almost prohibits long phases of teacher input and stresses the significance of student-centeredness. In this sense, education has clearly developed into a process that centers on language use (Lemke 1985: 1). The difficulty is that language use in academia differs from everyday language. Consequently, it is of vital importance for academic success to be able to "handle language in education-specific, 'non-everyday' ways", as Dalton-Puffer (2013: 218) confirms. She also demands that teachers provide their learners with the necessary linguistic input that serves as a precondition for succeeding in school (Dalton-Puffer 2013: 218). The undesired outcome of neglecting this call for assistance would be low achievement (Collier 1995, cited in Zwiers 2007: 94). In a nutshell, authority should be added to the fact that learning and language are inextricably entwined. This harks back to Halliday's conviction that regards language as the basis of any learning (see also section 2.2).

As far as educational contexts are considered, this section shows that especially academic language should receive attention, if teachers wish to avoid educational failure. There are of course programs which come to under-achieving students' rescue, trying to bridge the gap between their BICS and CALP. One such initiative is the North American Cognitive Academic Language Learning Approach (CALLA). It is a program tailored to the needs of minority students who possess BICS but lack sufficient CALP (Chamot & O'Malley 1987: 228). It consists of three main pillars: (a)

a content-based curriculum with the target of integrating language learning and content learning (cf. Content and Language Integrated Learning or CLIL), (b) focused teaching of the English language, including language functions, structures and specific lexis and, finally, (c) familiarization with learning strategies that facilitate learning in general (Chamot & O'Malley 1987: 234-239). Due to the limited scope of this thesis, the short description of CALLA provided here must suffice.[3]

Since this chapter repeatedly mentions the differences between everyday and academic language, it is beyond doubt that academic language must have characteristic linguistic features. These are examined in the next section.

3.3 Features of academic language

Academic language has its own specialized lexicon, syntax and discourse (cf. Zwiers 2007; Chamot & O'Malley 1994; Short 1994; Johns 1997; Zwiers 2008). Taking the example of legal English, so-called legalese, it becomes apparent what 'specialized' is referring to. To give an example, regarding lexis, legal English has both, unique vocabulary that can only be found in legal settings, such as *tort* or *promissory estoppels*, and common core words which have a specialized meaning in legalese, e.g. *agreement* (meaning 'contract' in legalese). Concerning syntax, legalese is characterized by a very lengthy and complex sentence structure and the prominence of the passive voice, which is quite the opposite of everyday communication. Moreover, the English of lawyers and judges has a number of further features that is typical of this discourse community. These features include archaic language (e.g. witnesseth), pronominal adverbs (e.g. hereto, wherein), Latin or French words (e.g. pro rata, voir dire) and reciprocal name endings (e.g. lessor/lessee).

A contribution that is groundbreaking in the field of educational language is Mary Schleppegrell's work *The language of schooling* (2004). In her article, Schleppegrell

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[3] For further information, see: http://calla.ws/ or Chamot, Anna Uhl; O'Malley, J. Michael. 1987. "The cognitive academic language learning approach. A bridge to the mainstream". *TESOL Quarterly* 21(2), 227-249.

(2001: 454) concludes that there is considerable divergence of informal and formal (educational) grammar. She arrived at this conclusion after discussing a number of linguistic features of educational language, which are now reproduced in this section. The first feature of academic language that Schleppegrell (2001: 434) highlights is the "authoritative stance". Presenting information authoritatively means that the writer or speaker presents his or her opinion in an impersonal and assertive way. Another prevalent feature that Schleppegrell (2001: 444) mentions is the declarative mood. In interactional language, however, interrogatives, i.e. question, and imperatives, i.e. commands, appear with a considerably higher frequency. What's more, academic language, according to Schleppegrell (2001: 434), typically features a high number of noun phrases (NPs), which results in lexical density. Every content word in an academic clause is loaded with details, connotations and further information. Another term that captures this notion of lexical density typical of academic language is nominalization (Schleppegrell 2001: 441). Nominalization refers to a process where a verb, adjective or adverb is transformed into a noun by, for example, adding a suffix or prefix. For instance, by adding *–ion* to the verb *legalize*, the noun *legalization* is created. Nominalization facilitates the use of noun phrases that are so important in academia. For illustration, consider examples 2 and 3 (Course material *Approaching ESP texts*, University of Vienna, Department of English and American studies, summer term 2015):

(2) Most archaeologists think that men and women began to become civilized in the Middle East, where natural conditions helped them to change the ways they lived from constantly moving around and hunting animals to settling in one place and cultivating the land.

(3) It is the opinion of archaeologists that civilization began in the Middle East, where favorable natural conditions allowed permanent settlement.

It becomes immediately apparent that, in terms of linguistics, these two examples are realized in considerably different ways, even though the message remains the same. Example 1 shows a total of nine verbs, whereas Example 2 includes only three. Moreover, these examples demonstrate how nominalization is used to create more

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concise texts. For instance, *become civilized* is transformed into *civilization* or *permanent settlement* in Example 2 is an extremely condensed version of *the ways they lived from constantly moving around and hunting animals to settling in one place and cultivating the land*.

In addition to a high number of NPs and lexical density, academic language is also characterized by different conjunctions or clause linkages (Schleppegrell 2001: 444). To be precise, a greater number of conjunctions can be found and, apart from that, "nominal and verbal expressions" are also frequently used to link clauses (Schleppegrell 2001: 447). Using the example of causal links, a verbal expression that might be used is for instance "is closely associated with" in a sentence like "The formation of sedimentary rocks is closely associated with water." (Schleppegrell 2001: 447)

Naturally, academic lexis is special, too. Along with field specific terms, i.e. technical vocabulary, Schleppegrell (2001: 438) also states that certain non-technical phrases that are rare in everyday interaction belong to the academic lexis. Coming back to the sample of legal English, lawyers also need non-technical functional language in order to succeed in their profession. Giving advice is just one instance of using the technical vocabulary of legalese in combination with non-technical 'advice language'. Examples 4 to 7 (Course reader *English in a Professional Context – advanced – world of work II*, University of Vienna, Department of English and American studies, summer term 2015) show different ways of providing assistance for a client.

> (4) I would (strongly) suggest/advise that…
> (5) My recommendation is/would be…
> (6) Make sure you (don't)…
> (7) A piece of advice that I'd like to pass on is to…

These phrases are not legalese, they belong to common core vocabulary. Nevertheless, they are crucial in the daily work of a legal person and thus belong to the lexicon of legal English.

Certainly, the grammatical and lexical features presented in this section cannot be regarded as universally valid for all academic disciplines. Medical English will have

its own characteristics, as well as the humanities. Yet, some aspects discussed here can definitely be transferred to other academic fields, the authoritative stance being only one example. Furthermore, the aim was not to collect a detailed and thorough list of typical features. This presentation of features simply serves as an introduction that should foster a basic understanding of academic language. For further information, the interested reader's attention is drawn to the studies cited above (Zwiers 2007, 2008; Chamot & O'Malley 1994; Short 1994; Johns 1997).

3.4   Academic language functions

After having discussed the grammatical and lexical characteristics of academic language, the next question that arises refers to its functions. In the beginning, a short definition of ALFs is mandatory. In Kidd's (1996: 286) terms, ALFS are "uses and purposes of language in academia". Additionally, he offers a list of examples taken from Chamot and O'Malley's study that include the following ALFs: "explaining, informing, describing, classifying and evaluating" (Chamot & O'Malley 1987: 239, cited in Kidd 1996: 286). This reverts to the discussion in section 2.5, which presented language functions as patterns or options available to the speaker. Supplementary, Dalton-Puffer (2007a: 202; 2007b: 128) emphasizes that one of the central elements of ALFs is that they answer to recurrent communicative demands. This again reminds of the discussion in section 2.5. When people engage in conversation, they do not invent new language every time, they choose from a set of prefabricated utterances. ALFs are used in exactly the same way, namely as a templates for recurrent situations. The only difference concerns the settings in which these functions appear, everyday interaction and educational language respectively. What characterizes ALFs, thus, is their infrequent occurrence in, or even absence from, everyday communication (Dalton-Puffer 2007b: 127). Additionally, the combination of these functions is exclusively found in academic settings (Dalton-Puffer 2007b: 129). Examples of academic functions are classifying, defining, describing, explaining and evaluating (Dalton-Puffer 2007b: 129). Dalton-Puffer concedes that some of them also play a role in everyday interaction, however, with a frequency far below that found in academia. In another study, Dalton-Puffer

(2013: 251) collected ALFs from curricular documents and eventually came up with more than 50 functions, inter alia, arguing, contrasting, describing, enumerating, interpreting etc. A complete list of all ALFs found in her study is included in her appendix (cf. Dalton-Puffer 2013: 251-253).

This case demonstrates the difficulty connected with the investigation of ALFs. Due to the complexity of this area, Kidd (1996: 288) proposes a categorization into micro- and macrofunctions. On the one hand, "[m]icrofunctions are small-scale; they involve the performance of rather specific language tasks with comparatively narrow purposes." (Kidd 1996: 288) In other words, microfunctions are short stretches of language that often follow strict syntactic patterns. Moreover, they are sometimes accompanied by a signal word (Kidd 1996: 288). Definitions, for instance, usually follow a rigid format: "an X is a Y having characteristic Z" (Kidd 1996: 290, see also section 4.2). A concrete example can be seen in Example 8 below.

(8) A cat is a mammal that has four legs and a tail.

On the other hand, macrofunctions "are larger-scale uses in the sense that they pertain to more general language tasks with broader purposes." (Kidd 1996: 288) Put differently, the second type refers to long episodes of communication, oral or written. Moreover, they do not follow predictable sentence patterns nor are they signaled by particular words (Kidd 1996: 288). Typical functions that Kidd would assign to this category are describing, explaining, narrating and instructing.

After having dealt with ALFs on a theoretical level, it is now time to answer another pressing question: How are ALFs best taught in a classroom setting? This is the topic of the following section.

3.5 Teaching ALFs

Section 3.1 has already touched upon the issue of effective ALF teaching, stating that academic language ability commonly needs to be learned intentionally, in other words, by explicit teaching. This notion is highlighted by different researchers (cf. Kidd 1996: 289; Dalton-Puffer 2013: 218; Walsh 2006: 7). Apart from his call for the

teaching of concepts and forms, Kidd (1996: 289) even demands explicit labeling of the ALFs, so that students can orientate themselves. Moreover, bearing the diverse linguistic realizations of the individual functions in mind, he calls attention to the fact that not all kinds of ALFs need to be acquired for productive use. Teachers should decide which realizations can be "confined to the receptive domain" only (Kidd 1996: 290).

Another piece of advice is presented by Moje (1995, cited in Walsh 2006: 7), who found that a teacher's insistence on appropriate academic register had a huge influence on the degree of 'academicness' in the classrooms of his study. His findings show that, if teachers equip their students linguistically and force them to make use of the formulas, they quickly learn how to 'talk science' (Moje 1995, cited in Walsh 2006: 7).

Finally, amongst others, Dalton-Puffer (2007b: 90) reinforces the observation that the typical Initiation-Response-Feedback (IRF) circle of classroom talk hinders students' language production. Likewise, the acquisition of ALFs is also hampered by this type of interaction. How this obstacle can be overcome is not an issue addressed in this thesis, however, attention needs to be drawn to the impact of this pattern of teacher-student talk, before the discussion can move on to the highly influential construct that is presented in the next section.

3.6   Bloom's Taxonomy of educational objectives

In times of skill-centered curricula and educational standards, a discussion of classroom language cannot ignore the groundbreaking contribution of Benjamin Bloom's *Taxonomy of educational objectives* or simply 'Bloom's taxonomy'. Originally, it was devised as a tool for designing tests, but in the course of time an additional purpose has been added and today, it is also seen as "a pyramid of *thinking skills*" (Dalton-Puffer 2013: 221, original emphasis). Figure 1 below is a visualization of the categories involved in the taxonomy.

Figure 1. Bloom's taxonomy

As can be seen in Figure 1, the taxonomy consists of six categories, namely knowledge, comprehension, application, analysis, synthesis and evaluation, which are also evident from Resch's (2008: 41) written representation. It lies outside the scope of this thesis to thoroughly present the taxonomy (for a detailed presentation, see Bloom 1956). Nevertheless, an important point that should be made is that the categories correspond to cognitive skills and irrespective of the ranking that the pyramid might suggest, they are equally weighted (Dalton-Puffer 2013: 221). All of them are part of classroom activities and are expressed through language. Apart from the influence that the taxonomy had on the development of teaching and learning, there is another reason why it is necessary to touch upon this construct in connection with this thesis: It was the starting point of Dalton-Puffer's model of Cognitive Discourse Functions (CDFs). A detailed presentation of this construct follows in the next chapter.

Prior to this examination, one last note is necessary. As stated above, the development of the CDFs construct started with Bloom's Taxonomy. Since the categories in a revision offered by Anderson, Krathwohl et al. (2001, cited in Dalton-Puffer 2013: 221) are arranged horizontally, this model was even better suited to Dalton-Puffer's purposes. In this version, a second dimension was added to the cognitive processes or categories of Bloom's construct. Figure 2 below shows the newly added knowledge dimensions of Anderson, Krathwohl et al.'s taxonomy.

The Knowledge Dimensions	Cognitive Processes					
	1. Remember	2. Understand	3. Apply	4. Analyze	5. Evaluate	6. Create
Factual						
Conceptual						
Procedural						
Metacognitive						

Figure 2. Anderson, Krathwohl et al.'s revised taxonomy

Figure 2 reveals that Anderson, Krathwohl et al. added four knowledge dimensions, i.e. factual, conceptual, procedural and metacognitive knowledge (for a detailed explanation, see Anderson, Krathwohl et al. 2001).

Other research that Dalton-Puffer considered when designing her CDF construct includes Biggs and Tang's (2011, cited in Dalton-Puffer 2013: 222) hierarchy of verbs that are used in the formulation of learning objectives, Bailey et al.'s (2002, 2007, cited in Dalton-Puffer 2013: 223) study of required academic language competences that are also formulated by means of verbs in US curricula and the Council of Europe's (http://www.coe.int/t/dg4/linguistic/langeduc/BoxD2-OtherSub_en.asp#s7; accessed 26 November 2015, cited in Dalton-Puffer 2013: 223) project *Languages of Schooling – Languages in other Subjects* which collected the communicative demands of mainstream education.

This chapter first questioned the binary opposition of everyday and academic language, before it centered on one prototypical end, i.e. academic language. As a second step, the correlation between academic language proficiency and educational success was traced. The discussion went on to examine typical linguistic features of academic language. These include, amongst others, an authoritative stance, a primarily declarative mood and a specialized lexis. Fourthly, the issue of academic language functions (ALFs) was discussed in greater detail. It was detected that they do not occur in everyday language or only with a very low frequency. Some examples of ALFs are describing, explaining, evaluating or classifying. Then, some preliminary advice was offered on the instruction of ALFs in school. Finally, Bloom's groundbreaking *Taxonomy of educational objectives* was shortly touched upon, because it can be seen as the initiation of Dalton-Puffer's CDF construct. This model

is of crucial importance to this thesis and the following chapter is dedicated to its thorough presentation.

4 Dalton-Puffer's construct of Cognitive Discourse Functions

After having clarified what academic language involves, this chapter's aim is it to present a model that is anchored in the realm of academic language und its functions. As it is stated above, academic and educational work requires language functions such as describing, explaining or evaluating, all of which are intrinsically tied to cognitive skills. Christiane Dalton-Puffer's CDF construct is designed to make cognitive processes in the classroom, i.e. "knowing and thinking", accessible (Dalton-Puffer 2013: 242). In this respect, the construct has an additional objective that goes beyond the field of applied linguistics. It is devised as an analytic model which is of avail to didacts of any subject and which is hoped to foster cross-curricular collaboration. In Dalton-Puffer's words, it can be seen as a "zone of convergence" that should "link up the pedagogies of the different subjects like mathematics, history or economics with the pedagogy of language teaching." (Dalton-Puffer 2013: 219) It is an integral part of the Austrian curriculum that every teacher is required to foster language development in every subject and not only in language classes. This requirement is called an *Unterrichtsprinzip*, or 'principle of teaching'.[4] Unfortunately, like a number of other principles, this call is ignored by the majority of content subject teachers. Dalton-Puffer (2013: 218) has realized this challenge, too, and states that "content subjects [...] need to be convinced that language issues in education cannot be delegated to the sole responsibility of language teachers." Her construct should aid this intention.

Coming back to the basics of the construct, CDFs, similar to ALFs, also constitute patterns or schemata for coping with standard situations in educational settings (Dalton-Puffer 2013: 231). "CDFs thus are verbal routines that have arisen in answer to the recurring demands while dealing with curricular content, knowledge items and abstract thought." (Dalton-Puffer, forthcoming) A total of seven functions

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[4] For further information, see BmBF. https://www.bmbf.gv.at/schulen/unterricht/lp/11668_11668.pdf?4dzgm2 (27 Nov. 2015).

build the CDF construct: CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT. These labels should not be seen as exclusive. They are simple labels that correspond to seven underlying communicative intentions. Table 2 below summarizes the construct.

Function Type	**Communicative Intention**	**Label**
CDF 1	I tell you how we can cut up the world according to certain ideas	CLASSIFY
CDF 2	I tell you about the extension of this object of specialist knowledge	DEFINE
CDF 3	I tell you details of what can be seen (also metaphorically)	DESCRIBE
CDF 4	I tell you what my position is vis a vis X	EVALUATE
CDF 5	I give you reasons for and tell you cause/s of X	EXPLAIN
CDF 6	I tell you something that is potential	EXPLORE
CDF 7	I tell you about something external to our immediate context on which I have a legitimate knowledge claim	REPORT

Table 2. CDFs and communicative intentions (adapt. Dalton-Puffer, forthcoming)

It is the column in the middle that is of central importance to the model. Dalton-Puffer (2013) arrived at these communicative intentions by reviewing her list of over 50 discourse functions extracted from curricular documents. She realized that each of these functions can be subsumed under one of the seven categories. The labels were added for convenience reasons, but that does not suggest that they are the only discourse functions that fit in the respective category. Quite the contrary, Dalton-Puffer (2013: 235) also provides a table of other discourse functions from the list that may be part of a particular CDF type:

CLASSIFY	Classify, compare, contrast, match, structure, categorize, subsume
DEFINE	Define, identify, characterize
DESCRIBE	Describe, label, identify, name, specify
EVALUATE	Evaluate, judge, argue, justify, take a stance, critique, recommend, comment, reflect, appreciate
EXPLAIN	Explain, reason, express cause/effect, draw conclusions, deduce
EXPLORE	Explore, hypothesize, speculate, predict, guess, estimate, simulate, take other perspectives
REPORT	Report, inform, recount, narrate, present, summarize, relate

Table 3. Members of the CDF types (Dalton-Puffer, forthcoming)

Table 3 resembles Rosch and Mervis' (1975) famous prototype theory. However, as Dalton-Puffer (2013: 236) emphasizes, this is a weak comparison, due to the impossibility of detecting a prototypical discourse function for each category. Taking CDF 2 – DEFINE – as an example, the difference between the three discourse functions that populate this type – define, identify and characterize – is so subtle that each could serve as a label for it. Therefore, it is the communicative intention (see table 2) that is defined as the prototype of each CDF type.

Nevertheless, the fact remains that the construct is complex in terms of both, its internal structure and category borders. Dalton-Puffer points at the possibility of using certain CDF types in combination. She says that "DEFINE always contains *classify*, but not all occurrences of CLASSIFY are part of a realisation [sic] of DEFINE. *Describe* can be part of EXPLAIN, REPORT or DEFINE, but there are also instances of DESCRIBE which stand alone." (Dalton-Puffer, forthcoming; original emphasis) This peculiarity was confirmed by a study of CLIL physics lessons (Kröss 2014), stating that the different types of CDFs can be used within other CDFs.

The aim of this chapter is to thoroughly present each CDF type of the construct. The basic meaning as it is provided by the Oxford English Dictionary (OED) serves as an initial way of clarification, before each function is examined in connection with the CDF construct.

4.1 Classify

The basic notion of CLASSIFY as provided by the OED is "To arrange in or analyse into classes according to shared qualities or characteristics". In other words, when humans engage in the cognitive activity of combining animals, objects or abstract entities into bigger groups and if the allocation is carried out according to similarities found within the individual entities, they engage in an act of CLASSIFYING.

The importance of CLASSIFY is underlined by a number of researchers (Anderson & Krathwohl 2001; Trimble 1985; Widdowsen et al. 1979; Vollmer 2011), which is the

reason why it is also included in the CDF construct. Dalton-Puffer (forthcoming) justifies this by saying that classifying "is a more abstract knowledge type than mere knowledge of terms or facts and it is more complex because classifications actually form links or disjunctures between specific terms and facts." Moreover, the centrality of this discourse type is also stressed by Mohan (1986), who includes it in his three-step knowledge model of Classification – Principles – Evaluation.

There are two ways of CLASSIFYING that are recognized by Widdowson (1979) and Trimble (1985), i.e. (1) from specific to general and (2) from general to specific. These classification types remind of the didactic approaches of inductive and deductive learning. Take, for example, teaching the present perfect simple. When teachers want their students to understand how this tense works, they have two options. On the one hand, they could choose an inductive approach and confront their students with example sentences that feature the present perfect simple. When working through the specific samples, the students should be able to infer the general rule of present perfect simple formation. This would correspond to classification type one, from specific to general. On the other hand, the teacher could also choose to present the general rule to the plenum, followed by a task that allows their students to practice specific examples. This deductive approach could be regarded as similar to classification type two, from general to specific. Lackner (2012: 48) also employs the adjacency pair *bottom-up* and *top-down* respectively. Referencing to Widdowson's (1979) coursebook *Reading and thinking in English*, Lackner (2012: 48-49) suggests two schemata for the two types of CLASSIFYING presented above.
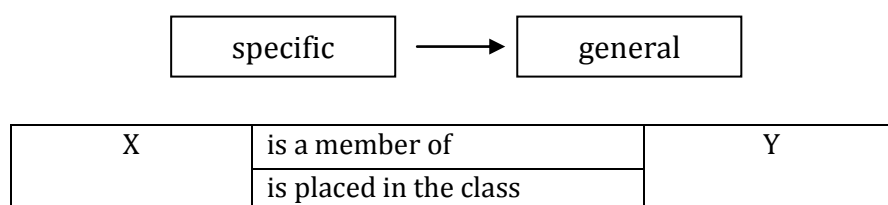
| specific | → | general |

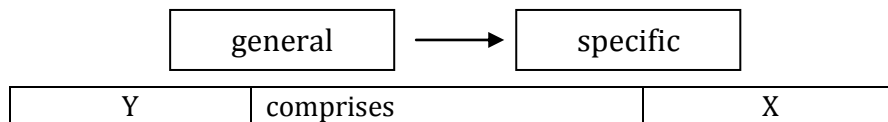| X	is a member of	Y
	is placed in the class	

Figure 3. Classifying type I

Figure 4. Classifying type II

Brief mention must be made of what is not immediately visible in these two representations, but what is in integrative part of it. It is the second part of the OED definition, "according to shared qualities or characteristics". Said shared qualities or characteristics play a major role in the cognitive processing of CLASSIFYING. In this regard, they constitute the precondition, so to speak, for being able to put X into Y.

Complete classifications, therefore, need to include three types of information (Trimble 1985: 86):

1) the item(s) / member(s) being classified
2) the class to which those item(s) / member(s) belong
3) those characteristics of each item that are similar and those that are different, i.e. the basis (or bases) for the classification

Widdowson (1979: 71) identified the same three aspects necessary for a complete classification. However, he used a different terminology. Instead of *items/members* he uses *examples*, a *class* is called *entity* by Widdowson and, finally, he changed the *basis* into *criteria*. Additionally, he created sub-categories within the class. For instance, the class of mammals could be divided into 'mammals that live offshore', e.g. whales, and 'mammals that live onshore', e.g. dogs.

4.2 Define

Due to its etymology, a great number of different meanings for DEFINE are offered by the OED. The explanation of the OED that is closest to the notion of DEFINE in the CDF construct is "To state exactly what (a thing) is; to set forth or explain the essential nature of." Put differently, the definition of an object or abstract thing includes details that exclusively specify exactly one thing or concept.

The discourse type DEFINE needs to be included in a construct on cognitive academic skills because definitions constitute the basis of academic writing and knowledge construction per se. Before a writer can engage in a discussion on any given topic in his field, a "definition for the proper identification of their subject [is required] in order to determine what is and what is not part of the field and also how the field-specific knowledge objects are circumscribed and related to each other." (Dalton-Puffer, forthcoming) Consequently, definitions are vital for any academic undertaking, which renders them central to the CDF construct as well.

Dalton-Puffer (forthcoming) states that the discourse function DEFINE is probably the "best-described" CDF. This prominent status is connected to its importance in previous research on cognition and to its structured form. A definition consists of the following three parts (Snow 1978: 10; Dalton-Puffer 2007a: 203; Dalton-Puffer, forthcoming). Note, however, that the terminology used varies from scholar to scholar.

1) the object, creature or abstract concept that needs to be defined (definiendum)
2) a class that it belongs to (definiens)
3) differences or characteristics that make it unique (differentia)

This simple schema of definitions corresponds to an equally simple linguistic realization. A formal definition follows the pattern of a copula construction, i.e. an X is a Y, which is followed by a description of its characteristics. Table 4 (adapted from Dalton-Puffer 2007a: 203) is a summary of the points made so far.

Conceptual content	object/creature/ abstract concept	superordinate term +	specifying features
basic parts	definiendum / species	definiens / genus +	differentia / differences
linguistic form	X is a	Y	that is/has/does
meaning	X is a Y having characteristics c1, c2, c3		

Table 4. Definition schema

In order to make this abstract representation more accessible, two examples (taken and adapted from www.merriam-webster.com, accessed 30 Nov. 2015) of a formal definition are provided below.

(9)   A cat is a small animal that is related to lions and tigers and that is often kept by people as a pet.

(10)   A dog is a highly variable domestic mammal (*Canis familiaris*) closely related to the gray wolf. (original emphasis)

In Example 9 the definiendum is 'cat', the definiens is 'small animal' and the remainder of the sentence belongs to the differentia. Similarly, 'dog' is the definiendum in Example 10, 'highly variable domestic mammal (Canis familiaris)' is the definiens and 'closely related to the gray wolf' constitutes the differentium.

It is important to mention that the specifying features can take various forms. They "can be descriptive, comparative, functional, historical, or any combination of these" (Dalton-Puffer, forthcoming). Taking Example 9 as an illustration, it can be seen that it includes both a comparative and a functional differentium. Whereas the clause "that is related to lions and tigers" compares a cat to its relatives in wildlife, the second clause "that is often kept by people as a pet" refers to the 'function' of a cat. Linguistically speaking, in Examples 9 and 10, the characterization is carried out by means of a relative construction. Another possibility would be the use of adjectives, for example (Dalton-Puffer 2007a: 203).

Up to this point, the discussion revolved around formal definitions. Yet a number of researchers (Snow 1987; Dalton-Puffer, forthcoming; Trimble 1985) have discovered that definitions in spoken interaction hardly ever follow this strict linguistic form. Trimble (1985: 75-80) has even categorized definitions according to this criterion into formal, semi-formal and non-formal definitions. Dalton-Puffer (forthcoming) succinctly summarizes the forms that definitions in classroom interaction might take:

"Genus may be left out (because it is obvious from the context) or may be formulated as an additional difference ("an arachnid is a spider"). Antonyms

("indigenous is the opposite of foreign") or synonyms (crawler) may be used. A genus may be represented by a well-known member ("an arachnid is a spider" while actually it is vice versa)) or by its most common characteristic (a spider makes webs)."

Nevertheless, as Snow (1987: 10) stresses, the nonobservance of the compact linguistic form presented above does not hinder communicative effectiveness. Even if definitions use deviant forms or if they are co-constructed by several speakers, which is a frequent phenomenon found in classrooms (Dalton-Puffer 2007b: 134), their communicative intent or goal is still met.

It is important here to briefly refer to a point made in section 4, namely that setting borders within the construct and between single CDFs is a rather complex undertaking. Some CDFs are part of other CDFs, as Dalton-Puffer (forthcoming) points out. Therefore, it is not always clear whether a statement is a classification or a non-formal definition, for instance. Trimble (1985: 86) provides an answer for this question. In his opinion, the difference relates to comparisons and contrasts. Whereas classifications seek to establish similarities between members of a class, definitions usually look for differences.

A final remark as regards definitions pertains to translations. While students usually provide a translation when they are asked for the meaning of a word, teachers hesitate to give translations and provide a synonym or a hypernym of the unknown English word instead (Dalton-Puffer 2007b: 136). In this respect, Dalton-Puffer maintains, they form "incomplete definitions." They are incomplete because they only consist of the copula construction (an X is a Y) and lack the decisive differentia. Examples 11 to 15 below are extracts from her data set that prove her point (Dalton-Puffer 2007b: 136):

(11) a deity is a god
(12) an ape is a monkey
(13) empties is a second word for returnable containers
(14) a proconsul is a governor in the provinces
(15) a French galley which is a ship

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The difference between definitions and translations is of special interest for the analysis of the classroom data. The issue is therefore reconsidered in section 5.6.

4.3 Describe

According to the OED, the basic meaning of DESCRIBE is "To set forth in words, written or spoken, by reference to qualities, recognizable features, or characteristic marks, to give a detailed or graphic account of." In other words, a definition throws light on the unique external or internal features or qualities of an object, creature, "situation, event or process" (Dalton-Puffer, forthcoming). As Lackner (2012: 49) puts it, it is about "telling you what I see", which Dalton-Puffer transformed into the communicative intention "I tell you details of what can be seen (also metaphorically)" of CDF 3, i.e. DESCRIBE. Vollmer (2011: 6) stresses that a description needs to be both, comprehensible for others and objective. Moreover, in his view, an oral (or written) description should suffice in itself, meaning that there should not be a need for gestures or further questions.

The discourse type DESCRIBE is central to the construct because academic work also always includes descriptions of important aspects of a topic that might not be completely straightforward. In Dalton-Puffer's (forthcoming) words, „attention to the not-immediately-obvious must be regarded as a crucial feature of specialist knowledge construction". What's more, a great number of researchers (cf. Beacco et al. 2010; Laplante 2000; Mohan 1986; Linneweber-Lammerskitten 2010; Pieper 2010; Trimble 1985; Vollmer 2010; Vollmer & Thürmann 2010; Zydatiss 2010 etc.) refer to the centrality of this cognitive activity (Dalton-Puffer, forthcoming). This is why the CDF construct also recognizes the importance of DESCRIBING.

Due to its significance in a high number of disciplines, DESCRIBING may appear in various (linguistic) forms (Laplante 2000: 269, cited in Dalton-Puffer, forthcoming). Since the different academic fields focus on different phenomena, a medical description strikingly differs from a historical description, for example. Thus, four main types of descriptions appear in the literature: physical, structural, functional and process descriptions.

Relating to physical descriptions, they are concerned with "material and outward characteristics" (Dalton-Puffer, forthcoming). Trimble (1985: 71), whose study revolves around science classes, came up with the following list of features that are typical of science descriptions: dimension, shape, weight, material, volume, color and texture. An example taken from a historical setting might, for example, be a prehistoric tool for the exploitation of mineral resources. As an introductory step to a task a student would usually be asked to simply describe the object according to its physical features.

As regards structural descriptions, they focus on the relationship between a whole and its parts (Lackner 2012: 52). They do so from two different perspectives, namely (I) from the whole to its parts or vice versa, (II) from the parts to the whole. Figures 5 and 6 (adopted from Lackner 2012: 52, based on Widdowson 1979 and Gillet et al. 2009) show linguistic realizations of the two types.

whole	*consists of*	parts
	is divided into	
	is made up of	
	includes	

Figure 5. Structural description I

parts	*make up*	whole
	form	

Figure 6. Structural description II

Thirdly, functional descriptions deal with the "purpose of a device or institution and how their parts cohere" (Dalton-Puffer, forthcoming). Coming back to the example of a prehistoric tool, a functional description would now require a student to talk about the possible use(s) of this artifact. What is important to note is that, in the history classroom, a functional description calls for the use of the past tense, which is distinguishable from other fields, e.g. electrical engineering. Again, there are two different ways of realizing functional descriptions linguistically. Figures 7 and 8 (adopted from Lackner 2012: 53, based on Widdowson 1979 and Gillet et al. 2009)

are used as an introduction to possible functional descriptions in a history classroom.

whole / part	served to	function
	was responsible for	
	performed the function of	
	enabled	
	controlled	
	regulated	

Figure 7. Functional description I

	function		whole / part	is to	function
The	*function*	*of the*	whole / part	*is to*	function
A	*purpose*				
One	*aim*				
	objective				
	role				

Figure 8. Functional description II

Finally, process descriptions revolve around a "series of steps, procedures and their purpose" (Dalton-Puffer, forthcoming). In other words, instead of describing static phenomena, they focus on dynamic events. Taking the prehistoric tool, a student might lastly be asked to trace the steps of the exploitation of salt, which was partly carried out with the tool. Consequently, such a description involves the use of certain discourse markers. They are collected in Figure 9 (adapted from Lackner 2012: 54, based on Gillet et al. 2009).
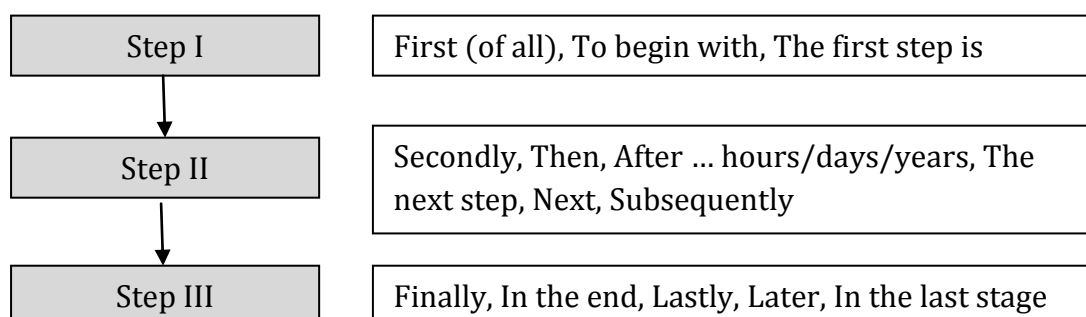
Step I	First (of all), To begin with, The first step is
Step II	Secondly, Then, After … hours/days/years, The next step, Next, Subsequently
Step III	Finally, In the end, Lastly, Later, In the last stage

Figure 9. Process description

Descriptions can be distinguished from other CDFs like EXPLAINING by one unique feature. Neither of the interlocutors can be said to show implications of a comprehension problem (Lackner 2012: 49-50, referring to Dalton-Puffer 2007c: 140). This means that the description can function independently and no further interaction is necessary in order to understand the message.

4.4 Evaluate

The most suitable definition for EVALUATE provided by the OED is that it means "to express in terms of something already known." This notion is in accordance with Vollmer's (2011: 9) stance that evaluation means drawing conclusions or expressing critique on the basis of professional knowledge. Using his own words, the definition of EVALUATE reads as follows:

> Beurteilen/Bewerten = eigene Meinungen und den eigenen Standpunkt verständlich und überzeugend vertreten – Sachverhalte, Ereignisse, Verhaltensweisen *vor dem Hintergrund* des eigenen fachlichen Wissens, ethischer Prinzipien sowie eigener Erfahrungen beurteilen und bewerten – aus Einzelbeobachtungen Schlüsse ziehen […] - Kritik äußern und begründen (my emphasis) [evaluate/assess = comprehensibly and convincingly backing up your opinion and personal point of view – evaluating and assessing circumstances, events and actions *on the basis* of professional knowledge, ethical correctness or experience – drawing conclusions from observations […] – criticizing and justifying the criticism]

By focusing on professional knowledge, ethical correctness or experience as the starting point of an argumentation, he calls for a comprehensible and convincing presentation of one's opinion or point of view. Other verbs in the construct that are part of this discourse type include judge, argue, take a stance or critique (see also section 4).

Even though little research on evaluations has been carried out so far, the literature seems to have reached a consensus on the importance of this cognitive skill in the academic world. Dalton-Puffer (forthcoming) provides a collection of relevant publications on the topic (cf. Bailey/Butler 2003; Beacco 2010; Bloom 1956;

Chamot/O'Malley 1994; Krathwohl 2002; Mohan 1986; Thürmann/Vollmer/Pieper 2010; Vollmer/Thuemann 2010; Vollmer 2011).

However, what is crucial to note is that "translingual confusions" need to be considered in connection with EVUALTE (Dalton-Puffer, forthcoming). Comparing, for example, the German word *argumentieren* with the English *argue*, Dalton-Puffer (forthcoming) detects a difference in meaning. Whereas the German word "implies the bringing forward of reasons or evidence in order to affirm one's position <u>and</u> a sense of having to convince and win over an opposition" (Dalton-Puffer, forthcoming, original emphasis), the English *argue* lacks the latter connotation. Nevertheless, the quintessence is its centrality to cognitive thinking skills.

As stated above, an evaluation needs a sound basement, so to speak. Both Vollmer (2011: 9) and Dalton-Puffer (forthcoming) agree on the fact that, although it is subjective, an evaluation must be connected with a certain frame of reference. Dalton-Puffer (forthcoming) labels this framework 'value' and distinguishes between quantitative and qualitative value. While the former refers to numerical reasons, the latter corresponds to moral judgments. Vollmer (2011: 9), on the other hand, uses the terms descriptive (germ. *deskriptiv*) and normative (germ. *normativ*). By descriptive he means non-judgmental or professional, in other words, numerical or objective. Normative, however, is connected with ethical reason, in other words, moral reasons. In summary, every act of evaluation requires a frame of reference and this framework may either be quantitative or qualitative.

4.5 Explain

The standard meaning of EXPLAIN presented in the OED is "To make plain or intelligible; to clear of obscurity or difficulty; to give details of or to unfold (a matter)". In this sense of the word, an explanation is comparable to a triangle in so far as it includes three factors, namely the unknown entity that is explained, the person explaining and the person being informed. Figure 10 (adopted from Dalton-Puffer 2007b: 140) is the explanation triangle as it was introduced by Gaulmyn (1986).
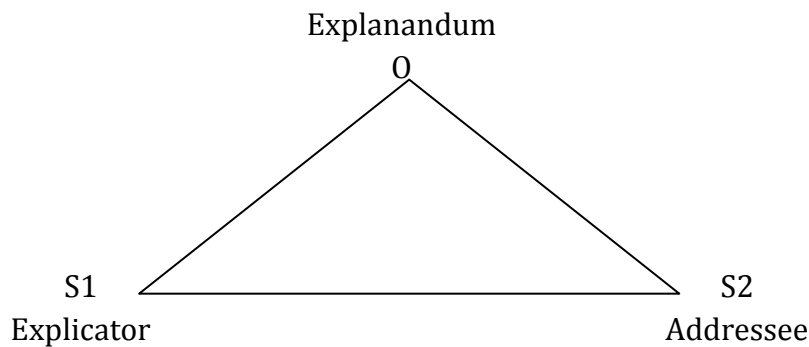
Explanandum

O

S1   S2
Explicator   Addressee

Figure 10. Explanation schema (Gaulmyn 1986)

Following Gaulmyn's terminology, the explicator explains the explanandum to the addressee. Gaulmyn (1986) furthermore realized that a complete explanation runs through three essential phases (adapted from Dalton-Puffer 2007b: 141):

a) Identification stage: Proper identification of the object (explanandum) and distribution of roles S1 and S2; similar to definitions, as it is oriented toward the explanandum, i.e. definiendum.

b) Explanation stage: recursive explaining text oriented toward S2

c) Sanctioning stage: S2 accepts explanation

Only if the interlocutors go through all these phases, an explanation is considered complete in Gaulmynian terms.

However, Dalton-Puffer (forthcoming) excludes this first general meaning from the CDF EXPLAIN and rather focuses on the following two other meanings of EXPLAIN provided by the OED:

a) To give an account of one's intentions or motives

b) To make clear the cause, origin, or reason of

According to Dalton-Puffer (forthcoming), it is applicable to let the basic meaning aside because the realization of a) and b) naturally substitute the "giving [of] details". This is why Gaulmyn's third stage – the sanctioning stage – also does not really match her understanding of EXPLAIN, because a causal link need not be

sanctioned. Otherwise it would not be an adequate cause. In this respect, she reaches an agreement with Vollmer (2011: 7), who defines explanations as depicting causal relations. Therefore, the working definition of EXPLAIN in the CDF construct takes the form of the communicative intention "I give you reasons for and tell you cause/s of X".

As mentioned in the list above, EXPLAIN and DEFINE show some similarities. Both are oriented toward the unknown entity. The crucial difference, however, is that explanations change from this *initial* orientation toward the unknown entity to an outward orientation, i.e. toward the interlocutor (Dalton-Puffer 2007b: 148). To be more precise, a person who is explaining something wants his or her interlocutor to understand it. Definitions, on the other hand, are always only about the entity as such. They are fixed and even if the addressee of a definition struggles with its meaning, the definition is not changed. Any further explanatory comments are part of EXPLAIN.

Despite the obvious importance of EXPLAIN in academia, its first general meaning plays an ambivalent role in the classroom. On the one hand, teaching could in general be considered as an endless chain of explanations provided by the teacher (Dalton-Puffer 2007b: 141). On the other hand, however, student explanations are extremely rare, due to the lack of a comprehension problem on the teachers' side (Dalton-Puffer 2007b: 139). This missing gap becomes apparent in the comparison of everyday and classroom communication. Explanations are given to interlocutors who are in need of clarification. Teachers, however, customarily already know the answer to their questions. Therefore, Dalton-Puffer (2007b: 141) asserts that students lack a genuine need for giving explanations in terms of the basic meaning provided by the OED.

A consequence of the absent comprehension gap is that "*coherent explanations*" are rarely presented to students (Dalton-Puffer 2007b: 149-150, original emphasis). Classroom explanations were found to be interrupted by teachers' comprehension checks and usually are co-constructed by several speakers, (almost) always including the teacher (Dalton-Puffer 2007b: 149-150). Additionally, when students

are urged to explain something, they commonly only provide monosyllabic explanations or individual words, which are then combined by the teacher (Dalton-Puffer 2007b: 158). This study is hoped to provide more information on this issue.

4.6   Explore

The definition of EXPLORE offered by the OED is "To investigate, seek to ascertain or find out (a fact, the condition of anything)." Inter alia, this CDF type also includes verbs like *hypothesize, speculate, guess* or *estimate*. These two cues show that EXPLORE is not concerned with facts and certainty. Quite the contrary, explanations can almost be said to engage in speculations. Dalton-Puffer (forthcoming) claims that the underlying communicative intention that unites these verbs into one CDF type is: "I'm talking about something which is not in the here and now, and which is not past fact either. I *do not have conclusive evidence* for what I say but it can serve me/us as a basis for further reasoning." (my emphasis) In this regard, EXPLORE differs from theory-based hypotheses and predictions as they are part of the process of research. Dalton-Puffer's (forthcoming) working definition for this CDF type deals "with a more general, semi-expert notion of this activity".

Note that other researchers (cf. Biggs & Tang 2011; Beacco, Coste, van Ven, Vollmer 2010; Kidd 1996; Linneweber-Lammerskitten 2010; Vollmer 2010; Wells 2009) and previous works by Dalton-Puffer (2007abc) herself talk of *hypothesizing* and *predicting* when they are concerned with CDF 6, EXPLORE.

The cognitive skill EXPLORE is not well-described in the literature, however, it is connected with a number of linguistic characteristics. These characteristics populate the more complex end of the lexico-grammatical spectrum. Dalton-Puffer (forthcoming, 2007ab, original emphasis) lists the following: "modal verbs (e.g. *may, will, can*), modal adverbs (e.g. *maybe, perhaps, probably, possibly*), and dependent clauses with conditional conjunctions (mostly *if*)." Moreover, Dalton-Puffer (forthcoming, 2007ab) identified particular verbs and expressions that introduce an act of EXPLORING. Tables 5 and 6 summarize these phrases (adopted from Dalton-Puffer 2007b: 160-161).

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assume
guess
hypothesize
imagine
predict
propose
speculate
suggest
suppose

Table 5. Verbs introducing EXPLORE

let's think/say/assume/image
(so) what would happen (if)
what will happen if
what happens if
can you predict
what would your prediction be?
what would you propose
what would you do if
anyone wanna take a guess

Table 6. Lexical phrases introducing EXPLORE

In sum, CDF type 6 stands for a rather complex cognitive skill and, likewise, is realized by the use of complex lexico-grammar. Nevertheless, there are some signal words that make it easier to identify instances of EXPLORE, such as *assume* or *suppose*.

4.7 Report

When searching for REPORT, the OED suggests that it means "To give an account of (a fact, event, etc.); to relate, recount, tell; to describe." Disregarding *describe*, which is dealt with in detail in section 4.3, the dictionary entry revolves around acts of storytelling. Note, however, that 'storytelling' is not used in its literal sense here, but it carries a broader meaning. It includes all acts of talking about events, processes or actions, retelling main points, summarizing central aspects, etc. Other verbs that form this CDF type are *inform, recount, narrate, present, summarize* and *relate*. Brief mention must be made of a suggestion forwarded by Vollmer (2011: 6-7), namely

that reports in an educational environment should be organized and structured in a way that helps a writer or speaker to reach their objectives.

The central communicative intention of the last CDF type established by Dalton-Puffer (2013) is "I tell you about sth. external to our immediate context on which I have a legitimate knowledge claim". Kröss (2014, citing Hyland 2004: 27) presents three groups of typical verbs that are frequently used during the realization of REPORT: (1) Verbs like *discover* that are connected with research acts (e.g. experiments), (2) verbs similar to *believe* that describe cognition acts (e.g. mental processes) and (3) verbs like *state* that refer to discourse acts (e.g. verbal expressions).

As concerns the school context, examples of these groups include, first of all, a biology lesson where students dissect a fish and detect that spawn can be found in the belly of female fish. A report on this dissection might look like the following: "When dissecting a female fish, we discovered that she carried spawn inside her belly." Secondly, a history lesson on the development of humans might include a teacher report like "At one point in history, early humans realized that stones could be used as tools." Thirdly, a psychology lesson might review famous sayings and a student contribution might report on what she read on the internet the day before, namely "Sigmund Freud stated that the ego was not the master in its own house."[5]

A prototypical classroom situation where reports are called for is the presentation of group work results (Bunch 2006, cited in Dalton-Puffer, forthcoming). Other school genres that form acts of REPORTING include the historical recount, an oral presentation, a story or an Erlebnisaufsatz (Dalton-Puffer, forthcoming). Finally, also teacher monologues can be realizations of the CDF type in question.

This chapter has thoroughly presented Christiane Dalton-Puffer's CDF construct, which is meant to foster interdisciplinary collaboration among subject and language

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[5] For the original quote, see Notable Quotes. Sigmund Freud quotes. http://www.notable-quotes.com/f/freud_sigmund.html (4 Dec. 2015).

teachers. It consists of seven types, i.e. CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT. The binding element of every discourse type is the underlying communicative intention. Nevertheless, the model remains complex and category boundaries are fuzzy, which became apparent in the discussions of the particular CDF types. The empirical study presented below is hoped to contribute to the clarification of this issue.

5 Study design

5.1 Research question

After presenting the theoretical framework of this study, it is now possible to answer to Dalton-Puffer's call of a "fact-finding mission". Her CDF construct is of course grounded on some empirical research, but she concedes that more studies on discourse functions are needed in order to test its applicability in educational settings.

This study is designed to fill the existing research gap in connection with the discourse functions of Dalton-Puffer's model. For the context of Austrian upper secondary EFL classes, it seeks to answer the question which cognitive skills are realized in the classroom through language. Put differently, the principal aim is to identify the CDFs that appear in real classrooms. Apart from detecting the applied CDF types, this study also pursues a number of other research questions that are closely linked to the main interest:

1) How often are the CDFs realized?
2) By whom are they realized?
3) Are there any differences as regards the school type (AHS vs. BHS)?
4) How are the CDF types realized linguistically (in terms of lexico-grammar)?
5) Is there explicit teaching of or meta-talk about CDFs?

5.2 Methodology

In order to answer the questions posed above, this study uses a quantitative and qualitative empirical approach. Eight EFL lessons taught in an upper secondary school (AHS) and a vocational school (BHS) constitute the basis of the analysis. They were filmed and recorded for the purposes of this study.

This corpus was then transcribed according to the VOICE (Vienna-Oxford International Corpus of English) transcription conventions (see appendix for the list of conventions). The next step was to carry out an initial intuitive analysis that

revealed in how far Dalton-Puffer's construct had to be adapted for the concrete dataset. Changes made are discussed in chapter 5.6.

Finally, a thorough analysis of the transcripts was conducted with the research questions in mind and by using Dalton-Puffer's model as a framework. This undertaking was realized by means of the program atlas.ti, which is designed to support qualitative data analyses. The subjects under consideration are not individual students or teachers, but rather classroom language at large. The reason for this is that this study is not interested in the performance of individuals but rather seeks to investigate the presence or absence of any CDF type in this learning environment.

5.3   Data collection procedures

The initial step that had to be taken in the data collection process was to determine the target group. Since the CDF construct arose in a CLIL environment and my second subject is history, the answer to this question seemed obvious. However, research had already been carried out on discourse functions in CLIL history classes (cf. Lackner 2012). Therefore, the agreement to study CDFs in EFL classes was reached. Additionally, both Austrian school types, a classic upper secondary school (AHS) and a vocational school (BHS), are included, because it is interesting to see whether the results differ from one type of school to the other. The final step, choosing particular classes, was left to the teachers. The participants of the study are discussed in section 5.4.

Concerning regional aspects, the decision to record Lower Austrian classrooms is partly a result of pragmatic considerations. Apart from the promising results that a contribution of rural schools yielded – a comparison with schools in urban areas might result in interesting insights concerning language teaching methodologies in the future – the decision is also due to the Vienna School Board's reservations. Since a great number of student teachers conduct research in Viennese schools, pupils, schools and the school board are slowly feeling disturbed. Above all, I was born and

raised in Lower Austria and was therefore more than willing to provide research on this region.

Once the target group was determined, the next step was to contact principals of schools in Lower Austria and ask for permission to undertake the proposed study in their school. Surprisingly, the first two schools that were contacted agreed to take part in the study. After a short introduction to the research endeavor, the teachers suggested by the principals gave their consent.

With the teachers' and principals' consent, the study was then submitted to the Lower Austrian education authority, which also approved of the research. The final step was to obtain the pupils'[6] or their parents' approval. This was done by means of a letter that had to be signed by every pupil or parent. Fortunately, this phase was successfully completed, too.

Even though only eight lessons were needed for the corpus, twelve were filmed in order to give the participants the possibility to adjust to the strange situation and to prevent any technical problems from disturbing the research. Retrospectively, this decision was very wise, because two lessons were lost due to a camera break-down.

5.4 Participants

As stated above, the participating classes were chosen by the teachers themselves, without interference of the researcher. The AHS teacher choose a 10th and 11th grade, the BHS teacher opted for a 12th and 13th grade. These decisions were slightly unfortunate, because they made it difficult to answer the question of whether there are differences regarding the CDF types in the two different school types, AHS and BHS respectively. It is almost impossible to compare results across school types if the age and especially the language level of the subjects vary too much. Reference to this problem is made in section 6.3.

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[6] N.B. Pupils at the age of 18 or older gave their consent themselves.

In the 10th grade upper secondary group there were twelve pupils, five boys and seven girls. The reason for the small size of the group is that the original class is divided into two smaller groups in principal subjects, one of which is English. Concerning their level of English, the curriculum requires a lower B1 for this grade. The learning environment was calm and comfortable, occasional joking created a relaxed atmosphere.

The 11th grade upper secondary group consisted of 15 learners, two boys and 13 girls. Again, this class was divided into smaller groups for principal subjects. Their level of English should be B1 according to the curriculum. Similar to the atmosphere in the 10th grade, the working environment in this class can also be described as calm and quiet.

In the 12th grade vocational school group (HAK) there were pupils from two different classes of the same year. All in all there were 21 students, seven boys and 14 girls. Their expected level of English was B1 plus to B2. Differently from the smaller groups described above, this group was quite lively and vivid, but still the learning environment was comfortable.

Finally, the 12th grade vocational school group consisted of 14 learners, seven boys and seven girls. Referring to the curriculum, their level of English should approximately be B2 plus. The group was vivid and curious and the atmosphere was relaxed.

Regarding the two teachers, a major difference became apparent immediately. Whereas teacher A or his/her teaching style can be described as calm, friendly, patient, relaxed and well organized, teacher B on the other hand was more agile and vivid. Teacher B's lesson plan was flexible and due to his/her good relationship to the learners the lessons were far from boring. Both classrooms were comfortable and relaxed, however, in two considerably different ways.

5.5 Setting / lessons

Lesson 1 took place in school A, an upper secondary grammar school, and was 50 minutes in total. Itstarted with an oral vocabulary revision, with two students being asked to stand up and translate new words. Afterward, the class compared their homework. Twenty minutes into the lesson, the teacher started a new topic – wedding ceremonies – by providing the learners with useful vocabulary. First, they had to match translations and then they had to complete example sentences using the new vocab. The major part of the lesson was dedicated to a plenum discussion about weddings. The students reported on their personal experiences, if they had ever been to a wedding and what it was like. Furthermore, the class discussed which jobs, tasks or obligations different people have at a wedding, e.g. the bride, the best man or the priest. This speaking activity was followed by a reading comprehension on a traditional Hindu wedding. After anticipating the topic from the picture, the students read out the text. Then the class recapitulated the main points of the text and finally did an exercise which asked them to put the events of a Hindu wedding in the correct order.

Lesson 2 was a sequel to lesson 1 and it also lasted for 50 minutes. It started with a revision of the previous lesson, i.e. the students retold the procedure of a traditional Hindu wedding. As a next step, the learners were asked to summarize their homework text, which described a traditional Islamic wedding. After having dealt with both types of weddings, the pupils then completed several exercises on Hindu and Islamic weddings. These exercises mainly revolved around classifying items or events to the respective wedding, e.g. completing a table or answering questions like "At which wedding do men and women sit separately?". The major activity in this lesson was a pair work task that asked the learners to prepare an equally detailed description of an Austrian or Romanian[7] wedding. The remainder of the lesson,

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[7] N.B. One female student's parents emigrated from Romania.

approximately 20 minutes, was spent on a plenum conversation on different weddings, also on similarities and differences between them.

Lesson 3 was planned for 50 minutes and held in a different class than lessons 1 and 2. Therefore, the topic was completely different. First of all, the group compared their homework, i.e. a text and a letter on flash mobs. The texts triggered a lively discussion on advantages, disadvantages and possible dangers of flash mobs. Afterward, the teacher started a new topic, i.e. nature and environment, by introducing relevant vocabulary. The group clarified the pronunciation of these new words, matched them with German translations and found the suitable English explanations. The remaining 20 minutes of the lesson were spent on a brainstorming activity on the problems that planet Earth is currently facing.

Lesson 4 was again a sequel to lesson 3, lasting for 50 minutes as well. After the teacher's introductory explanation of their upcoming school trip to Scotland, three students held mini-presentations on dancing and its significance in their lives. These presentations were not connected to the current topic but were rather part of class participation. Each student was required to give such a short speech at some time in the semester. Next, the class reviewed what they had worked on the day before, i.e. problems that our planet is facing. Then they compared their homework, a worksheet on useful vocabulary for this unit. Twenty minutes into the lesson the teacher assigned a reading exercise called *Time's Running Out,* with a true-false-justification task to be completed. The remainder of the lesson, ten minutes, revolved around the text. Students got together in pairs and discussed a question related to the topic of the text, namely which facts in the article they find most worrying and why. Finally, they reported their points of view to the plenum.

Lesson 5 took place in school B, an upper secondary vocational school, which is part of a school pilot. Instead of the ordinary 50 minutes, lessons in this school last for only 40 minutes. Additionally, they have many double lessons without a break in the morning, which are interrupted by 85 minutes of individualized tuition. In this *Indi-Phase*, as it is called, students can independently choose a teacher and go there for additional tuition. Topics that are dealt with in the individualized tuition are not part

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of the regular teaching schedule and are therefore not tested. The intention is that learners are able to organize parts of their timetable themselves, according to their individual interests. Table 7 shows an illustrative timetable in school B.

	Monday	Tuesday	Wednesday	Thursday	Friday
07:35- 08:15	English	Geography	IT	Accounting	English
08:15- 08:55		Physics			Biology
09:10- 09:50	indi-phase				
09:50- 10:30					
10:35- 11:15	German	French	French	PE	Maths
11:15- 11:55		RE			
12:10- 12:50			Music		
12:55- 13:45			Psychology		
13:45- 14:35					
14:35- 15:25					

Table 7. Illustrative timetable of school B

So, lesson 5 was planned for 40 minutes, as stated above. Due to this time issue, the teacher plunged right into the topic, i.e. migration, and only reviewed the previous lesson by asking for the definition of migration. The group then clarified why moving within the EU was a special case (Schengen treaty), which led over to the following listening comprehension. Five speakers gave their opinion on the EU and the learners were supposed to match the speakers and their opinion. The main topic of the lesson then was the EU. First of all, the class did a speaking exercise and brainstormed benefits of the EU. Afterward, the teacher went through subjective statements about the EU in the book, e.g. "Euro causes big price increases", and asked the students to give their opinion on these statements. The last ten minutes were spent on preparing a pair speaking activity that revolved around immigrating to another country.

The 6th lesson took place in the same class in school B, too. Consequently, it was also just 40 minutes long. The teacher started a new topic, namely the three sectors of industry. In a teacher-led discussion, the group first defined the three sectors and then classified examples of these sectors, e.g. crops, clothes or education. Moreover, the students were familiarized with the difference between a retailer and a wholesaler, which was again followed by a classification exercise. After a student had read out a short note on how products are transported to the consumer, a

plenum discussion about the advantages of factory outlets developed. A major task in this lesson was a reading exercise, where the learners had to put the events of the chocolate production chain into the correct order. Thirty minutes into the lesson, this exercise was finished and the teacher drew the students' attention to organizational matters concerning the pilot study that their school is participating in. The remaining couple of minutes were used for a grammar exercise on prepositions plus a supply chain diagram that needed to be labeled correctly.

Finally, lessons number 7 and 8 were recorded in the 13th grade in school B. It was a double lesson with 80 minutes in total. After introductory remarks concerning the final exams, the teacher introduced the new topic of social welfare and poverty. The first task was primarily a vocabulary exercise where the students matched words with explanatory statements. For example *low self-esteem* belonged to "You always feel like you're good for nothing – and people know it." The main task of the first lesson was a speaking activity. The plenum brainstormed reasons for poverty, while the teacher took notes on the board. In the last five minutes of lesson 7 the learners chose one of the following four pictures (Figure 11) and prepared a three minute monologue about them.

Figure 11. Poverty pictures (Focus on modern business: 127)

As stated above, there was no break in the double lessons, therefore, the ringing bell only signaled the end of the preparation phase and the beginning of the

presentations. Four students, one for every picture, presented their monologues to the plenum. Afterward, the group did a listening exercise on *Poverty in the UK*, during which the learners had to note down the six main reasons of poverty mentioned in the report. The following comparison of the notes was basically the last step, because another teacher interrupted the lesson and asked the teacher to help with something outside of the classroom. He told the students to do an exercise in the meantime and left 15 minutes earlier. He came back to end the lesson, but there was no time left to compare the task.

5.6 Adapting CDF model

As mentioned in section 5.2, the first step in the data analysis was a spontaneous and manual analysis to find out whether the CDF model had to be adapted for this specific study. The results of this initial step showed no need of changing the model. It was possible to code the data using the seven CDF types proposed by Dalton-Puffer. Consequently, the construct seemed to be perfectly applicable for the data set and no adaptations were undertaken. Therefore, Dalton-Puffer's CDF construct did not only serve as a framework, it was also the basic means of analysis in this study.

Even though the model was in general well suited for the purpose, two minor difficulties became apparent during the first phase of analysis. First, the question of how to deal with German conversation and translations had to be solved. Since this study is generally interested in cognitive processes in discourse, the decision was made to include German discourse in the analysis, too. Nevertheless, a German counterpart was added to each CDF type, if necessary, meaning that there are for example two DESCRIBING types in this study, one for English and one for German utterances, i.e. DS and DS-G respectively. This allows for a more detailed analysis of the linguistic realizations of individual CDF types.

Second, translations were treated as definitions, however incomplete they might be (cf. section 4.2). Additionally, they were also coded as German statements. A translation is, therefore, highlighted by the following code: DF-G. More information on the issue of L1 is provided in the following section on data coding.

Finally, assigning specific CDF types to stretches of discourse was less obvious than the theory might suggest. Since qualitative analysis is to a certain extent necessarily dependent on the researcher, i.e. subjective, this difficulty could not be removed completely. However, in cases of doubt, a thorough discussion of the available alternatives and reasons for the choice made is provided in section 5.7.

After having tested the applicability of Dalton-Puffer's construct, the data analysis could start. This was done with the aid of the atlas.ti program. The phase of data coding is explained in the following section.

5.7 Data coding

As already said, the initial data coding was done manually and spontaneously to check the construct's applicability. The actual analysis is based on coding carried out with the program atlas.ti. According to the manufacturer, it "is one of the most powerful tools for qualitative research." (atlas.ti 2016) After an introductory online tutorial and familiarization with the program, the coding started.

Basically, the data was coded according to Dalton-Puffer's CDF construct, meaning that each of the eight lesson transcripts was searched for the following seven discourse functions: CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE, and REPORT. Table 8 is a summary of the codes which were defined for each CDF.

CDF type	code
CLASSIFY	CL
DEFINE	DF
DESCRIBE	DS
EVALUATE	EV
EXPLAIN	EA
EXPLORE	EO
REPORT	REP

Table 8. Codes

Even though it means to forestall some results, the question of meta-talk needs to be addressed at this point. There was no meta-talk about CDFs, but about grammar, vocabulary and pronunciation. In order to be able to refer to these instances in the

qualitative analysis, they were highlighted with the codes meta-gr, meta-voc and meta-pronunc. There is one additional code, meta-complaints, which refers to a passage in lesson 6 where the learners realized that an exercise continued on the following page in the book and started moaning extensively about the layout of the book. Since the decision had been taken to exclude managerial issues, this passage could not be coded as EVALUATE but needed an extra code.

This study also aims at examining by whom the CDF types are realized. Consequently, it was necessary to create two separate codes for each CDF, one for student and one for teacher statements. To give an example, the code family CLASSIFY consists of the following two codes: CL-S and CL-T for student and teacher respectively. If a discourse function was produced collaboratively by teachers and students, the passage in the data was highlighted by a comment. Atlas.ti marks comments with a little wave, i.e. ~, which makes it easy to spot those special cases in the analysis.

A similar issue to the initiator case mentioned above is connected to definitions, descriptions, evaluations and reports. It was unclear how to code situations where learners uttered definitions or descriptions, but did so only because they were reading out example sentences from a worksheet. These cases appeared, for instance, in lesson 3 when the group was comparing an exercise. Extract 1 below is an example of such a case.

> T: Mhm. Sf8.
> Sf8: Carbon footprint… the amount of CO2 a person creates by doing something.
> T: Mhm, ok, Sf11.

Extract 1. DF-book

Obviously, DEFINE was the best CDF here, but in order to highlight the difference between 'read out' and 'genuine' definitions and descriptions, i.e. produced independently by students or teachers, separate codes were created: DF-book and DS-book. An example of the latter would be the completion of example sentences with newly acquired vocabulary, as in extract 2.

T:	Mhm, instead of the I, ok. So, relationship words. Sf5.
Sf5:	Khrm.. ahm.. Are Steve and Eddie an item? Ah yes, they got together at the school party.
T:	Exactly, good.

Extract 2. DS-book

In extract 2 and cases similar to it, the meaning of a new word (*item*) is further specified (*they got together*) and, consequently, this discourse function belongs to DESCRIBE. Likewise, a listening comprehension that featured five speakers giving their opinion on the EU – clearly a case of EVALUATE – was coded as EV-book. Moreover, there was another listening comprehension that presented a report on poverty in the UK. This was also highlighted by REP-book. The reason for creating separate codes for the instances mentioned above is that it was necessary for being able to answer research question number two, i.e. by whom the CDFs are realized. Additionally, it allows for a more detailed analysis of the data. Table 9 below summarizes the codes created for the different initiators.

initiator	code
student	-S
teacher	-T
book, worksheet, listening, reading	-book

Table 9. Codes for initiators

In the process of coding, several questions or difficulties arose that needed special attention. First, difficulties mostly revolved around distinguishing between CDF types (cf. section 5.6). As stated in section 4.7, the boundaries between the individual CDFs are partly quite fuzzy and it is often difficult to say, whether a statement is type X or type Y. This empirical study can definitely underline this feature of the CDF construct. To make this clearer, consider the example of speaking about current problems that our planet is currently facing, taken from lesson 3:

T:	Mhm, nature and environment. So, which problems can you think of, Sf7?
Sf7:	Ahm, rubbish gets thrown into the sea.
T:	Mhm. \<makes notes on PC> Ja?

Extract 3. Fuzzy boundaries

It could be argued that this phase is an instance of DESCRIBE, simply giving details of what can be seen or what is experienced. It could also be a REPORT on issues external to the classroom and on which the student has at least some knowledge claim (because she has seen a documentary on TV, saw trash herself on her last holiday at seaside, etc.). EXPLAIN would have been possible, too, if the student had commented on her idea. Since the student did not provide lengthy explanations or presented the problem in a sophisticated manner, the decision was made to code it – and others similar to it – as DESCRIBE. Similarly, in lessons 5 and 7, there were speaking activities that listed benefits of the EU and reasons for poverty. Statements made in the course of these activities were treated in the same way. Only in those rare cases where the learners gave reasons for or justified their contribution, the statements were coded as EXPLAIN. Consider Extract 4 below, where the student offers a reason why the polar bear is in danger of extinction:

> T: Good. More problems? Mhm?
> Sf1:   Ahm the icebear is dying out because it's always getting warmer.
> T: Mhm. […]

Extract 4. Student explanation

A second difficulty in connection with differentiating between two CDF types refers to instances of summarizing facts of the previous lesson. For instance, students in lesson 2 were asked to repeat what a Hindu wedding was like, as in extract 5:

> T: Anything that you can remember.
> Sm1:   <L1at> Aso. </L1at> When they are ahm when they are going around the flame ands wish a long life and happiness and uhm they are getting some flowers and putting some flowers on the grounds. The-the Hindu wedding is very colorful.
> T: Mhm.

Extract 5. Summarizing previous lessons

Since those statements deal with facts or processes, content wise, they could be assigned to DESCRIBE. On the other hand, considering that the student is just retelling what he has learned the day before, REPORT would also be a possible CDF type in this case. The decision was made that the focus should be on the content of an utterance, irrespective of the situation. Therefore, DESCRIBE was opted for.

Second, there were two questions in connection with CLASSIFY. The first one was that students did on the one hand categorize different items, on the other hand, they did not really verbalize these classifications. Moreover, they did not give any justification or explanations as far as characteristics are concerned that had led them to their decision. For example, the learners in lesson 2 completed a table that asked them to decide whether an item was used in a Hindu or an Islamic wedding. They basically read out their solution, without further comments or questions from the teacher. Notice how the student in extract 6 classifies the item in question.

> T: Mhm, Sf5.
> Sf5:   Mm, krm, ah walima is for the Islamic wedding.
> T: Mhm.

Extract 6. CL-S

Despite the brevity of statements like this, they were coded as CLASSIFY, because the students had carried out the cognitive task of grouping items according to shared characteristics. The second difficulty as regards CLASSIFY applies to comparisons. In lesson 2 there was a speaking activity in which the class talked about similarities and differences between various kinds of weddings. In principle, these statements would clearly need to be coded as CLASSIFY. Yet a great number of points raised in this conversation were based on personal experience, which is why, initially, REPORT seemed to be suitable as well. Extract 7 serves as an example for these cases.

> Sm1: I don't know ah of ahm if it's the same as in Austrian or Romanian wedding but our weddings are recorded by an ah camera (chemistry).
> T: Ok, by a professional camera man, mhm. And you give-uh, you got films afterwards?=
> Sm1: = yes, ah, every family ähm fam-family family <hesitates>
> T: <26> hires? </26>
> Sm1: <26> Family member </26>
> T: a photographer?
> Sm1: <un> XXXX </un>. Pro family one.
> T: Ok, mhm, quite a lot.
> Sf2:   We also have this and we also have four CDs of films and so on of the wedding and how it is prepared and how the bridegroom and bride dress and so and how we go to each other's place.
> T: So every step is <27> documented. </27>

Sf2:   <27> Yes. </27>
T: Mhm, good.

Extract 7. Comparisons

However, since these personal stories where at least told in a sequence that answered to a previous statement made by a colleague they were finally coded as CLASSIFY. This code was assigned even though the link to the antecedent was not always made explicit from a linguistic point of view, for instance by means of connectives or phrases like *we also have this* as in extract 7 above, *in contrast to what you've just mentioned* or *in Austria we have a similar tradition*.

Third, another crucial point in connection with data coding refers to the quantitative level of analysis. One question was whether CDFs should be coded per student or per topic. To be more precise, a decision was needed on the question whether, for instance, the speaking activity in lesson 3 on problems our planet is currently facing should be coded as one huge instance of DESCRIBE, because all contributions belong to the same topic, or whether individual student contributions should be highlighted. It was decided that the central aspect was the initiator; consequently, each contribution was coded separately. This decision resulted in considerably high numbers of CDFs and needs to be kept in mind in the quantitative analysis. There is one exception to the rule, namely the process description on the production of chocolate in lesson 6. It is coded as one coherent stretch of discourse, even though it is co-constructed by several learners and the teacher, because the individual contributions do not correspond to any CDF type if considered in an isolated way. A second consideration as regards quantification refers to the special case of DS-book. As mentioned above, this code is used for cases in which newly acquired vocabulary is used in example sentences. Since the agreement was reached that every contribution is coded separately, there is an extremely high number of DS-book codes, which boosts the quantity of DESCRIBE. Again, this factor is kept in mind and commented upon in the quantitative analysis.

Fourth, a further point of importance in the data coding process was the question of how to code German utterances. In section 5.6 I have already pointed out that they

are treated as if they were English, because this study analyzes classroom language in general and not only L2. Extract 8 shows a case where a student is engaged in CLASSIFYING but lacks the appropriate English term. He uses the German word instead, which is coded as CL-S-G.

> T: Secondary. Shipping?
> SfX: Primar-Primary.
> SfX: <L1at> Dazwischen. </L1at> The one=
> T: = Ja, that's the one between?
> SfX: Prima-
> T: - primary and secondary, ja.

Extract 8. CL-S-G

Additionally, it is stated in 5.6 that translations are coded as DEFINE and the code –G to mark this special kind of definitions. Depending on the initiator, i.e. student or teacher, the code is either DF-S-G or DF-T-G. Usually, words in the data are translated from English into German. Occasionally, however, there are short and concise translations from German into English, too. These are also coded as DF-S-G or DF-T-G. Extract 9 shows an example.

> T: Yes. Why is that a problem that earth is facing? Well, actually, it means we are not.. we-we don't gets done by a bee?
> Sf5: Because it cannot <L1at> bestäuben? </L1at>
> T: Dust, dust.
> Sf5: Dust the flowers.
> T: Mhm, or brush.

Extract 9. Translation into English

As can be seen, the learner is in obvious need for the appropriate English collocation and the teacher provides her with a quick and simple translation.

Fifth, the last essential question concerned the treatment of organizational or managerial talk in the classroom. What is meant by organizational talk is for example classroom management like reproving or praising, transitions from one task to another, explaining the next activity, discussions about the upcoming final exams or school trips. In the beginning, these were considered as external information giving and consequently counted as REPORT. However, it was necessary

to distinguish organizational from content matters. Therefore, an extra code, namely REP-T-org, was invented. The more data was coded, the more complex the codes became. Not only had the quantitative level become more and more confusing, also the qualitative analysis was in danger of becoming incomprehensible. As a consequence, the decision was finally made to exclude any organizational issues and concentrate on the content instead.

Finally, a minor issue is connected to role plays. Initially, it appeared as if they needed special treatment. However, since this study investigates classroom language in general, it soon became clear that any discourse is equally valuable, no matter if it is produced by the book, the teacher, the student or the student pretending to be someone else.

6 Results and main findings

The principal aim of this study was to test the applicability of Dalton-Puffer's CDF construct and to find out, which discourse functions are applied in real classrooms. The first main result of this study is that the model definitely *is* a useful heuristic for analyzing classroom language. Examples of each of the seven discourse functions identified by Dalton-Puffer (CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT) could be detected in the lesson transcripts. What is more, CDFs were found in quite a high number. Before presenting the qualitative level in detail, the following section first discusses the results of this study in quantitative terms.

6.1 Occurrences of CDF types

This chapter examines the first sub research question: How often are the CDFs applied? As already said, high numbers of CDFs can be found in the data, i.e. eight transcripts of Austrian upper secondary EFL lessons. To be more precise, the total amount is 481 CDFs. In comparison to a similar study on Physics lessons by Kröss (2014: 45), who found only 95 CDFs, this number is considerable. What needs to be kept in mind, however, is that Kröss differentiates between CDFs and so-called 'moves'. This crucial difference between our studies is explained in more detail below.

On the one hand the high numbers are due to the specific coding which considers the course books and worksheets as initiators. In order to find out how many descriptions, for instance, are 'genuine' in the sense that they are produced independently by the students or teachers, the program atlas.ti needs to be consulted.
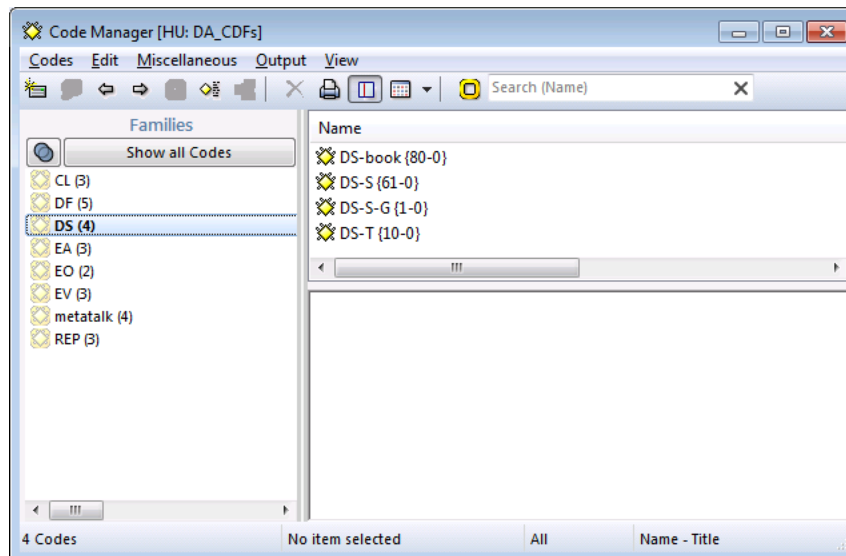
Figure 12. 'genuine' descriptions

For example, the code family DESCRIBE includes four codes, namely DS-book, DS-S, DS-S-G and DS-T. If the amount of DS-book, i.e. 80, is subtracted from the total number of DESCRIBE, i.e. 152, the number of 'genuine' descriptions is 72. Nevertheless, since the interest of this study is classroom language at large, it is perfectly valid to conclude that the data shows a total of 152 instances of DESCRIBE.

On the other hand, as stated in section 5.7, the high numbers are partly also due to the coding procedure which placed an emphasis on the initiator. Other than Kröss (2014) in her study on Physics lessons, this study does not differentiate between CDFs and moves. Kröss coded passages according to their overall communicative intention and identified sub-CDFs, so-called 'moves', within the CDF types. This is the reason why she arrived at only 95 CDFs which were, however, realized by 504 'moves' (Kröss 2014: 45).[8] Since this study considers each CDF type in isolation, even if it is just one sentence, the total number is best compared to Kröss' moves.

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[8] For more information on the difference between CDFs and moves in Krössian terms, see Kröss 2014: 36.

Having clarified these differences, it is now possible to continue with the quantitative analysis. Table 10 provides an overview of the CDF types found in this empirical research.

CDF	occurrences
CL	55
DF	97
DS	152
EA	69
EO	15
EV	57
REP	36
TOTAL	**481**

Table 10. Occurrences of CDFs

All in all, there are 481 CDFs in the data. On closer inspection it becomes apparent that DESCRIBE is by far the most frequent CDF, followed by DEFINE and EXPLAIN. The least common discourse function is EXPLORE. This might partly be due to the fact it requires relatively sophisticated language (cf. section 4.7). To make the ranking more comprehensible, figure 13 features a visual representation.
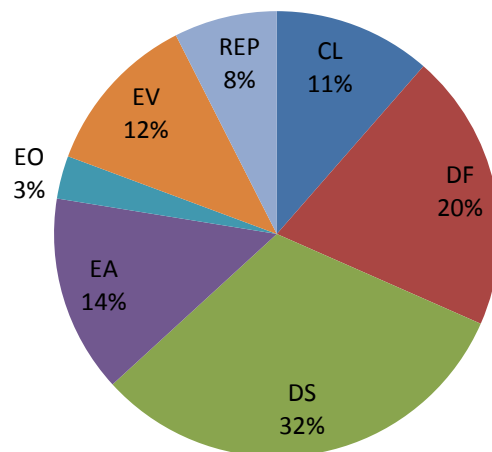
Figure 13. Occurrences of CDFs in percent

The pie chart shows quite clearly that almost a third of all CDFs are descriptions. Definitions rank second, accounting for one fifth of all occurrences. The third most

common CDF is EXPLAIN with 14 percent. The rarest CDF is EXPLORE with only three per cent.

As far as the distribution of CDFs across the eight lessons is concerned, the average occurrence is 60 (60.125). Put differently, there was a total of 326 minutes of class time. This results in an average occurrence of 1.5 realizations per minute, or 3 realizations in 2 minutes. Consider table 11 below:

	L1	L2	L3	L4	L5	L6	L7+8	TOTAL
CL		30			2	23		**55**
DF	8	6	22	1	8	36	16	**97**
DS	39	28	9	32	12	5	27	**152**
EA		1	15	14	13	7	19	**69**
EO	2		5	3			5	**15**
EV	2	2	10	9	21	1	12	**57**
REP	2	3	8	8	5		10	**36**
	53	**70**	**69**	**67**	**61**	**72**	**89**	**481**

Table 11. Distribution of CDFs across lessons

Comparing the individual lessons to the average occurrence, i.e. 60, the CDFs are more or less evenly distributed. The majority of lessons show a total of CDFs close to the average. More precisely, only lessons 7 and 8 are strikingly different. These two lessons were taught in a double lesson; consequently, the number of CDFs should be around 120, whereas it is actually just 89. One possible explanation for the low number of CDFs in lessons 7 and 8 might be the interruption that took place toward the end. The teacher was asked to leave the classroom and help preparing something outside the class. This happened approximately 15 minutes prior to the break. Moreover, these lessons took place in school B, which takes place in a pilot study and which had to shorten their lessons to 40 minutes (cf. section 5.5). Instead of the planned 80 minutes, the group had only 65 minutes, which might have led to the limited number of CDFs as portrayed in table 11.

In conclusion, the quantitative analysis of the data revealed that there are 481 occurrences of CDFs in the corpus. The most frequent types are DESCRIBE, DEFINE and EXPLAIN. The lowest number of realization is found for EXPLORE. Furthermore,

there are on average 60 occurrences per lesson. The next section investigates by whom the CDFs are realized.

6.2 Initiators

After the presentation of quantitative results, this chapter responds to the second sub question of this study, i.e. who are the initiators of the CDFs? In other words, who – or what – produces discourse that hints at underlying cognitive endeavors.

First of all, a short repetition: This study does not only examine language that is produced by humans but classroom language in general. Therefore, attention is also paid to language that the groups encounter in their course books, listening comprehensions, reading comprehensions or on worksheets. This is subject to the condition that this kind of language is actively used in the course of the lessons. Thus, course books of the respective grade in general, written assignments as well as any other materials not worked on directly are excluded from the analysis.

Following these principles, there are three main groups of initiators:

1) student
2) teacher
3) book

While 1) and 2) are self-explanatory, 3) needs further explanation. The initiator 'book' comprises any non-human language production, i.e. worksheets, exercises in the course books, listenings and readings. Extract 10 from lesson 3 is an example of DEFINE that is realized by 'book'.

> T: EcONomies, right, Sf12.
> Sf12: Ah, solar panels, black electronic sheets which capture energy from the sun.
> T: Mhm, ah, Sf7.

Extract 10. DF-book

This extract shows a passage where the group was comparing an exercise and students read out definitions of new vocabulary from the worksheet. Since the

sentence *"Ah, solar panels,…"* is not independently produced by the student or the teacher, the initiator in this case is 'book'.

Students and teachers also frequently collaborate in the production of discourse functions. By doing so, they create a sub group of initiators: co-constructed. In this study, co-constructed CDFs do not have an extra code, but they are marked with a comment in atlas.ti. There is a section on the issue of co-constructed CDFs below.

After the basic outline above, it is possible to turn to the in-depth discussion of initiators. On this account, figure 14 provides a basic overview of the initiators.
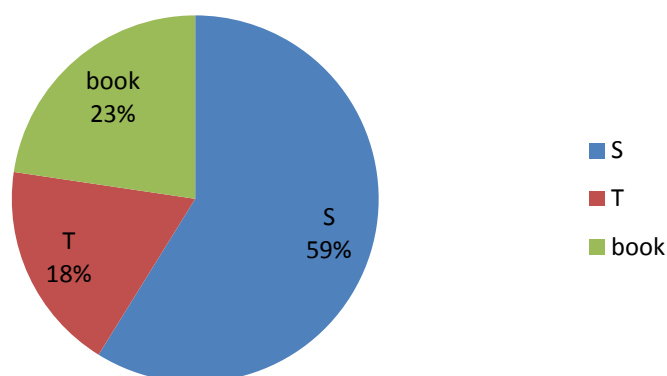
Figure 14. Initiators in percent

The pie chart reveals that the most studious initiator so to speak is the students. With 59 percent of all occurrences (283 out of 481) they are responsible for more than half of the realizations. 'Book' ranks second, with less than a fourth of the realizations (109) and the teachers are last with 18 percent (89 occurrences). This indicates that the data set consists of extremely student-centered language lessons. This observation corresponds to the prevalent conception of language teaching that places an emphasis on providing space for the L2 learners to practice their skills. In this sense, it is not surprising at all. What is noteworthy is that Kröss' (2014: 52) Physics data shows only six percent of purely student realized CDFs. There is a high number of co-constructed CDFs, but she concedes that many of them "only show

limited student participation." However, this is most probably due to a different kind of pedagogy in subjects like Physics.

Consider figure 15 below, for a more detailed analysis of the distribution of initiators across CDF types.
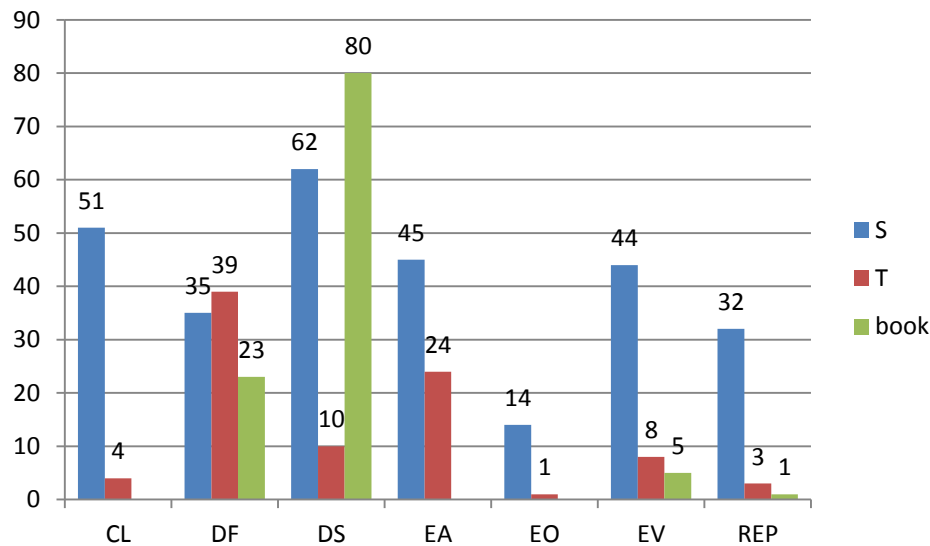

Figure 15. Initiators in total numbers

As far as students are concerned, the CDF type that is performed most often is DESCRIBE (62 times). The remaining CDFs are more or less equally often used by students, except for EXPLORE. This CDF comes last, with only 14 realizations by students. The results for student realizations correspond to the overall outcome of the quantitative analysis in section 6.1. It also found that DESCRIBE was the most common and EXPLORE the least common CDF type.

As regards teachers, the outcome of the analysis deviates from these general findings. The most frequent CDF type among teachers is DEFINE. Admittedly, EXPLORE is also the least frequent function. There is only one teacher realization of this CDF. However, REPORT (3 realizations) and CLASSIFY (4 realizations) are extremely rare as well.

In connection with the initiator 'book', not every CDF type can be found. Only four CDFs appear in the table, namely DEFINE, DESCRIBE, EVALUATE and REPORT. The

highest number of realizations is connected to DESCRIBE. Moreover, DEFINE is also frequently performed by 'book'.

As concluded above, there is the overall tendency that students produce significantly more CDFs than teachers. Surprisingly, there is one CDF type that differs strikingly from this general outcome, namely DEFINE. Whereas the students usually outnumber the teachers by far, the teacher-student ratio of DEFINE is 39 to 35. In other words, this is the only CDF type where the distribution is almost even. A qualitative analysis of DEFINE offers a possible reason for this phenomenon. Teacher definitions are frequently used to paraphrase a student's comment or to enrich their definitions. In this sense, it seems as if the teachers paid special attention to the correctness of their students' definitions. This behavior could explain the extraordinary ratio of DEFINE.

Finally, the aspect of co-constructed CDFs needs to be addressed. What is meant by 'co-constructed' is a joint realization of a CDF type. In other words, two or more initiators can collaborate in performing a CDF. If this is the case, the CDF in question is called 'co-constructed'. There are two possibilities of a joint realization: student-student(s) or student(s)-teacher. The former refers to occurrences that are collectively performed by at least two (or more) students, the latter to corporate realizations of one (or more) student(s) and the teacher. A quantitative analysis of the data has identified 209 co-constructed CDFs. They constitute 44 percent of the overall 481 occurrences in the corpus.

In sum, there are basically three different initiators of CDF types: students, teachers and 'book'. The latter refers to any language important for the lesson that is not produced by either students or teachers. Examples are exercises in the course book or on worksheets, a listening or a reading. The majority of CDFs identified in the data set are realized by the students. Teacher realizations are quite limited, they account for only 18 percent. Nearly half of the occurrences are co-constructed by the students or by students and the teacher. The following section compares and contrasts the results of the two different school types, AHS and BHS.

6.3 AHS vs. BHS

This chapter tries to answer the third sub question by discussing the differences between the upper secondary grammar school (AHS) and the upper secondary vocation school (BHS). Unfortunately, as pointed out in chapter 5.4, the participants of this study, who were chosen by the teachers, range from grade 10 to 13. Since their age and especially their language levels differ considerably, a comparison across school types is rather difficult. Nevertheless, a quantitative juxtaposition is ventured and it is attempted to give qualitative explanations for the outcome where possible.

First of all, it is interesting to contrast the realization of CDFs in the respective schools. For this purpose, figure 16 serves as a summary.
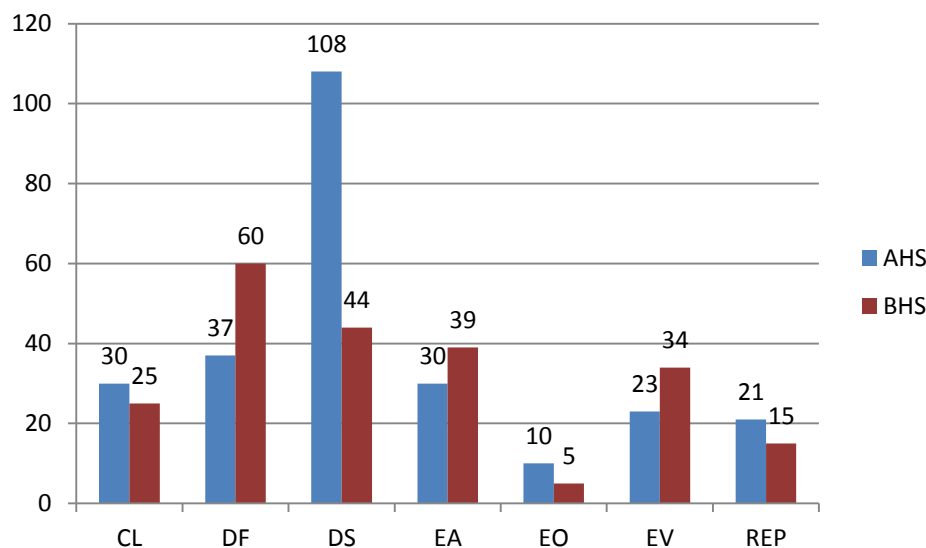
Figure 16. CDFs per school in total numbers

Basically, the AHS is responsible for 54 percent of CDF occurrences, whereas only 46 percent are performed in the BHS. This might probably be due to the different lesson lengths. While lessons in the AHS lasted for 50 minutes each, the BHS lessons were only 40 minutes. This means that the BHS groups had in fact four times 10 minutes less time than the AHS groups, which amounts to the considerable time gap of 40 minutes. Needles to say, many more CDFs could have been performed in the BHS in these 40 minutes. All in all, the AHS recordings were approx. 190 minutes long, the

BHS only 136 minutes. For comparing the two school types, the average CDF occurrence is a handy tool. As stated above, on average there were 3 realizations of CDF types every two minutes. This would mean that the averaged ratio of occurrences between the AHS and the BHS is 280 to 201. Class time does seem to be an influential character in this study.

In regard to the most frequent CDF type, the first crucial difference between AHS and BHS is noticed. Whereas the initiators in the AHS performed DESCRIBE most often, the most common CDF in the BHS is DEFINE. Even though it is hard to compare groups that are as different as those in the data set, the educational setting seems to have an influence on these findings. Since the vocational school takes part in the pilot project described in section 5.5, lessons are only 40 minutes long. Teacher B was quite clear from the beginning in admitting that the missing ten minutes made saving time a necessity. As a consequence, they do not compare homework during the scheduled lessons. The very reverse happened in the AHS lessons, where a considerable amount of time was spent on going through homework assignments in the plenum. Coming back to the fact that DESCRIBE is the most frequent CDF in the AHS but not in the BHS, comparing homework exercises might be a possible reason for the phenomenon. There are two coinciding aspects to it. First, example sentences that use newly acquired vocabulary are coded as DESCRIBE, because they specify the meaning of these new words. Second, a significant amount of homework in the AHS revolved around completing vocabulary tasks like this, while there was no homework comparison in the BHS. Consequently, the difference in the educational setting, i.e. no time for homework comparisons, might have resulted in the contrast as regards the most common CDF type.

In reference to the most infrequent CDF type, a parallel can be drawn between the grammar and the vocational school. In both settings, EXPLORE is least often performed, with only two respectively one percent of occurrences. As already mentioned, EXPLORE requires rather complex lexico-grammatical knowledge. Thus its ranking had been anticipated. What is remarkable, however, is that the number of explorations in the BHS is even lower than in the AHS, although the learners in the

former presumably had an advanced level of English. Unfortunately, it is beyond the scope of this paper to examine the reason for this.

Excluding the most commonly and most uncommonly used CDFs, occurrences of the remaining types are quite evenly distributed in both the AHS and BHS. Additionally, the 'leader' in connection with individual CDFs alternates constantly. While there are more incidents of CLASSIFY and REPORT in the grammar school, EXPLAIN and EVALUATE are more frequent in the vocational school. Albeit the initial hypothesis that the advanced language level in the BHS results in a certain trend toward linguistically more complex CDFs like REPORT or EXPLORE, no remarkable tendency can be detected in the overall distribution. In order to investigate this hypothesis a little further, student and teacher CDFs are now considered in isolation. Figure 17 features the discourse functions realized by students.
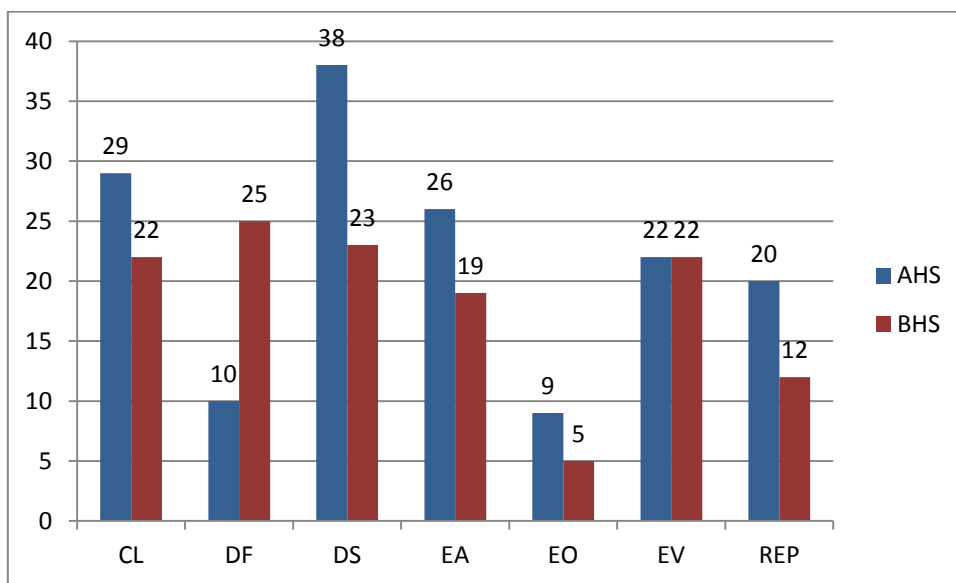

Figure 17. Student CDFs in total numbers

When analyzing student CDFs in isolation, the outcome that is already visible in the first general examination repeats itself. While DESCRIBE is the most common CDF in the AHS, it is DEFINE in the BHS and the lowest number of occurrences in the AHS as well as in the BHS corresponds to EXPLORE. In contrast to the observation made in the paragraph above, the school types do not alternate their leading position in connection to the individual CDF types. Quite the contrary, the AHS students

produce more classifications, explanations and reports. Moreover, the remaining EVALUATE is realized 22 times by both, AHS and BHS students. This leads to the conclusion that the initial hypothesis must be dismissed. The presumed advanced level of English of the BHS students does not result in a higher number of realizations of linguistically complex CDFs. All seven CDF types were more or less regularly used, without any striking preferences.

Finally, it is interesting to examine whether the comparison of the two teachers reveals significant differences in the distribution of their CDFs. The horizontal bar chart in figure 18 yields insights into this matter.
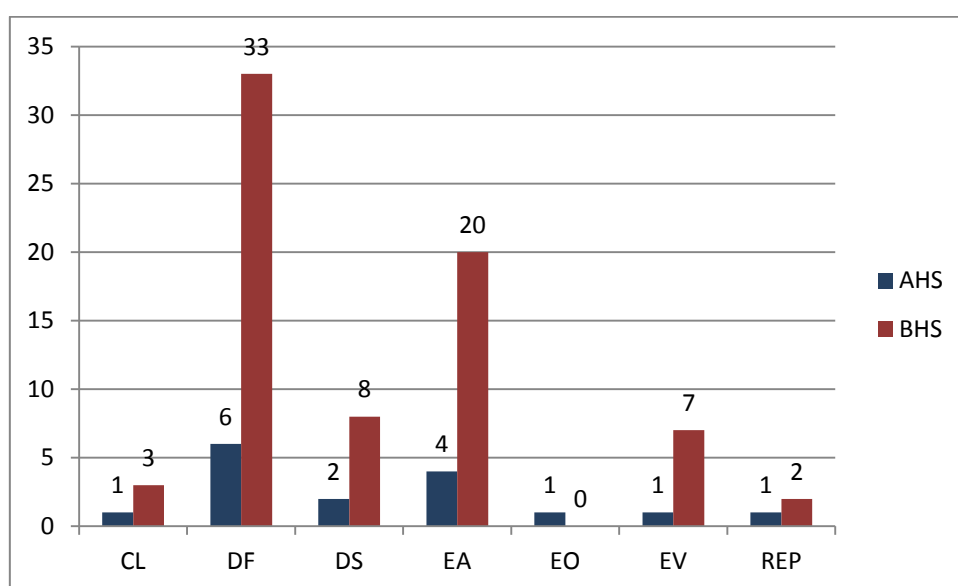

Figure 18. Teacher CDFs in total numbers

The basic ratio between the AHS and the BHS teacher is 16 to 73. The first conclusion that can be drawn from this is that the BHS teacher performs substantially more CDFs than the AHS teacher. Inferring that teacher B has much more talking time than teacher A is not possible. The only implication possible is that teacher B uses language to realize CDFs, while teacher A produces something else, presented in the following sections. They try to answer the question of why teacher A performs fewer CDFs.

A closer look at the data shows intriguing differences in teaching style, which seem to be the reason for the discrepancy mentioned above. First, their methods of

introducing or explaining upcoming tasks, also known in pedagogy as 'transitions', are completely converse. Compare extracts 11 and 12 below:

> T: Mhm, exactly and he, well, actually he performs the ceremony, ok? <writes it on the board> *Alright. Good, let's turn to page 168. (17) So, you've got a picture here. What type of wedding might that be? Or which culture, which country might it be from?*
> Sf5: A Indian wedding.
> T: *Mhm, yes, it's a picture of a traditional Hindu wedding. And, Sf4, could you start reading, please? It's the orange text, by the way.*
> Sf4: In a traditional Hindu wedding…

Extract 11. Transition teacher A

> T: = Ah, it depends. Amazon is like not a typical wholesaler-retailer thing. Because Amazon is both wholesaler and retailer, ja? Amazon is saving costs because they are both things at the same time. So they get rid of the costs in between, ja. It's not typical. That's why it's successful, ja. *Ok, good. Look at page 32, 32. Producing and selling products <looks for reader> Sf2.*
> Sf2: Mhm.
> T: Producing and selling products <waits for Sf2 to start reading>
> Sf2: <L1at> Wos? Aso. </L1at>
> T: 32.
> Sf2: Products involves a lot of <hesitates> wolves?

Extract 12. Transition teacher B

The passages in italics show how the teachers introduce the next exercise, in these cases it is a reading. At the beginning of extract 11, teacher A finishes a previous task by repeating a student's contribution before telling the learners to open their books. This demand is followed by 17 seconds of students rummaging in their bags and opening their course books. Then teacher A inserts a pre-reading activity and invites the group to guess the topic of the reading from the picture. Next, he or she confirms the girl's suggestion that the text is about a Hindu wedding. Finally, teacher A assigns a reader and gives instructions on which text he should read. All of these strategies involve quite some language production on the teacher's account. Note, on the contrary, that after finishing his or her explanation teacher B immediately tells the learners to go to a certain page. Without further hesitation he or she starts reading the first sentence of the text, searches the group for a reader and appoints one by calling her name. Obviously, the girl does not know what she is supposed to

do. This is indicated by her 'Mhm', which is why the teacher repeats the first sentence of the text. Still, the student is unsure about why the teacher has called her, until she realizes that it is her turn to read. The teacher adds the correct page and the girl finally starts reading. It takes teacher B far less words and less time than teacher A to direct the group to the next task. What is striking, too, is the linguistic formats that the teachers choose. While teacher A uses the phrase *Good, let's turn to page*, including herself, teacher B opts for an imperative, namely *Look at page*. In sum, teacher A uses a considerable amount of his or her talking time for transitions and organizational talk. Numerous examples similar to extract 11 can be found in teacher A's lessons, whereas teacher B contents his- or herself with short and concise imperatives. He or she sometimes only gives the page number. This might be a reasons why teacher A performs fewer CDFs than teacher B.

Returning to figure 18 and the distribution of teacher CDFs, there is a similarity in connection with the most prominent CDF type. Not only the AHS but also the BHS teacher use DEFINE most often. Note that there are only six occurrences of DEFINE in the AHS, but 33 in the BHS. Still, this CDF ranks first in both schools. The least frequent type is EXPLORE, which is used only once by teacher A and actually not at all by teacher B. Furthermore, CLASSIFY (one resp. three occurrences) and REPORT (one resp. two occurrences) are almost equally rarely performed by the two teachers.

A noteworthy difference as far as teacher CDFs are concerned is linked to EXPLAIN. As stated in chapter 4.5, teaching is often regarded as one endless phase of explaining, at least in its basic everyday usage "To make plain or intelligible; to clear of obscurity or difficulty; to give details of or to unfold (a matter)" as defined by the OED. Since the CDF construct limits EXPLAIN to causal relations, the generally relatively low number of teacher explanations, i.e. 24 in contrast to 69 student explanations, does not come as a surprise. A notable difference refers to the distribution of these 24 occurrences among the AHS and the BHS teacher. While teacher A performs four explanations, teacher B realizes the remaining 20 occurrences of EXPLAIN. This ratio is rather surprising, because the data indicates

both teachers' preference to guide their learners toward an explanation themselves. Extract 13 and 14 show examples of how the two teachers push their learners by asking questions as long as they give reasons for their contributions themselves.

Sf5:   Bees are dying out.

T: Yes. Why is that a problem that earth is facing? Well, actually, it means we are not.. we-we don't gets done by a bee?

Sf5:   Because it cannot <L1at> bestäuben? </L1at>

T: Dust, dust.

Sf5:   Dust the flowers.

T: Mhm, or brush.

Sf5:   Yes, the flowers will die out too.

T: Ok, if it's not just the flow-, well, it's not so much a problem if it were flowers only.

Sx: Foods won't grow.

T: Mhm, exactly. So this might lead to what?

Sf11:   <un> XXXX </un> food anymore.

T: Mhm, and this might lead to,… I've given you the word, *to extinction of the human race.* Extinction, who can think of a good explanation for that? Or a German translation?

Sx: Mm.. human race, ah, dies-

T: -dies out. Exactly. So, sorry, that's wrong. <corrects spelling on PC> Good.

Extract 13. EXPLAIN teacher A pushing students

T: EU program. Ok? Good. So if you have a look at page 155 you have like a few statements, ja? First it says 'the Euro is causing big price increases'. True? Is the Euro causing price increases?

Sm3:   No.

T: How do you know it's not true?

Sm3:   You can't really s-where-there where there is no Euro it's also the same price or…

T: Ok, if you compare it to countries without the Euro. That's good, ah, ja, there's the same prices, so it can't be true. And? How do you know if prices increase? How do you know if things become more expensive? Which official figure?

Sm4:   Inflation rate=

T: = inflation rate. And the inflation rate is at the moment?

Sm2:   2 percent?

T: Ja, even lower, below 2 percent, yeah. *So it's not high, in former times we had like 3,4,5 percent a year, ja? This was high, so, no. It's not true.* Things get more expensive, that's true, but?

SmX: <several boys at the same time> Earn more.

T: You also earn more, right.

Extract 14. EXPLAIN teacher B

The extracts show that both teachers provide space for their students to give reasons themselves. However, a thorough qualitative analysis reveals that teacher B, in contrast to teacher A, inserts additional content information. In extract 14, this short passage of teacher explaining is highlighted by italics. By stating that the inflation rate was even higher than the current two percent in former times, teacher B offers an additional reason why the statement 'the Euro causes big price increases' is incorrect. In extract 13, teacher A also adds something, written in italics, but not on the content level but rather on the meta level of vocabulary. Therefore, teacher B's contribution in extract 14 is coded as EA-T, whereas teacher A's addition is part of EA-S. This subtle difference might have led to the contrasting results for teacher CDFs in the AHS and the BHS.

Summarizing the hard facts relating to similarities and contrast between the AHS and the BHS, there is a contrast as far as the most frequent CDF type is concerned. While it is DESCRIBE in the AHS, it is DEFINE in the BHS. However, both schools are in accordance as regards the most uncommon CDF type, i.e. EXPLORE. These observations are also true for the students' performance in the respective school. Both the contrast in connection with the most frequent and the similarity as regards the most uncommon CDF type are found in the distribution of student CDFs. Hence, the AHS students privilege DESCRIBE and the BHS students DEFINE, but they are in accordance on the low importance of EXPLORE. In regard to teacher CDFs, there is a notable contrast between the AHS and the BHS. The BHS teacher performs significantly more CDFs, which might possibly be due to a difference in teaching style. Nevertheless, the analysis of teacher CDFs also resulted in a similarity. Both the AHS and the BHS teacher realize DEFINE most and EXPLORE least often. The quantitative analysis of this empirical study finishes with this comparison of the two school types. The next chapters focus on the qualitative level.

6.4 Realization of CDFs

The qualitative analysis of the CDFs found in the data includes the following aspects: First of all, the seven CDF types CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT will be analyzed in terms of their exact functions in the corpus. Then, lexico-grammatical aspects are reviewed. Finally, overlaps of CDFs respectively co-occurrences of several types within one passage are discussed.

6.4.1 Functions of the CDFs

CLASSIFY

As presented in chapter 4.1, the underlying communicative intention of CLASSIFY is "I tell you how we can cut up the world according to certain ideas" (Dalton-Puffer, forthcoming). In the data there are two prevalent functions of CLASSIFY that are united by this communicative intention: categorizations and comparisons. Both options are dealt with in more detail in the following paragraphs.

As regards categorizations, they appear in different classroom situations. In one of them, taken from lesson 2, the students had to decide whether an item belonged to the Hindu or Islamic wedding. A number of categorizations occurred in lesson 6, when students discussed the EU and divided the member states into EURO and Schengen countries. Two further examples of categorizations can be found in lesson 6, namely allocating products to the respective industry sector and relating jobs to either a wholesaler or a retailer. Extract 15 from lesson 6 is an example of a categorization.

> T: Sf1, clothing, clothes go where?
> Sf1:   Jo, ahm, secondary? Secondary?
> T: Ja, definitely, ja. Clothes goes to secondary sector.

Extract 15. CLASSIFY categorization

This extract shows how a female student allocates the product *clothes* to the secondary sector. The sectors had been defined earlier in the lesson and her task is to pick the correct one.

As far as comparisons are concerned, many examples can be found in the AHS lessons. Owing to the topic, i.e. wedding ceremonies, the group engages in comparing and contrasting different types of weddings. An example of this activity is provided in extract 16.

T:	Mhm. Can you find any other similarities?
Sf6:	Ahm like the thing with the glass.
T:	<15> Mhm. </15>
Sf6:	<15> The </15> th-ah the bride in Austria does it with a flower how's it called? Ah..
T:	With flowers? Mhm.
Sf6:	Flowers, yeah. And she throws it over her head.
T:	Mhm.
Sf6:	Behind her there are standing several ahm females=
T:	= mhm=
Sf6:	= in any age. And next female who catches it marriage-marries the <16> next= </16>
T:	<16> = well, hopes </16>
Sf2:	<16> It's also in Romania </16>
T:	To get married. Sorry.

Extract 16. CLASSIFY comparison

Earlier in the lesson, female speaker 2 had explained that the couples at Romanian weddings throw glasses over their heads, which symbolizes luck in their life. In extract 16, female speaker 6 contrasts this custom to the Austrian tradition of throwing the bride's bouquet.

DEFINE

According to Dalton-Puffer's CDF construct, the communicative intention of DEFINE is "I tell you about the extension of this object of specialist knowledge". Similar to classifications, definitions also categorize terms and objects according to shared characteristics, but additionally they unambiguously distinguish the item under consideration from anything else. The corpus shows two variations of DEFINE that observe its communicative intention: definitions and translations. Each type is discussed below.

Definitions are the most typical examples of DEFINE. Mostly, definitions in the corpus are incomplete[9] and co-constructed[10] by the students and the teachers. They revolve around technical terms used in business, e.g. wholesaler or retailer, but also about common core words or concepts like *developed* and *developing countries*. Note how the definition is realized in extract 17.

> T: Gut. </L1at> Ok, so, if you go to page 155, 155. It's still the same topic. <T dealing with PC, preparing listening comprehension> (50) Good. Ah if you go to 155, ja? Ahm it's a listening comprehension, it's about migration. So what did we say is migration, Sf1?
> Sf1: Migration ahm people moving from country to country?
> T: Or?
> Sm1: Moving.
> T: Just moving. Even inside a country I said it's migration, ja? So just moving around, not necessarily emigrating or immigrating. It would also be like moving from Vorarlberg to Vienna. Things like that, ok?

Extract 17. DEFINE definition

This is a typical example of an incomplete, co-constructed definition, taken from lesson 5. The teacher asks the learners to define the word 'migration', guides the speakers through the process of defining and finally summarizes what the students have come up with.

A second important aspect of DEFINE are translations. In principle, they are regarded as incomplete definitions and, in this sense, actually form a subgroup of definitions. Nevertheless, translations appear with such a high frequency that they need to be considered in more detail. Translations either refer to prototypical word to word translations from German to English or vice versa, or they refer to longer

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[9] See 6.4.2 for a thorough discussion of lexico-grammatical aspects of DEFINE.
[10] On a qualitative level, reasons why the teachers take an active part in so many realizations in general, not only in connection with DEFINE, are: pushing students toward more elaborate contributions, enriching student statements or correcting students. Incentives for students to collaborate include: helping out a colleague, adding another aspect to a colleague's statement or unclear speaking rights, i.e. the teacher does not appoint a particular student and therefore the learners simply call out.

definitions of new vocabulary. Extract 18 combines both, a single word translation and a case of defining the word in English.

> Sf5:   Inadequate-quate diet=
> T: = diet. Inadequate diet. <L1at> Wos is </L1at> diet?
> Sf2:   <L1at> Ernährung. </L1at>
> T: Ja, ok, anything you eat in the end, it's not <L1at> Diät. </L1at> Not necessarily.

Extract 18. DEFINE translation

As can be seen, female speaker 2 ventured a word to word translation of *diet* from English into German, whereas the teacher defines the word in a verb phrase. Despite the varying strategies, both are translations in this context.

DESCRIBE

Because of its comparatively vague communicative intention "I tell you details of what can be seen (also metaphorically)", DESCRIBE is the most varied CDF in the corpus. It takes four different forms: descriptions, specifying the meaning of new vocabulary, naming something and enriching student contributions.

First of all, descriptions include both physical and functional as well as process descriptions. Even though the initiator 'book' produces many descriptions, too, this qualitative analysis focuses on 'genuine' descriptions. The label 'genuine' refers to realizations of DESCRIBE that are performed independently of the book by either the students or the teachers. In lesson 1 an instance of a functional description can be found:

> T: Mhm, good. What's the best man's job? Mhm?
> Sm5: Uhm I think he has to sign that he what he was wit-witness?
> T: Yeah, that's a good word
> Sm5: Witness of=
> T: = Mhm=
> Sm5: = the marriage and can prove that they both are marri-married.
> T: That they are married now, ok. Ah does the bride have a similar person standing next to her and, well, witnessing what she's doing or that she's saying yes? Mhm.

Extract 19. DESCRIBE description

In extract 19 the male student describes the function, or in the teacher's words, the job of a best man at a wedding. According to the student, it is the best man's duty, or function, to witness the wedding vows.

Secondly, DESCRIBE also has the function of specifying the meaning of new vocabulary. For this purpose, students complete exercises in the book or on a worksheet that use recently acquired words in example sentences. Another possibility is matching new terms with descriptions, as in extract 20.

> T: Ja. Could be as well, but it isn't. What troubles me most, Sf3.
> Sf3:   Ah what troubles me most is I is I can't let my kids stay on-on at school and a good education is so important nowadays. Ummm lack of quail=
> T: = Correct, ja. Lack of qualifications.

Extract 20. DESCRIBE specifying meaning

This example taken from lesson 7 revolves around issues that are connected with poverty. In this case, the meaning of *lack of qualifications* is specified by an example sentence that a poor parent could have said. The student reads out the description and matches it with the appropriate term. Instances of DESCRIBE that function as specifications are therefore always realized by the initiator 'book' and not independently by a student or teacher.

A third function of the CDF DESCRIBE in this corpus is naming or listing. There are passages in the transcripts that feature speaking activities on topics like problems our planet is facing, benefits of the EU or reasons for poverty. If these tasks resemble a brainstorming and the learners simply mention points without further explanation or justification, they are part of this third naming function of DESCRIBE. Consider the example in extract 21.

> T: Ok. Ja?
> Sm5: You're allowed to study abroad.
> T: Ok. So you can study abroad easily without too many restrictions. What else can you do?
> Sm5: You can work.
> T: Yeah. You can get jobs abroad as long as it-they are within the European Union.
> Sm2: You can pay with the Euro everywhere.

T: Ok, in most countries, the Euro is a big advantage. Definitely, ok.

Extract 21. DESCRIBE naming

This extract is an excerpt of the discussion of advantages of the EU. As can be seen, the students simply share their ideas with the class and the teacher neatly rephrases them into descriptions.

This directly leads to the fourth and last function of DESCRIBE in the data, namely enriching student contributions. This is obviously connected to realizations by the teachers. If a teacher does not add a new point but rather rephrases, expands or completes a learner's contribution or corrects them (without providing a clear explanation), it is a case of DESCRIBE in the sense of enriching.

T: […] Widening the EU – are there limits, it says. Are there limits? Should the EU become larger or not? <un> XXXXXXXXX </un>

Sm5: No.

T: Why not? Why not? Why should it? Is there a discussion about widening the EU?

SmX: Yes.

T: Ja, which countries?

SmX: Turkey.

T: Well, Turkey has been in discussions since the late 1960s. This has been going on forever.

Sm3: *Bosnia, Serbia.*

T: *Ja. At the moment it's Balkan's countries, especially Balkan's countries ah trying to get in, ja. So, Serbia, as you said, ah Kosovo, all those countries will become members as one obviously, ja.*

Extract 22. DESCRIBE enriching

In this speaking activity dealing with subjective statements about the EU – *Widening the EU* in extract 22 – the teacher seizes the suggestion offered by male speaker 3 and expands his exemplary contribution into a more sophisticated description of the accession countries (written in italics).

EVALUATE

Since the communicative intention of EVALUATE – "I tell you what my position is vis a vis X" – is quite straight-forward, there are only two functions of this CDF type in the data. It is used for (1) expressing one's opinion or critiquing and sometimes

EVALUATE also takes the form of (2) contradicting the teacher or a colleague. Both possibilities are presented in the paragraphs below.

As stated above, EVALUATE can be formulated as a personal opinion or a critique. Inter alia, examples from the lessons involve underlining points in a text that seem important to the learners, assessing the importance of dancing in one's life, evaluating statements about the EU or commenting on the views of the author of a text. Extract 23 serves as an example of this usage of EVALUATE.

T:	Even better. Each company of a certain size…
SfX:	Has a=
SmX:	= obligation=
SmX:	= for=
T:	= has to, each company has to employ disabled people as a quota, ja, of how many disabled people they have to employ, ok? Ah so this is why there are many people hired in big companies, ja. *Which is a good thing, ja.*

Extract 23. EVALUATE opinion

In lesson 7, the group discusses reasons for poverty and name bad health or handicaps as one reason. After talking about the Austrian law that forces large companies to hire a certain number of disabled people, the teacher discloses their personal opinion on the issue by stating that this was a good thing.

The second function of EVALUATE in the corpus is contradicting the teacher or classmates. Note, however, that contradicting does not have a negative connotation here. It basically means questioning solutions or pointing to alternative answers. Extract 24 from lesson 1 illustrates this.

T:	Good, Sf6, would you like to start?
Sf6:	When a rel-relationship does not work and you have to finish with someone it can be horrible.
T:	Good, let's go on, Sm5.
Sm5:	Uhm you can see they are a happy couple, they touch and kiss all the time.
T:	Mhm, what else could you write?
Sf6:	Uhm passionate.
T:	Mhm, or?
Sx:	*Uhm by the first sentence, can you also write uhm live with someone?*

T:	\<mumbling\> does not work \<laughs\> Yes. \<laughs\> Yes, that's possible. \<laughs\> Well, there are several options, right, yeah, mhm. So, ah, B was, ah, yeah, the-there is one more possibility, Sf5.

Extract 24. EVALUATE contradicting

The class is comparing a vocabulary exercise and the first sentence that is discussed includes the phrase *to finish with someone*. This suggestion is sanctioned by the teacher and the comparison goes on. The phrase in italics highlights the alternative solution that the unknown speaker suggests some turns later.

EXPLAIN

The decisive feature of EXPLAIN is that it refers to causal relations, because this CDF's communicative intention following Dalton-Puffer's construct is "I give you reasons for and tell you causes of X". The occurrences of EXPLAIN in the corpus take two forms, (1) giving reasons and (2) guidance or correction of students.

Regarding (1), giving reasons, examples in the corpus involve reasoning why a certain answer in a reading comprehension is correct by referring to the sentence in the text that includes the information, expressing the cause of a problem that planet Earth is facing or justifying a personal opinion. The explanation is written in italics.

T:	They melt. Mhm. Mhm. Sf8.
Sf8:	Although there is enough food for the world, ahm people are starving and..
T:	Mhm. Why is that the case?
Sf8:	*Because there're rich countries and there are poor countries and the poor countries ahm ahm the rich countries ahm ahm* \<L1at\> Wos hastn \<un\> XXXXX \</un\> \</L1at\>.
T:	You can paraphrase it, I'm quite sure you can.
Sf8:	Ahm *and the rich countries ahm they take everything from the poor countries*.
T:	Ja. So they exploit them, yes. OR, as you pointed out, some countries have a lot, others have very little. It's \<writes something on the PC 'unfair distribution'?\> Mhm.

Extract 25. EXPLAIN giving reasons

The student in extract 25 gives reasons for the problem she mentions. She states that starvation is one current problem on the planet and points at the unfair distribution of wealth. The teacher finally adds the proper English expression.

As far as (2), guidance and correction of learners, is concerned, EXPLAIN is only realized by teachers. Guidance mainly refers to co-constructed explanations, where the teachers pose clever questions that direct the learners toward a more elaborate explanation. They also expand students' explanations, similar to the enriching function of DESCRIBE mentioned above. As far as corrections are concerned, it seems important to the teachers to provide reasons why an answer or contribution is incorrect. A good example can be found in lesson 1 (respective sentences in italics).

> T: […] Next one, Sm1.
> Sm1: Ah, the report was written by scientists. True, and the answer is 'the report based on scientific data from across the world'.
> T: Why does that support that it is true?
> Sm1: Because scien-scientists say something and it is=
> T: = Where does it say that SCIENTISTS say something? Where does that sent-where is it said? 'Cause I can't infer that from the text.
> Sf2: But if it is scientific it's from science-scientists and scientists have written it?
> T: We're doing a lot of ah speculation here.
> Sx: Ah they just got the information from the scientists and they wrote it themselves.
> T: *Well, they got information from different people, some of them scientists, but it was not really a report written by scientists. It was just a a compilation of different data that they've got. So, it's actually false, but the justification yeah was correct.* Sm2.

Extract 26. EXPLAIN correction

Extract 26 shows an instance, where the justification for a certain answer provided by the male student is incorrect. The teacher then tries to direct him into the right direction, but finally explains why his justification does not apply.

EXPLORE

This CDF does not deal with facts and certainties, but it is performed in order to "tell you something that is potential". Correspondingly, the two forms of EXPLORE that can be found in the corpus are speculations and potentialities.

In regard to speculations, the data includes passages where students are asked to predict what a text is about, to speculate about consequences or to invent stories about people in a picture. Lesson 1 includes such an exploration.

T:	Ok, what does that ah signify, by ah by the way? What's the purpose of walking around the fire? Why do they do it? Sf1? Or what do they do WHILE they are walking?
Sf1:	Ahm they make some promises to each other.
T:	Ok, what do you think what kind of promises will they make to each other? Mhm.
Sf5:	*That they love each other 'til the end.*
T:	<chuckles> Ok, good, what else?
Sm2:	*Happiness and (love).*
T:	Mhm, what else could they promise each other? Mhm.
Sf6:	*To pro-protect each other.*
T:	Mhm, ok. Alright.

Extract 27. EXPLORE speculation

The overall topic in extract 27 is the Hindu wedding, to be more precise, one step in the traditional procedure, i.e. when the couple walks around a fire and makes promises to each other. After this has been clarified, the teacher invites the learners to speculate about the content of these promises. The students' explorations that follow this question are written in italics.

Concerning potentialities, all explorations of this type in the corpus are directly connected to the initiator. This means that they speculate about issues that can be influenced by the initiators themselves. In lesson 3 there is a passage, where the group explores how they could live environmentally conscious.

T:	Mhm. How can one live in a way that does NOT hurt the environment? Can you think of any tips?
Sx:	*If you avoid to use the car and use foot instead.*
T:	You walk? Mhm.
Sx:	*And you take the bus or you <un> XX </un> train.*
T:	Ok, good. Sf12?
Sf12:	<silence>
T:	Ok. <nods, laughs> Good. Ah any other possibilities to be GREEN? Ja?
Sf1:	*Don't use plastic bags.*
T:	Mhm, ok. What should I use instead?
Sf1:	*Ahm <hesitates> biologicaaal=*
T:	= biological bags do not really exist. You are talking of, I guess, paper bags? Something like that? <Sf1 nods, T nods> What else is possible? If I go shopping, usually I know that I'm going shopping <waits for answers>
Sx:	*You can use things who are=*
T:	= that =

Sx: *= recyclable.*
T: Mhm. They can be recycled. Ja?
Sf5:   *You can take a basket.*
T: Take a basket, yes. Or take a bag with you, mhm.

Extract 28. EXPLORE potentiality

As can be seen in extract 28, the discussion revolves around something that is potential but in close connection to the speakers. Potentialities somehow urge the initiators to take other perspectives on themselves, which is why they are to be distinguished from general speculations about any topic.

REPORT

Finally, the last CDF is characterized by the communicative intention "I tell you about something external to our immediate context on which I have a legitimate knowledge claim". Since basically every topic apart from linguistics is external to a language classroom, the combining element of REPORT is the 'legitimate knowledge claim'. In this study, REPORT verbalizes personal experiences, it informs or presents and it summarizes. In all three cases the initiators have acquired some sort of knowledge that entitles them to perform this CDF, be it an individual experience, a proper preparation or the attendance in a lesson, for example.

Referring to the first form that REPORT takes, giving an account of personal experiences, examples in the corpus include the narration of personal stories. These cases of REPORT are about recounting past events, as in extract 29.

Sf3:   And as a child I had two dance lessons per week.
T: Really?
Sf3:   Actually, it was not really dancing but rather <3> gymnastics </3> with some dancing moments?
T: <3> Mhm. </3> Moves, probably?
Sf3:   No, not moves. Ahm, …
T: Try to explain it.
Sf3:   I don't know <pauses> Uh <hesitates> Um, our teacher plays some music with the radio and sometimes we danced to it.
T: Aha, ok.

Extract 29. REPORT personal experience

During the discussion of the importance of dancing in her life, female speaker 3 recounts what her dance lessons looked like in the past. By doing so she gives an insight into her personal experience.

As regards giving or presenting information, REPORT revolves around hard facts, in contrast to personal stories. Examples are informing the plenum about the starvation problem in Africa, the ethnic minority of the Roma and Sinti or informing the group about the attitudes of other speakers. Extract 30 shows how such a report might be realized.

> T: Yeah, he doesn't understand why Turkey should NOT join the EU. Ah, next one, the French, D?
> SfX: *Uhm he has benefited from EU projects.*
> T: Ok, soo, he HAS benefited from EU projects.

Extract 30. REPORT information

In extract 30 the group is matching each speaker of the listening and their opinion on the EU. In other words, the learners use the information they got in the listening and through the matching exercise. Then, they inform each other about the attitudes of the speakers. Instead of only reading out the sentence from the book (*I have benefited from EU projects.*) the student in extract 30 turns it into reported speech. Therefore, it is no longer an evaluation by the initiator 'book', but a student REPORT.

The third subcategory of REPORT in the corpus is summaries. Summaries deal with previous lessons and the main points of the listening in lesson 8. The extract below shows an example of the latter.

> T: Ok, need it again? No. Once will do. Good. So, what are the six reasons? Number one, Sm1?
> Sm1: Ahm the single parents.
> T: Ja, <25> being a single parent. </25>
> Sm1: <25> Or the si- </25> the single mothers. Half of them are under poverty.
> T: Mhm.
> Sm1: Because they work part time.
> T: Mhm.
> Sm1: So they can't yeah they don't get enough no money to=
> Sf2: = Ah they have no one to look after their children.

Extract 31. REPORT summary

After the listening comprehension is finished, the plenum summarizes the main points raised in it. Extract 31 revolves around the first reason of poverty mentioned in the listening comprehension, i.e. being a single parent.

The qualitative analysis of the CDFs realized in the data shows that each of the seven types can be divided into at least two sub functions. These sub functions often correspond to other functions verbs within the CDF type, as suggested by Dalton-Puffer (cf. table 3 'Members of the CDF types', page 27). Precisely speaking, these are: specifying in DESCRIBE, critiquing in EVALUATE, reasoning in EXPLAIN, speculating in EXPLORE and recounting, informing and summarizing in REPORT. The following section deals with lexico-grammatical aspects of the CDF realizations.

6.4.2 Lexico-grammatical aspects

As mentioned in section 3.1, the theoretical examination of the CDF construct and discourse functions in general had to focus on one end of the binary opposition between everyday and academic language. Therefore, the first part of this thesis presented prototypical academic language. What needs to be considered is that studies which resulted in the presentation of best-practice examples of specific CDF realizations are often based on written language production. Naturally, spoken communication is less formal than written. Therefore, it is not surprising that the empirical research has found that the academic setting 'school' does not necessarily require the production of out-of-the-textbook academic language. In other words, the binary opposition has become obsolete and, instead, a language continuum is opted for. The following sections present the language found in the corpus.

CLASSIFY

Recapitulating what the theory suggests in chapter 4.1, CLASSIFY should appear in two forms (cf. Widdowson 1979, Trimble 1985). Classification type I develops from the specific to the general, typically realized by statements like "X is a member of Y" or "X is placed in the class Y". In contrast, classifications of type II start with the general and move toward the specific, e.g. by saying "Y comprises X". A qualitative analysis of the classifications found in the data, however, shows that there are many

more linguistic options. Moreover, there are only two cases where a realization was found that followed the suggestions by linguists. Both are realized by the same speaker, Sm3:

> T: Good, Sm3, let's start with the first word and tell us where it belongs and what the person does or what the item is used for.
> Sm3: *The priest belongs to the Hindu wedding.*
> T: Mhm.

Extract 32. Academic CLASSIFY

Extract 32 is taken from lesson 2 and the task is completing a table that asks the learners to decide whether a certain item is connected to a Hindu or an Islamic wedding. Male speaker 3 produces a prototypical classification (written in Italics). Note that he might have been influenced by the teacher's question which includes the phrase *to belong to* already. Other options that were found in the corpus are summarized in the table below.

schema	examples
X is (in/at/for) Y	Turmeric is uhm the Hindu wedding. Yoghurt and honey is in the Hindu wedding. Mm, krm, ah walima is for the Islamic wedding.
X (pause) Y	Flowers \<hesitates\> Hindu. T: And wool? SfX: Primary.
X goes to Y	Clothes goes to secondary sector Uhm banking goes where?
X (pause) Y or Z?	Administrative work? Wholesaler or retailer?
this/that's Y	T: Buying goods in \<6\> smaller units \</6\> and selling them to the final customer? That's the? Sf1: \<6\> Retailer. \</6\>
Y (pause) X	T: Who does not use the Euro? Sm2: Ah, England. T: Yeah, Great Britain. Sm2: Croatia \<5\> \<L1at\> und Schweiz. \</L1at\> \</5\> SmX: \<5\> Sweden. \</5\> T: Croatia, not yet. Sweden. Sm4: Hungary. T: Hungary. SmX: Poland.

Table 12. Lexico-grammar CLASSIFY

As can be seen from the table, neither students nor teachers stick to the suggested best-practice examples. What is more, there is a number of occurrences of CLASSIFY that differ from the typical first function of classifying and engage in comparisons instead. In these cases, the CDF type is realized by even more complex linguistic means. The initiators use connectives, cohesive devices and adverbs of place to compare or contrast their statements with previous ones[11]. However, the register the speakers use is partly quite informal, as can be seen below:

1) (like) the thing with…
2) And there's…
3) Yes that's also so, but…
4) We also have this…
5) By us…
6) Do they also…?
7) It's not so typical here, I guess.

N.B. Option number seven is performed by a teacher.

DEFINE

Chapter 4.2 describes definitions in theory and concludes that they consist of three essential parts: the object/creature/abstract concept that needs to be defined (definiendum), a class that it belongs to (definiens) and characteristics that make it unique (differentia) (cf. Snow 1978: 10; Dalton-Puffer 2007a: 203; Dalton-Puffer, forthcoming). In this sense, definitions should be realized by a copula construction and, e.g. a relative clause, as in "X is a Y that is/has/does". Qualitative research on DEFINE in the corpus shows that a variety of formulations is used in the classrooms. Nevertheless, the number of complete definitions is surprisingly high. Including the initiator 'book', 27 out of a total of 58 definitions are complete. Considering only 'genuine' definitions produced by students or teachers, the quantitative result is 16

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[11] N.B. Even though the wording is partly strange or incorrect, the phrases still introduce comparisons.

complete definitions out of 35. In both cases, nearly half of the realizations adhere to the theoretical guidelines. Note, however, that only eight occurrences of DEFINE are performed by just one speaker. The other half is jointly constructed by students and teachers. In other words, 16 out of 35 definitions are performed by human beings, eight of them in a collaborative manner. Examples of both, co-constructed and individual definitions are provided in extracts 33 and 34.

> T: = must be primary then, ja. Ok. Ah if you go on now, you have this difference now
>   between wholesaler and retailer, ja. What's a wholesaler?
> SfX: Someone who produces goods and then=
> T: = No, a wholesaler doesn't produce. He?
> Sm1:   <L1at> Großhändler. </L1at>
> T: Ja. So he sells goods to?
> Sm1:   To companies.
> T: Ja. Companies. To retailers, in the end, ja.

Extract 33. DEFINE complete (co-constructed)

> T: What's the Europass? You have used it already. It's a big disappointment for <un> XX
>   </un> you don't know the Europass. (4) No, never heard the word? You remember,
>   ah, CVs? Your CV? <un > XXXXXXXXX </un> That's what we downloaded. We just
>   filled in. That's the Europass. Nothing else, *it's a standard form for CVs*, ja? <L1at>
>   Lebenslauf. </L1at> We did it, a year ago, or two even, ja? Ok. That's the Europass.

Extract 34. DEFINE complete (1 speaker)

In regard to extract 33, the co-constructed definition, the final definition that the group has found is *A wholesaler is someone who sells goods to companies and retailers*. It consists of the copula constructs *wholesaler is someone* and the characteristics *who sells goods to companies and retailers*. Even though the superordinate *someone* is rather weak, the definition is still complete in linguistic terms. Unfortunately, the result of the joint definition process is not repeated or summarized, so that the participants are most likely not aware of the final definition.

Concerning extract 34, the definition of the Europass provided by the teacher is written in italics: *The Europass is a standard form for CVs*. The copula *Europass is a standard form* is followed by the characteristics *for CVs*. Similar to the co-constructed definition, this occurrence is not emphasized again, either.

As far as alternative realizations of DEFINE are concerned, they are often incomplete versions of the prototype suggested in the literature. On the one hand, they sometimes lack characteristics, for example when asked to define '*walima*' a student in lesson 2 just says that it was "the party". On the other hand, they are incomplete due to the absence of a copula construction. For instance, a definition of *secondary sector* from lesson 6 is "Ahm mm ahm it's uhm where products are made?". Moreover, as already mentioned above, the superordinates are sometimes rather vague, including examples like *someone*, *something*, *anything* and *people*.

In addition to the incomplete versions of definitions, there are some other strategies that the participants of this study employ in connection with DEFINE. Table 13 below provides a summary.

strategy	example
give (functional) description instead of definition	T: What is logistics? SmX: \<L1at\> Logistik. SmX: Transport. \</L1at\> T: What do they do? Transport and? SfX: Stores= T: = Not only transport, also storage of goods, ja. Transport and storage in simple words, ok.
use word in context	Sf1: Shortage means= T: = Shortage of money, ah \<L1at\> Mangel. Sf1: Oiso afoch Geldmangel. \</L1at\> T: Little money. Sf1: Ja.
translate word	see examples above!
mention examples of class	T: And the tertiary sector finally, Sm2. Sm2: Ahm the sellers. Sellers? [sailor] T: Sailors? \<class laughs\> Depends on what they offer. No, ah, the \<breaks off\> SmX: Trade? T: Ja. Ah Sm2, you mean sales, maybe. Sm2: Sales. T: Ja. Sales? Ja, ah, ja. Service, ah things like that.
give example of opposite	T: [...] What is decent? [...] T: I could call you words. That is not decent.

Table 13. DEFINE alternative realizations

A final word on DEFINE, wording seems to be an issue worth investigating. A thorough examination is beyond the scope of this thesis, but three coincidental observations have been made during the qualitative analysis. First of all, in lesson 2, the teacher asks the learners to define a *guard of honor*. What the student actually performs is a description and the teacher thanks him for his "explanation". Second, although the teacher had told the students before that they must not use the same word to describe the word, the differentia of his or her definition of *developing countries* include *not developed yet*. Third, the instructions on a worksheet tell the learners to complete definitions with newly acquired vocabulary. However, the sentences in this task are not definitions but descriptions of the following kind: *If a girl, for example, in a relationship has another partner, she is cheating on him or her*. The aspect of word choice seems to be a promising area of research for the future.

DESCRIBE

According to linguists, there are four different types of DESCRIBE, namely physical, structural, functional and process descriptions (cf. chapter 4.3). As presented in the previous chapter, the qualitative analysis of the DESCRIBE codes has shown, however, that they additionally serve different purposes in this corpus. The linguistic aspects of all kinds of DESCRIBE are reviewed below.

First of all, there are no structural descriptions, because they were coded separately as CLASSIFY. Apart from that, classifications in the data do not follow the theoretical suggestions and are realized quite differently from the prototypical "*whole* consists of *parts*" or "*parts* make up *whole*" schemata. A thorough discussion of lexico-grammatical aspects in connection with CLASSIFY is provided above.

Secondly, as presented in section 6.4.1, DESCRIBE also serves to specify the meaning of new vocabulary and to listing or naming things. Concerning the former, no concrete lexico-grammatical tendencies are found in the data. Only the semantic fields build a loose connection between the individual instances. Semantic fields in connection with specify the meaning of new vocabulary include relationships, marriage/wedding, environment, troubles, business and poverty. In terms of

grammar, specifications of new words are performed as declaratives and questions, as in extracts 35 and 36 below.

> T: [...] Cindy, Sf4.
> Sf4:   Cindy's parents got a divorce and then married other people.
> T: Mhm. Sf6.

Extract 35. DESCRIBE declarative

> T: Mhm, instead of the I, ok. So, relationship words. Sf5.
> Sf5:   Khrm.. ahm.. Are Steve and Eddie an item? Ah yes, they got together at the school party.
> T: Exactly, good. Sm2 you-your turn.

Extract 36. DESCRIBE question

Thirdly, there are of course descriptions that adhere to the theoretical guidelines. To be more precise, examples for both physical and functional, as well as process descriptions appear in the corpus. To start with, physical descriptions revolve around "material and outward characteristics" (Dalton-Puffer, forthcoming). In other words, they are concerned with physical features. Extract 37 illustrates what a physical description in the corpus looks like.

> T: = Are there many flowers?
> Sm1:   <L1at> Ja, Deko.</L1at> Decoration.
> T: Just as decoration.
> Sm1:   There're there so (fake) flowers and there are the names from ahm and under the flowers are the names from ah the families ah like my-my father's and mother's name and the name from my uncle.
> T: Mhm.
> Sm1:   with his wife it's also on=

Extract 37. DESCRIBE physical

In this instance taken from lesson 2, the male student briefly describes what the decoration of an Islamic wedding includes.

Moreover, functional descriptions are also frequent in the corpus. Theoretically, they should be realized by phrases like "*part* serves to/controls/regulates/is responsible for *function*" or "the function of *part* is to *function*" (cf. figure 7 and 8 in chapter 4.3). These exact wordings are not found in the data, but the teachers use surprisingly

similar phrases to introduce functional descriptions. Unfortunately, the learners do not follow the teacher modeling. Table 14 shows how the students avoid the prototypical academic formulations (respective sentences in italics):

teacher question	student response	example
What is X's job?	infinitive phrase "to have to"	T: […] Let's start with, well, the bride. What's her job? Sm3? Sm3: *To dress beautifully*. T: Ok. \<smiles\> Sm3: Ahm *to get married*. T: Ok. \<giggles\> Alright, mhm? Sm5: *To say yes in the right moment*. T: \<S laugh\> Yes, ok. Sm1: When there is no wedding planner, he has to= T: = \<9\> She, she. \</9\> Sm1: \<9\> plan this \</9\> She *has to plan* this whole party with her friends and family. T: Mhm, ok, quite a lot of ah work to do, mhm.
What does X signify? What is the purpose of X?	gerund "to symbolize that"	T: Mhm, what does that signify, Sm4? What's the purpose of pouring out water? Sm4: Ah, I don't know, *blessing them*? T: Mhm, well, ah, this might be part of it but actually the idea is= Sf6: = ah the fa- father wants *to symbolize that* he is giving away his \<13\> da-daughter \</13\> T: \<13\> Mhm. \</13\>
X is used in order to do what?	"to symbolize that"	T: Whereas the red powder is used at rather at the end of the ceremony in order to do what? SmX: Ah I don't really know, but I guess. T: Where do you put it you said? SmX: On the heads. T: Mhm, do you remember wha-what it means? Sm3: It should symbolize that she is ahm \<L1at\> verheiratet \</L1at\>. That she is she has \<L1at\> wos hast \</L1at\> She is \<L1at\> verheiratet? \</L1at\> T: You know that, you know that. Sm3: She's married. T: She's married, exactly. \<class laughs\>
What does X do?	"to be a gesture"	T: = Yes. Who needs honey and yoghurt? Sm1: The-the bride.

Why (is X done)?		T: Mhm, what does she do with it?
		Sm1: Uhm.
		T: Sm2.
		Sm2: She gives it to the groom.
		T: Mhm. Why?
		Sm2: It's somehow a gesture, a nice gesture.
		T: A gesture of, yes, ok, of kindness. What else does it, is it?
	"to be a symbol of"	Sm2: Uhm, it-is it-is it a symbol of kindness [kind] or something?
		T: Mhm, of kindliness, of purity, exactly, mhm.
What is X used for?	relative clause	T: Good, Sm3, let's start with the first word and tell us where it belongs and what the person does or what the item is used for.
		Sm3: The priest belongs to the Hindu wedding.
		T: Mhm.
		Sm3: And actually *he's the one who* mmm ma-marries them=
		T: = no. Who performs the ceremony, mhm. Ok

Table 14. DESCRIBE functional

In sum, there are a number of strategies how to verbalize a functional description, namely by infinitive phrases, gerund, relative clauses or the fixed verb phrases *to symbolize that*, *to be a symbol/gesture of* and *to have to*.

Finally, process descriptions should feature cohesive devices like *First, second, third...* or *At first, then, finally...* The data confirms this grammatical characteristic. What needs to be pointed out is that the majority of process descriptions are not carried out by only one speaker. Therefore, it is often the teacher who asks things like *And then?* or *What happens next?* in order to keep the speaking activity going. There is, however, an example of a complete process description produced by only one learner. Consider her use of cohesive devices in extract 38 (in italics).

Sf2: I can tell what's in ah what's it like in Romania.
T: Ok.
Sf2: Ahm the people ahm don't met=
T: = don't meet.
Sf2: Don't meet at one place everyone.
T: <10> Mhm. </10>

Sf2:   <10> The </10> krm the people met but not the best man and the bridesmaid [man] and not the bride and the bridegroom and the parents of them.

T: Mhm.

Sf2:   All the other people meet and *then* they go from house to house and ähm *at first* at the best man and the bridesmaid [man] ahm <hesitates>

T: Bridesmaid.

Sf2:   Bridesmaid and take them from their places.

T: Mhm.

Sf2:   And sometimes they go in a house and eat or drink something and so on. *And then* they go-they take each other from their place at home and *then* ahm they go to the to the bridegroom and take him from his home=

T: = pick him up, yes.

Sf2:   Pick him up and äh *at the end* they go to the bride and the bridegroom must do something that the bride comes out from her house.

Extract 38. DESCRIBE process

EVALUATE

Researchers have agreed on the fact that, even though giving opinions is by definition subjective, EVALUATE needs to be based on a framework of reference (cf. Vollmer 2011:9; Dalton-Puffer, forthcoming). In Dalton-Puffer's (forthcoming) words, this can be either a quantitative or a qualitative value, i.e. numerical reasons and moral judgments. This observation is also true for the evaluations in this corpus. Every instance of EVALUATE is accompanied by some sort of reasoning. Extract 39 serves as an example of a qualitative value, in other words, a moral judgment.

Sm3:   Ahm so basically they're offering their free time, th-the worker there who are serving the food to-to better the life of people who had ah bad luck or no chances in life to begin with. Yeah many of ah those organizations also offer a place to stay or-or maybe to socialize a bit <22> with other homeless people,= </22>

T: <22> Mhm, mhm. </22>

Sm3:   = *which is a good thing, because ahm the poverty often ähm cuts social ties and ähm that's also a-a reason for depression or <23> other stuff that's </23>*

T: <23> Ok, stop, stop, stop, stop, stop, stop. </23>

Extract 39. EVALUATE qualitative value

The student describes a picture that shows a soup kitchen and argues that these organizations are "a good thing" due to their positive impact on homeless people's social ties.

Extract 40 provides a quantitative value, i.e. a numerical reason.

> T: Ok, Sf12, what ah worries you most?
> Sf12: Ahm the fact that the population of tigers has fallen by 95 percent.
> T: Mhm=
> Sf12: = because I think that's a shocking high number.
> T: Shockingly high, I agree with you.

Extract 40. EVALUATE quantitative value

In this task the student is asked to speak her mind on problems the planet is currently facing that were described in an article. In her view, the considerable decrease in the tiger population is most worrying and she provides a number to back up the significance of this issue.

In terms of lexico-grammar, EVALUATE is almost exclusively introduced by the students by the phrase *I think*. This is the most popular indicator of subjectivity, both in the lower and the higher grades. There are only four other ways of telling someone what their position is:

1) I would (love to)…
2) …. , which is a good thing.
3) I think we ARE involved. (stress on auxiliary verb)
4) This is a problematic thing.

As far as the teachers are concerned, there is much more variety. Despite the low overall number of eight teacher evaluations, there are five different introductions to this CDF type:

1) I guess I would…
2) I could / would…
3) It's a big disappointment that…
4) The real fact is very simple…
5) …, which is a good thing.

Finally, there are also prototypical evaluations that appeared in a listening. Apart from some occurrences of *I think*, these instances of EVALUATE are realized in the following ways:

1) I'm not so sure.
2) I like the idea of...
3) I just can't understand...
4) I'm very much in favor of...
5) People should stop moaning about...
6) What gets me is...
7) That's my main argument against...
8) As far as I can see...

EXPLAIN

According to Dalton-Puffer (2007b: 149-150), teachers often interrupt classroom explanations with comprehension checks and they are (almost) always included in co-constructed explanations. Moreover, she found that learners are typically monosyllabic, which urges the teachers to formulate more sophisticated explanations out of the students' fragmented ones. As announced in chapter 4.5, this study was hoped to provide more information on this issue.

The results for EXPLAIN show that there are 26 student explanations, eleven of which are rather monosyllabic. Moreover, while there are 15 co-constructed examples of EXPLAIN, only eleven are realized by one learner. Furthermore, 19 of these 26 occurrences are either interrupted by or co-constructed with the teacher. In a nutshell, Dalton-Puffer's findings were confirmed by this empirical research. The teacher do interrupt and take part in explanations.

In regard to lexico-grammar, an apparent aspect is the question of which connective is used. Not surprisingly, the subordinating, causal *because* is the only existing

option in the corpus, also in teacher explanations.[12] Due to the monosyllabic nature of student explanations, the lack of any connective is also quite frequent. The monosyllabic and co-constructed explanation in the extract below is interrupted by the teacher and shows the use of *because* and the absence of it.

T: <10> Why would the companies sell things there? </10>
SmX: Because…
SfX: Because they <un> XXX </un>
SmX: (These are old products.)
SmX: <L1at> <un> XX </un> -ware. </L1at>
T: Ja.
SmX: Clothes of the old season.
T: Ja, it's like former seasons, out of fashion, little little problems sometimes in it, ah <un> XXXXX </un>.
SmX: <L1at> B-Ware. </L1at>
T: Ah, ja. <L1at> Oiso </L1at> Second-second choice. But it's, who profits from this?
SmX: Consumer.
T: And producer as well, because he gets rid of things he normally wouldn't get rid of, ja. He doesn't need to transport things anywhere because you go there yourself to buy it, ja. So this is some kind of new form. You don't need a retailer, ja? Ok. Amazon, online services, same thing. You don't really need a retailer in between, ja, ok? You buy directly more or less. Ok, good.

Extract 41. EXPLAIN monosyllabic, co-constructed, interrupted by the teacher

In extract 41, the teacher asks the group why a company would sell their products at a factory outlet. The students then collaboratively create a list of reasons. In contrast to this, the teacher's explanation of why factory outlets are beneficial for companies is a coherent stretch of discourse.

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[12] There is one passage, were teacher B says "So all these things are used fo-for keeping for the Turks out of the EU." It could be argued that *so* in this case summarizes the previous explanation and, therefore, should be named as a connective used with EXPLAIN. However, the explanation was complete even before this statement, which is why it is not considered in more detail here.

EXPLORE

Previous research on EXPLORE has shown that this CDF is probably the most difficult one, due to the complex lexico-grammar that is needed for its realization. Inter alia, it includes modal verbs (*may, will, can*), modal adverbs (*maybe, perhaps, probably, possibly*) and conditionals (*if*). Dalton-Puffer (2007a,b, forthcoming) identified a number of verbs and phrases that introduce explorations. To give a few examples, frequent expressions in connection with EXPLORE are *assume, guess, imagine*, *let's say, what happens if* and *can you predict* (cf. tables 14 and 15 in chapter 4.6).

Interestingly, none of these expressions are used in the corpus. Since there is only one occurrence of a teacher exploration, which is co-constructed, their contribution to this CDF is limited to asking questions and thereby introducing this CDF type or inviting learners to engage in explorations. Their questions are formulated in the following ways:

1) Where might it be from?
2) What will they make?
3) Where would you…?
4) How can one live…?
5) Can you think of…?

As can be seen, the questions do not correspond to the examples named by Dalton-Puffer, but they include modal verbs. What is more, they are open questions, which allows for speculation on the learner's side.

The learners do not use any of the words found in Dalton-Puffer's corpus, either. Nevertheless, there are quite a number of student contributions that include complex grammar. *Maybe* and *might* each appear once, as do *I would say* and

judging from. Furthermore, if-sentences of the types zero, one and two are used.[13] Finally, *I personally can't* is also applied when answering a teacher question. [14]

Naturally, there are also many occurrences that are not introduced at all or that are verbalized in a completely different way. Half of EXPLORE is realized like this. What the learners do, for example, is simply employing ellipsis. Consider extract 42 (respective passages in italics).

> T: Mhm. *Where would you put a wind turbine?*
> Sf10: *In a area where it is very windy.*
> T: Mhm. Which areas can you think of?
> Sf10: Loosdorf.

Extract 42. EXPLORE completing teacher's question

Instead of issuing a complete exploration, the female speaker continues from the end of the teacher question and adds her idea.

A second possibility used by the learners is to formulate imperatives in response to a question, as in extract 43.

> T: Ok. <nods, laughs> Good. Ah any other possibilities to be GREEN? Ja?
> Sf1:   *Don't use plastic bags*.
> T: Mhm, ok. What should I use instead?
> Sf1:   Ahm <hesitates> biologicaaal=
> T: = biological bags do not really exist. You are talking of, I guess, paper bags?
>   Something like that? <Sf1 nods, T nods>

Extract 43. EXPLORE imperative

The third strategy used by the students is the use of an infinitive phrase:

> T: Mhm, what can you personally DO in order to improve the situation?
> Sf1:   Ahm *to buy ahm food ahm in local stores and from the season* <12> and </12> ahm
>   to=
> T: <12> Mhm. </12> = so, regional products from local stores, ja.

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[13] In one case, the learner uses 'when' instead of the grammatically correct 'if'.
[14] All in all there are 14 occurrences of EXPLORE realized by students.

Sf1:   Yeah and ahm ahm yes, fair trade products, ja.

Extract 44. EXPLORE infinitive phrase

The last way of engaging in explorations found in the corpus is repeating the formulation that the teachers used in their question:

T: = biological bags do not really exist. You are talking of, I guess, paper bags? Something like that? <Sf1 nods, T nods> What else is possible? If I go shopping, usually I know that I'm going shopping <waits for answers>

Sx: *You can use things who are=*

T: = that =

Sx: = recyclable.

T: Mhm. They can be recycled. Ja?

Sf5:   *You can take a basket*.

T: Take a basket, yes. Or take a bag with you, mhm

Extract 45. EXPLORE copying teacher's wording

The speakers in extract 45 answer to the question that the teacher had posed previously, namely *How can one live…?*

REPORT

In connection with REPORT, Hyland (2004: 27) presents three groups of verbs that are common in the realization of this CDF. They are verbs that describe (1) research acts (e.g. experiments), (2) cognition acts (e.g. mental processes) and (3) discourse acts (e.g. verbal expressions). Unfortunately, there are no instances of reporting on cognition acts in the corpus.

Concerning research acts, there is one occurrence of a report in the data. It is realized by 'book' because it is a listening comprehension of the topic *Poverty in the UK* and it presents findings of a nationwide study. In this sense, this example in the corpus belongs to Hyland's first group, i.e. reports on research acts. Although Hyland's prototypical 'discover' does not appear in the listening text, there are other similar verbs: *show, confirm* and *find*. Furthermore, there is the phrase *the overall conclusion, therefore, must be that*. The students also participate in reporting research acts, namely when they name the six main reasons of poverty mentioned in the listening comprehension. However, they do not use verbs to introduce their

reports but simply name the reason without referring to the source of these pieces of information.

While summarizing a reading comprehension, the students engage in reporting discourse acts, Hyland's third group.. Other tasks that belong to the same category are recapitulating previous lessons and summing up the view of speakers in a listening. Similar to group one, Hyland's 'state' does appear in the data. Verbs that are used in those activities are: *think, say, dismiss (the idea), argue, mention, believe* and *talk about.*

Since one of REPORT's functions in the corpus is retelling personal experiences and reviewing everyday life events, these occurrences do not fit in either of the categories established by Hyland. What they have in common in terms of lexico-grammar is that the past is the prevalent tense. At one point, teacher B talks about not having read a certain book, using the present perfect tense, of course. Yet basically, recounts are pasts events and, therefore, also in past tense.

Analyzing the data in terms of lexico-grammar has shown that the language used to perform CDFs in real classrooms is different from the prototypical academic language suggested by linguists. In the majority of cases, the initiators in this study have found various other ways to realize the CDF types. These findings support the idea of a language continuum and in turn dismiss the construct of a binary opposition of everyday vs. academic language.

6.4.3   Co-occurrences of CDF types

As already pointed out in chapter 6.1, Kröss' (2014) study on CLIL Physics lessons distinguishes between CDFs and moves. The former refers to the overall communicative intention of a certain stretch of discourse. The latter means all occurrences of CDF types that are used within or for the realization of a CDF. In this study, this distinction is absent and the occurrences of CDFs correspond to Krössian moves. What is similar, however, is that certain CDF types are likely to co-occur. This chapter investigates this issue.

First of all, CLASSIFY is regularly accompanied by DESCRIBE or DEFINE. This is due to the design of the exercise. For example, in lesson 2, the learners allocate items and people to a certain type of wedding and, in addition, they provide functional descriptions or definitions of the respective item or person. Extract 46 illustrates this:

```
T:      Mhm. Ja. Sf4.
Sf4:    Ähm mosQUE-
T:       - mosque.                                                    CL-S
Sf4:    Äh Islamic wedding. Ähm it's the place where they get married.    DF-S
T:      Mhm, ok. Say it again, please, it's mosque.
```

Extract 46. Co-occurrence of CLASSIFY and DEFINE

After determining that a 'mosque' is part of an Islamic wedding, the female speaker provides a short definition of what it actually is. Another CDF used in combination with CLASSIFY is EXPLAIN. This happens when the teacher corrects a wrong classification and gives an explanation of why the student's response was incorrect.

Secondly, REPORT is frequently found in connection with EXPLAIN, EVALUATE or EXPLORE. An example of this phenomenon is presentations on personal experiences that also include explanations for decisions, the student's opinion on certain types of dances or speculations about the future. Another possibility is the summary of a text that is also critiqued. A third way is to present an author's view and to give reasons for the correctness of the contribution by naming the respective line in the text that provides the information. Extract 47 shows the last possibility:

```
       T:      Mhm. Alright. Ok. Anything we haven't mentioned yet? Ja. <gives speaking right to
               Sf5>
       Sf5:    That he is extremely old-fashioned and <un> XX </un> people to believe that
               flashmobs are something to be (avoided).
REP-S  T:      Ok. <smiles> Good. Where does it say so, Sf4?
       Sf4:    Ähm. In the third .. third paragraph.
       T:      Mhm. Which line?                                    EA-S
       Sf4:    In the third line.
       T:      Mhm. Exactly. The writer's position is not only extremely old-fashioned – Alright.
```

Extract 47. Co-occurrence of REPORT and EXPLAIN

Thirdly, there are four instances of DESCRIBE that correlate with EXPLORE. These are the four picture descriptions in lesson 8. While describing the pictures, the learners also speculate about the background, name, fate etc. of the people in the photographs. Three of the four DESCRIBE passages also include EVALUATE, as in the extract below:

EO-S { Sf1: Ahm second picture you can see an old woman sitting on the floor. Ahm and it could be in front of a university or in a shopping area.

T: Mhm.

Sf1: Ahm the woman ahm is begging ah try- ah is begging ah and tries to get money.

EV-S { From-from people ahm. And I think ahm it's not good to-to give them money because in some cases there is ah kind of begging mafia?

T: Mhm.

Sf1: In the background and you can ahm finance also ahm addiction like drugs or drinking when you give them money. Ahm in areas like the metro or a in bus stations like in Salzburg or Vienna it's forbidden to beg. Ahm because also of the mafia. Ahm and I

EV-S { think it's better to give the money ahm of-official organization, NGOs, ahm like the Caritas, Volkski-ah Volkshilfe and in Vienna in the Gruft.

T: Mhm.

EO-S { Sf1: Ahm in most cases there is ahm a bad fate ahm for the people. Ahm that they have to-to beg. Ahm there's the last ahm exit for them to ahm to get money from people.

T: Mhm.

Sf1: Ahm but, yeah.

Extract 48. Co-occurrence of DESCRIBE and EXPLORE and EVALUATE

Finally, there are co-occurrences within the CDF DEFINE. Sometimes it happens that a teacher's definition is enriched by a translation.[15] Consider extract 49:

T: Single market saving companies millions, statistics say. What's the single market?

SmX: <L1at> Einzelhandel. </L1at>

T: Mh?

SmX: <L1at> Einzelhandel. </L1at>

T: No.

SmX: Ok.

15 At this point, a brief excursus on translations is necessary. They do not only occur as follow-ups, as can be seen in extract 48, but they are also performed in isolation. In other words, translations can be found instead of definitions or descriptions, too. Unfortunately, it is beyond the scope of this thesis to investigate the issue of translations in more detail.

> T: *It's the British word for EU. Single market, <L1at> der einheitliche Markt. </L1at>*
> SmX: Aha.
> T: *Ja? It's the old word fo-for EU, ja?*

Extract 49. Co-occurrence of DEFINE and DEFINE-German

As can be seen, the teacher first provides an English definition of *single market* and then adds the translation (in italics).

What is more, different types of CDFs frequently co-occur with translations or meta-talk about pronunciation, vocabulary and grammar. Since these examples do not constitute CDF types, they are not discussed in more detail here.

Summing up, there are three CDF types in the corpus that show tendencies to co-occur with other CDFs. First of all, CLASSIFY is closely connected with DESCRIBE and DEFINE, REPORT appears with EVALUATE, EXPLAIN and EXPLORE and, finally, DESCRIBE is sometimes linked with EXPLORE and EVALUATE. Moreover, translations and meta-talk frequently appear within all types of CDFs. The next chapter presents the findings on the last research question.

6.5   Meta-talk

The final sub research question deals with the explicit teaching of CDFs. Precisely speaking, the last step in the analysis was to find out, if the teachers mention CDFs, raise their students' awareness in this respect or even consciously teach them. In other words, is there meta-talk about CDFs? Unfortunately, neither of the aforementioned cases is present in the data. None of the two teachers ever talks about linguistic aspects of any CDF or, for instance, tells their students how a classification should be verbalized linguistically. As a consequence, awareness raising or explicit teaching does not take place, either.

There is one instance, however, that deals with definitions on the meta level of content. In this respect, it could be said that there is at least one example of meta-talk in connection with CDFs.

Sx:	Ah, developed countries are countries where the- where the, ah, where the, where the environment <L1at> oiso </L1at> where, ah, where they are, ah, <L1at> entwickelt, Frau Professor, wos hastn entwickelt </L1at>.
T:	Ja, developed.
Sx:	Ah, ah, high developed.
T:	Well, you can't really explain the word by using the word. This, ah, will lead you into trouble.

Extract 50. Meta-talk

In extract 50 taken from lesson 3, the student defines *developed countries* by saying that the *environment is high developed*. The teacher then draws their attention to the fact that the definition of a word must not contain the word itself. Even though this instance of meta-talk is not very sophisticated and does not revolve around a lexico-grammatical aspect, it could be argued that it constitutes meta-talk nonetheless.

What the teachers *do* at some points is unintentional modeling. To give just one example, in lesson 2 the teacher provides the students with the perfectly academic wording that the theory suggests for CLASSIFY:

T:	Good, Sm3, let's start with the first word and tell us *where it belongs* and what the person does or what the item is used for.
Sm3:	The priest belongs to the Hindu wedding.
T:	Mhm.

Extract 51. Unintentional meta-talk

The teacher's question in extract 51 (in italics) contains a best-practice phrase for a classification. As can be seen, the student picks it up and produces one of the only two textbook classifications in the corpus.

Additionally, there were some instances of a different kind of meta-talkn namely not meta-talk about CDFs but meta-talk about linguistic aspects, i.e. language issues. Apart from the complaint phase in lesson 6 (cf. chapter 5.7), these instances revolved around pronunciation, grammar and lexis. Table 15 is a list of occurrences of meta-talk in the respective schools.

code	AHS	BHS
meta-complaints		1
meta-pronunc	4	3
meta-gr	11	2
meta-voc	10	6
TOTAL	**25**	**12**

Table 15. Meta-talk

Meta-talk was not considered in the CDF analysis because it mostly only took the form of teacher repetitions of incorrect student formulations. The analysis of the lesson transcripts shows that there is notably more meta-talk in a linguistic sense in teacher A's lessons. According to atlas.ti, there are 25 instances of meta-talk in the AHS and only 12 in the BHS, meaning that teacher A talks twice as often about lexico-grammatical aspects than teacher B.

Returning to meta-talk about CDFs, the fact that the teachers produce and model best-practice examples indicates that they must have mastered CDFs at some point in their education. Despite this mastery, they do not include it in their teaching. What is probably necessary is raising the teachers' awareness, too. As long as they are not consciously aware of the fact that CDFs exist – and form an important part of everyday classroom language – they are not able to transfer this knowledge to the learners.

7   Conclusion

The aim of this empirical study was to investigate which cognitive discourse functions identified by Dalton-Puffer in her CDF construct appeared in real life classrooms. Apart from the principal aim, this study also asked how often, by whom and how (in terms of lexico-grammar) the CDFs were applied. Furthermore it aimed at comparing and contrasting the two different school types (AHS and BHS). Finally, the question of whether there was meta-talk about CDFs addressed, too. In order to answer these questions, eight EFL lessons in two upper secondary schools were recorded, transcribed and analyzed. The classes that took part in this study were a 10th and 11th grade AHS and a 12th and 13th grade BHS, situated in the Western part of Lower Austria. The lessons were recorded in September and October 2015.

The quantitative and qualitative analysis was carried out using the program atlas.ti. Dalton-Puffer's CDF construct served as the basis of analysis. The only 'adaption' to the construct concerned translations, which were treated as incomplete definitions. The eight lesson transcripts were then searched for the seven CDFs that Dalton-Puffer introduced, namely CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT. Passages in the transcript that realized one of these types were marked with the respective code. The next sections summarize the main findings of the analysis.

Concerning the number of realizations of CDF types, the analysis of the data found that there were a total of 481 occurrences. The most common CDFs are DESCRIBE, DEFINE and EXPLAIN. The most infrequent type is EXPLORE, which is not surprising given the complex lexico-grammar that its realization requires. Furthermore, there were approximately 60 occurrences of CDFs per lesson. The average is reflected in the actual classrooms, meaning that the distribution of CDFs is, by and large, even.

As regards the initiators of the realizations of CDF types, three different groups were found: students, teachers and 'book'. The latter refers to any language important for the lesson that is not independently produced by either students or teachers. Examples of this group are exercises in the course book or on worksheets, a listening

and a reading. The majority of CDFs identified in the data set are realized by the students. To be more precise, they are responsible for 59 percent of CDF occurrences. Teacher realizations are quite limited, they account for only 18 percent. Together, 77 percent of all CDFs are produced by human beings. Nearly half of these occurrences are co-constructed in teams or groups of students or of students and the teacher.

Analyzing the data in terms of lexico-grammar and comparing the results to the academic language suggested in the theoretical discussion has shown that the language used to perform CDFs in real classrooms differs from this kind of prototypical language. In the majority of cases, the initiators in this study have found various other ways to realize the CDF types. There are a relatively high number of realizations that do follow the guidelines identified by linguists, especially for DEFINE, DESCRIBE and EXPLORE. Nevertheless, numerous other options, apart from the alternatives of descriptive academic language, can be found in the corpus. These findings support the idea of a language continuum and dismiss the construct of a binary opposition of everyday vs. academic language.

The qualitative analysis of the realizations of CDF types has also shown that each of the seven CDF types established by Dalton-Puffer can be divided into at least two sub functions. Since these sub functions often correspond to other function verbs within a CDF type – Dalton-Puffer provides a detailed overview of function verbs (cf. table 3) – the applicability of the CDF construct is not endangered. Precisely speaking, the sub functions that correspond to function verbs are: specifying in DESCRIBE, critiquing in EVALUATE, reasoning in EXPLAIN, speculating in EXPLORE and recounting, informing and summarizing in REPORT.

A third finding yielded by the qualitative analysis refers to the co-occurrences of certain CDF types. There are three CDF types in the corpus that show tendencies to co-occur. First of all, CLASSIFY was often closely connected with DESCRIBE and DEFINE. REPORT appeared with EVALUATE, EXPLAIN and EXPLORE. Finally, DESCRIBE was sometimes linked with EXPLORE and EVALUATE. Moreover, translations and meta-talk were frequently part of all types of CDFs.

In reference to similarities and contrasts between the AHS and the BHS, the results are limited and need to be handled with care. This is due to the unfortunate choice of the participating teachers to select four classes of very different language levels. Summarizing the hard facts, which are by no means universally valid, there is a contrast as far as the most frequent CDF type is concerned. While it is DESCRIBE in the AHS, it is DEFINE in the BHS. However, both schools are in accordance as regards the most uncommon CDF type, i.e. EXPLORE. In regard to teacher CDFs, there is a notable contrast between the AHS and the BHS. The BHS teacher performs significantly more CDFs, which might possibly be due to a difference in teaching style.

As far as explicit meta-talk about or even teaching of CDFs are concerned, the results are more explicit. Neither appears at all in the data. However, meta-talk could be found, but it revolved around different topics, namely pronunciation, vocabulary and grammar.

SUGGESTIONS and IMPLICATIONS for FURTHER RESEARCH

While working on the corpus, multiple questions arose that could not be answered due to the limited scope of this thesis. First of all, it might have been interesting to investigate CDFs in connection with different interaction formats. Although there were many pair and group work phases in the lessons, the setup of the data collection did not allow recordings of every team. In the future it might be worthwhile to examine if the initiators behave differently in the plenum than in smaller study groups.

Another interesting aspect that is connected to the issue of interaction format is the influence of the typical Initiation-Response-Feedback (IRF) cycle of classroom talk. The question is whether this widespread methodology actually hinders students' language production and whether this also influences the realization of CDFs. Especially due to the high number of co-constructed CDFs found in this study, this question would be worth pursuing.

Thirdly, a close examination of task wording might have been an interesting research area. In connection with DEFINE, some initial observations were made, namely that function verbs like *define*, *explain* or *describe* seem to be used interchangeably. Future research endeavors might consider word choice in more detail.

In regard to the significance of translations, the study has shown that they might either appear in isolation or as follow-ups. Previous research has already touched upon the issue of translations, particularly on the different strategies employed by teachers and students (cf. Dalton-Puffer 2007a: 206). Further research into this area would be desirable.

Unfortunately, the topic of differences between school types had to remain quite limited and mainly focused on the quantitative level. If the participants had been of the same age and proficiency level, interesting parallels and contrasts could maybe have been detected. Future comparative research should pay more attention to the tertium comparationis as regards their participants.

Finally, the investigations in connection with meta-talk have shown that future teacher training might consider awareness raising. The data shows that the teachers have mastered the CDFs. However, neither do they draw their learners' attention to them, nor do they explicitly teach them. This might indicate a lack of teacher awareness that could be fostered in teacher training.

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12 Appendix

Transcription conventions

<u>Speaker</u>

T	*teacher*
S	*student*
Sm	*male student*
Sf	*female student*
S1	*identified student*
Sm/fX	*several students (male & female)*

<u>Speech</u>

?	*rising intonation / question*
Capitalization	*emphasis*
<1> </1>	*overlap*
=	*other speaker immediately continues/completes/supports*
-	*part of word is missing / completed by other speaker*
()	*uncertain description*
< >	*non-verbal feedback*
<un> </un>	*unintelligible speech*

Abstract

The field of applied linguistics has always functioned as a mediator between practice and the theoretical framework of linguistics. Researchers in the latter field have tried to investigate phenomena that are of importance for future teaching. Dalton-Puffer's (2013) model of Cognitive Discourse Functions (CDFs) similarly tries to establish a beneficial method for the inclusion of language teaching in so-called CLIL (Content and Language Integrated Learning) classrooms, where there is usually either a focus on the subject matter or the foreign language, instead of a balance. It suggests seven discourse functions representing thinking skills that are realized by means of language. They include CLASSIFY, DEFINE, DESCRIBE, EVALUATE, EXPLAIN, EXPLORE and REPORT. However, studies that acknowledge the valuable insights this model may yield are still low in number (cf. Lackner 2012; Kröss 2014). Therefore, the main aim of this study is to investigate whether the above-mentioned CDFs are present in Austrian EFL (English as a Foreign Language) classrooms. Research questions that are considered include the following: Which CDFs are realized? When? By whom? How often? How are they realized linguistically? In order to answer these questions, eight transcripts of Austrian upper secondary EFL classes are prepared. This mini-corpus is then analyzed, following the guidelines of a quantitative and qualitative descriptive-empirical study. It is hoped that the information gained from this research contributes to the development of the CDF construct and is of value for future CLIL lesson planning.

Abstract Deutsch

Der Bereich der angewandten Linguistik hat eine Vermittlerposition zwischen der Praxis und der Theorie der Sprachwissenschaft. Wissenschaftler im letzteren Bereich untersuchen u.a. Phänomene, die für die Zukunft des Unterrichts von Bedeutung sind. In dieser Tradition steht Dalton-Puffers (2013) Model der Cognitive Discourse Functions (CDFs, dt. Kognitive Diskursfunktionen), welches ein nützliches Mittel für die Einbeziehung von Sprachunterricht in so genannten Content and Language Integrated Learning (CLIL, dt. Englisch als Arbeitssprache) Klassen darstellt. Statt der geforderten Balance von Sprache und Lehrinhalten liegt in diesen Klassen in der Realität meist ein Schwerpunkt auf nur einem der beiden Teile. Das Konstrukt schlägt sieben Diskursfunktionen vor, durch deren Anwendung kognitive Prozesse sichtbar werden und die wohl in jedem Unterricht vorkommen, unabhängig vom unterrichteten Fach. Diese umfassen KLASSIFIZIEREN, DEFINIEREN, BESCHREIBEN, EVALUIEREN, ERKLÄREN, ERFORSCHEN und BERICHTEN. Allerdings gibt es erst eine kleine Zahl von Studien über Unterricht, die sich dieses Models bedienen (vgl. Lackner 2012, Kröss 2014). Aus diesem Grund hat es sich diese Studie zum Ziel gesetzt herauszufinden, ob die oben genannten Funktionen im österreichischen Englischunterricht vorkommen. Forschungsfragen, die beantwortet werden, sind: Welche KDFs werden verwendet? Wann? Von wem? Wie oft? Welche sprachliche Form haben sie? Um diese Fragen zu beantworten wird ein Corpus von acht österreichischen Englischstunden in der Oberstufe erstellt. Dieser wird dann im Sinne einer qualitativen und quantitativen empirischen Studie analysiert. Die Ergebnisse dieser Studie sollen der Weiterentwicklung von Dalton-Puffers Model dienen und sind hoffentlich auch für zukünftigen CLIL Unterricht wertvoll.

Zusammenfassung

Obwohl die Bildungspolitik dem *Content and Language Integrated Learning* (CLIL; dt. Englisch als Arbeitssprache) aktuell große Bedeutung beimisst, findet man in den Praxis kaum die angestrebte Balance von Sprache und Inhalten. Der Fokus liegt entweder auf dem Erlernen der Fremdsprache, oder auf der Vermittlung der angestrebten Inhalte. Um diese Diskrepanz zu überbrücken, stellt Dalton-Puffer ihr Modell der *cognitive discourse functions* (kognitive Diskursfunktionen) vor. Dieses Modell beschreibt sieben Funktionen von Sprache, mit deren Hilfe kognitive Prozesse ausgedrückt werden. Es sind dies KLASSIFIZIEREN, DEFINIEREN, BESCHREIBEN, BEWERTEN, ERKLÄREN, ERFORSCHEN und WIEDERGEBEN. Da diese Funktionen fächerübergreifend wirksam sind, kann das Modell dazu dienen, Überschneidungen zwischen den einzelnen Fachdidaktiken zu finden. In weiterer Folge könnte es Lehrer/innen dabei unterstützen, der ursprünglichen Idee von CLIL gerecht zu werden.

Diese Diplomarbeit hat die Anwendbarkeit von Dalton-Puffers theoretischer Heuristik im Zusammenhang mit österreichischem Oberstufenunterricht in Englisch getestet und festgestellt, dass sämtliche Funktionen im Schulalltag zu finden sind. Vor allem BESCHREIBEN, DEFINIEREN und ERKLÄREN kommen in großer Zahl in der Datenbank vor. Am seltensten findet sich ERFORSCHEN, vermutlich aufgrund der Tatsache, dass diese Funktion nur mithilfe von komplexer Grammatik realisiert werden kann. Die Untersuchung der Urheberschaft der ausgeführten KDFs hat ergeben, dass neben Schüler/innen (59 %) und Lehrer/innen (18 %) auch Unterrichtsmaterialien (23 %) einen nicht unerheblichen Anteil daran haben. Ignoriert man diesen dritten Urheber, so wurde darüber hinaus festgestellt, dass etwa die Hälfte der Funktionen von mehreren Schüler/innen und/oder Lehrer/innen gemeinsam realisiert wurden. Die Analyse von Wortschatz und Grammatik hat gezeigt, dass die Urheber bei der Ausführung der KDFs auf verschiedenste sprachliche Mittel zurückgreifen und ein Spektrum von informellem bis formellem Englisch benutzen. Diese Ergebnisse zeigen, dass die Konzeption einer bipolaren Gegenüberstellung von Alltagssprache und akademisch-formeller Sprache zu Gunsten eines Kontinuums zu hinterfragen ist. Weiters sei darauf hingewiesen, dass ein mangelndes Bewusstsein für KDFs auf Seiten der Lehrer/innen festgestellt wurde und diese deshalb nicht explizit im Unterricht thematisiert werden.

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