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An analysis of teacher questions across different proficiency levels in EFL and CLIL lessons

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List of abbreviations

BHS	Berufsbildende höhere Schulen
BMS	Berufsbildende mittlere Schulen
CLIL	Content and Language Integrated Learning
CLIL0.1	CLIL lesson by T0
CLIL0.2	CLIL lesson by T0
CLIL0.3	CLIL lesson by T0
CLIL1.1	CLIL lesson by T3 (28.11.2001)
CLIL1.2	CLIL lesson by T3 (30.11.2001)
EFL	English as a Foreign Language
EFL0.1	EFL lesson by T0
EFL0.2	EFL lesson by T0
EFL0.3	EFL lesson by T0
EFL1.1	EFL lesson by T1 (1.12.2014)
EFL1.2	EFL lesson by T1 (2.12.2014)
EFL1.3	EFL lesson by T1 (3.12.2014)
EFL2.1	EFL lesson by T2 (24.11.2014)
EFL2.2	EFL lesson by T2 (27.11.2014)
ESL	English as a Second Language
H1	Hypothesis 1
H2	Hypothesis 2
H3	Hypothesis 3
HAK	Handelsakademie
HLW	Höhere Lehranstalt für wirtschaftliche Berufe
NMS	Neue Mittelschule
SLA	Second Language Acquisition
T0	Teacher 0 (EFL, CLIL – NMS, grade 8)
T1	Teacher 1 (EFL - BMS, Fachschule, grade 11)
T2	Teacher 2 (EFL - BHS, HLW, grade 12)
T3	Teacher 3 (CLIL - BHS, HAK, grade 12)
WW1	World War I

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1. Introduction

Since the teacher's language production acts as linguistic input for students, the teacher's language ultimately affects their students' verbal output, as pointed out by Pascual Peña (2010: 65). Thus, teacher questions which present an essential aspect of teacher talk function as a valuable way of eliciting spoken reactions from students in the classroom. Thompson even insisted that "[o]ne of the main forms of interaction between the language teacher and the learner is through questions" (1997: 99). This opinion is also expressed by Tuan & Nhu who referred to Corey (1940) when they stated that "teacher questioning is a fundamental and important means of classroom interaction" (Tuan & Nhu 2010: 32). Moreover, they described teacher questions as "a tool [which] is used in the direct interaction between the teacher and learners" (2010: 32).

As regards the presence of teacher questions in the classroom, Chaudron pointed out that teacher questions constitute 20% to 40% of classroom conversation (1988). Furthermore, studies of English lessons in schools showed that 70% of classroom talk revolve around teacher questions (Tsui 1985, referred to in Tsui 1995: 23). This great proportion of classroom conversation includes the teacher posing the question, choosing a student to answer it, the student's reply, and the teacher's feedback concerning the response (Tsui 1985, quoted in Tsui 1995: 23). This indicates that a considerable share of classroom talk concerns teacher questions and the responding utterances which they entail.

Therefore, a teacher has to be aware of the relevance of questions and their possible effects on interactions in the language classroom. Morgan & Saxton conveyed their understanding of a qualified teacher by explaining that competent teaching requires skilled questioning (1991, referred to in Tuan & Nhu 2010: 32) or that "a good teacher is a good questioner", as phrased by Tuan & Nhu (2010: 32).

All these observations demonstrate that the topic of teacher questions is an essential research area in Second Language Acquisition (SLA) because they represent such a significant and influential aspect of classroom discourse. Numerous studies have already been conducted regarding teacher questions in the classroom. Nevertheless, hardly any insights have been gained concerning teacher questions across different language proficiency levels.

Since the teacher's language, and this includes teacher's questions, influences the students' output, it might be interesting to see whether the teacher's interrogative input changes with the increasing language skills of the students. Therefore, the present study will focus on teacher questions in English as a Foreign Language (EFL) and Content and Language Integrated Learning (CLIL) lessons of varying language levels. In order to provide an answer for the research question, several EFL and CLIL sessions from lower and upper secondary school grades will be analyzed and compared with regard to teacher questions.

2. Teacher talk in classroom discourse

Teacher talk is part of classroom discourse which is a central focus of SLA and is described in the following way by Tsui:

> The term 'classroom discourse' […] refers to all forms of discourse that take place in the classroom. It encompasses the linguistic as well as the nonlinguistic elements of discourse. The former includes the language used by the teacher and the learners, as well as teacher-learner and learner-learner interactions. The latter includes paralinguistic gestures, prosody, and silence - all of which are integral parts of the discourse. (2008: 261)

Tsui points out that in addition to the observable factors of classroom discourse various unobservable aspects influence classroom conversation likewise:

> These factors pertain to the sociocultural contexts in which the discourse is generated, including the physical environment, the socioeconomic and cultural backgrounds of participants, as well as the psychological dimensions such as their perceptions, emotions, beliefs, and orientations. They constitute the unobservable dimension of classroom discourse. (2008: 261)

Studies have illustrated that classroom discourse is primarily controlled by the teacher (Chaudron 1988: 51). Chaudron drew this conclusion due to findings from Bialystock et al. (1978) and Ramirez et al. (1986). Bialystock et al. (1978) who focused on classroom speech in a core French and an immersion French lesson in Canada observed a considerably greater share of teacher talk in the schoolroom compared to student speech. In their analysis they noted only a minor discrepancy between the proportion of teacher and student talk in the two different programs. They pointed out that the percentage of teacher utterances was slightly higher in the immersion lessons with 68.8% in comparison to the core French lesson (Bialystock et al. 1978, referred to in Chaudron 1988: 51). In the data of the core French

lesson the proportion of teacher talk accounted for 61.3% compared to moves by students (Bialystock et al. 1978, quoted in Chaudron 1988: 51).

Ramirez et al. analyzed classroom talk across different English language program types and age levels with students who spoke Spanish as their native tongue (1978). Their research indicated that the percentage of teacher speech varied between 60% and 80% and hence, instructors produced an average of 70% of classroom conversation in the language classroom (Ramirez et al. 1986, cited in Chaudron 1988: 51). An exception in this study was the use of the Spanish medium by teachers in kindergarten and grade 1 English immersion classes where teacher talk constituted only 42% and 47% of classroom discourse (Ramirez et al. 1978, referred to in Chaudron 1988: 51). Thus, in these settings the students' use of their native language outweighed the teacher's proportion of Spanish talk in class.

Overall, Bialystock et al.'s and Ramirez et al.'s findings were in accordance with Musumeci's results whose study also conveyed a majority of teacher talk in comparison to student talk in content-based lessons (1996: 293). She observed that teacher talk accounted for 66% to 72%, "with the remaining time devoted to student speech" (1996: 293). In a study on EFL lessons in Hong Kong by Tsui an even higher amount of teacher speech could be observed (1985). Tui's analysis demonstrated that the teacher produced 80% of the talk in the classroom (1985, referred to in Chaudron 1988: 53).

As a consequence, Chaudron concluded that findings concerning the allocation of talk in the second language classroom are congruent with data from first language lessons (1988: 52). In both, first and second language learning classrooms, a majority of approximately two thirds of the discourse can be ascribed to the instructor in the schoolroom (Chaudron 1988: 52).

Nevertheless, classroom talk is not only classified according to its speakers but also with regard to its functions. Hence, classroom discourse can be categorized into soliciting, structuring, responding, and reacting moves as suggested by Shapiro in an examination of Spanish-English primary classrooms in New York (1979, referred to in Chaudron 1988: 52). Shapiro noticed that teachers dominated the structuring and soliciting moves with about 90% respectively and hence, leaving approximately only 10% of those types of utterances for the learners to claim (1979, cited in Chaudron 1988: 52). Teachers also controlled the reacting

moves with 70% compared to the learners in classroom discourse (1979, quoted in Chaudron 1988: 52). As far as responding moves were concerned, classroom instructors held only a low percentage of 5% in this category (Shapiro 1979, referred to in Chaudron 1988: 52). Thus, Shapiro's findings indicated that teachers owned the structuring and soliciting moves and also controlled a great share of the reacting moves as well (Shapiro 1979, cited in Chaudron 1988: 52). Responding utterances, however, were characterized as typical student function moves in the classroom (Shapiro 1979, quoted in Chaudron 1988: 52). As far as instructor speech in general was concerned, Shapiro claimed that teacher talk consisted primarily of soliciting moves (60%) (1979, cited in Chaudron 1988: 52). 30% of the utterances by the teacher could be recognized as displaying a reacting objective (1979, referred to in Chaudron 1988: 52). The other 10% of teacher speech was spread evenly among structuring and responding moves (Shapiro 1979, quoted in Chaudron 1988: 52).

Bialystock et al. who studied the distribution of classroom moves in a core French and immersion French lesson illustrated an even greater discrepancy concerning the allocation of functions between teacher and students (1978). They showed that in the core language lesson the teacher controlled the structuring (100%), the soliciting (100%), and the reacting moves (88.9%) (1978, referred to in Chaudron 1988: 53). The proportion of responding moves was significantly low with 0.6% in comparison to the learners' speech acts (1978, quoted in Chaudron 1988: 23). Thus, with regard to the distribution of moves in teacher talk, differences could be identified in comparison to Shapiro's findings. A higher proportion of reacting, soliciting, and structuring moves and a lower percentage of responding moves in the core French teacher talk could be noted when compared to Shapiro's results (Chaudron 1988: 53).

Furthermore, Bialystock et al.'s data indicated a divergence between the results in the core and the immersion French session. In the immersion context the teachers issued less soliciting moves (57.8%) in comparison to students (1978, referred to in Chaudron 1988: 53). Moreover, instructors produced more responding moves than in the core lesson (22.6%) (1978, cited in Chaudron 1988: 53). With regard to the distribution of teacher talk in general, a higher percentage of initiating and structuring moves could be identified in the immersion class (Bialystock et al. 1978, quoted in Chaudron 1988: 53). Thus, a difference between the

allocation of teacher and student moves and distribution of teacher talk functions in general could be observed with regard to particular language program types and settings.

The previous discussion has shown the different types of moves in the classroom and demonstrated that students own the category of responding moves. Due to this reason, teacher questions which primarily elicit these responding moves from students are an essential part of classroom talk. However, the specific character of classroom discourse has to be pointed out with regard to interrogatives. In normal circumstances, if a person wants to know something, he or she asks about it in order to acquire this information as Dalton-Puffer stated (2007: 93). In the classroom this situation changes due to two reasons, according to Dalton-Puffer (2007). First of all, because "formal education has to synchronize the knowledge wants of large groups of individuals" and hence, primarily the interests of a number of people and not of a single person are of significance (2007: 93). Secondly, Dalton-Puffer argued that

> the kind of learning which is the essence of formal education is not normally fuelled by an experienced need that learners want to satisfy, or a problem, they want to solve on an individual level. Rather, in formal education students are made aware of potential or historical 'problems' as well as the 'solutions' which have already been found by previous generations. (2007: 93-94)

Thus, learning in the educational context is not necessarily intrinsically motivated but entails the presentation of already solved problems which might not be created by the students' own interests. Due to these reasons, educational knowledge can be described as "a collection of socially and historically established solutions made available for accelerated learning", as defined by Dalton-Puffer according to Ehlich & Rehbein (1986, quoted in Dalton-Puffer 2007: 94). These factors affect classroom interaction and thus, the teacher's language and questions.

As a consequence, classroom discourse has to be treated differently than other conversations, as already suggested by Mehan (1979) and Breen & Candlin (1980: 98, quoted in Cullen 1998: 182). Mehan stated that "conversations in classroom have unique features, and […] the demands of classroom discourse have to be kept separate from the demands of everyday discourse" (1979: 294). Due to its uniqueness, classroom discourse is an important aspect of SLA research and teacher questions, which are considered a crucial element of classroom speech, have become the main focus of various SLA studies. The following chapter will demonstrate the findings which have been discovered in this regard.

3. Teacher questions

First of all, this chapter will discuss the diverse functions of teacher questions and various taxonomies developed for categorizing different types of interrogatives. Then, it will convey findings from studies focused on teacher questions and numerous aspects of classroom questions in general.

3.1. Functions of teacher questions

Questions issued by teachers in the classroom serve different purposes as pointed out by scholars. This subchapter reviews the literature on objectives of teacher questions in the classroom.

Chaudron indicates that one function of classroom questions is to attract students' interest (1988: 126). This purpose of channeling the learners' attention is also observed in Dalton-Puffer's study on questions in the CLIL environment (2007: 123). Due to the support of questions, teachers are able to steer the learners' concentration towards the topic of discussion.

Moreover, Chaudron explains that teacher questions could encourage the learners' involvement by means of answering the teacher's question (1988: 126). This purpose is asserted by Toni & Parse who claim that classroom questions can enhance the participation of pupils (2013: 565). In addition to this, Brown & Wragg mention that teacher questions can help students "to develop an active approach to learning" because they can prompt students "to ask questions of themselves and others" (1993, quoted in Meng et al. 2012: 2609). Hence, teacher questions can promote more personal investment in the learning process by the pupils themselves.

Furthermore, Chaudron argues that teachers present students with interrogatives to appraise the "learners' progress" (Chaudron 1988: 126). This is also claimed by Tsui who states that questions can be phrased to "check students' comprehension" in order to "see if they have acquired the knowledge imparted" (1995: 23). Thus, learners' replies provide feedback concerning their progress and understanding with regard to the topic addressed in the question.

Another objective of teacher questions is that teachers could consider the insights gained from students' answers as feedback concerning their teaching (Toni & Parse 2013: 565). Toni & Parse point out the potential indirectly included in student replies for evaluating "the efficiency of education" (2013: 565). Responses demonstrate the students' state of development and comprehension and thus, indicate the effectiveness of the teacher's classroom instructions.

In addition to directing attention, stimulating participation, and evaluating students' progress and the teaching itself, Tsui remarks that some questions are issued in pursuance of guiding the learners through the lesson (1995: 23). According to Dalton-Puffer, questions in the learning environment can "drive the talk forward" (2007: 123). Therefore, interrogative sentences can also function as "structuring devices" in classrooms (Dalton-Puffer 2007: 123).

In her discussion of the objectives of questions Tsui indicates that another important function of teacher questions in language classrooms is that they present students with the opportunity to train their linguistic skills (1995: 23). This can be realized by asking questions which allow learners to employ the target language in general or to specifically apply certain language structures (1995: 23). Tsui describes this particular purpose as a characteristic of the language classroom (1995: 23).

Furthermore, Shomoossi states that some interrogative sentences by the teacher have the purpose of introducing students to new tasks (2004: 100). Thus, teacher questions can help students to familiarize themselves with an unknown context and can guide them through this new experience, a purpose which is also mentioned by Dalton-Puffer in her discussion of the CLIL classroom (2007: 123).

Shomoossi also points out that teachers ask questions in order to elicit responses and verbal input from various students (2004: 101). With regard to this function, teacher questions are a means of allocating potential opportunities for speaking to all students in the classroom. Thus, teacher questions can create a more equal learning environment where talking turns are "distribute[d] […] fairly among all the learners" (Shomoossi 2004: 101). The teacher possesses the authority to delegate speaking turns to all members in the classroom and can phrase questions in order to promote speaking among learners who might otherwise be disadvantaged.

In addition to the aforementioned purposes, Toni & Parse note that teacher questions can help students to "think at high level[s]" (2013: 565). Hence, interrogative sentences by teachers might provide students with input for developing more abstract thinking skills. Another function mentioned by Toni & Parse is that classroom questions could increase the learners' listening abilities (2013: 565).

Teacher questions can also possess disciplinary purposes as claimed by Tsui (1995: 23), a factor which is also pointed out by Nunan & Lamb (1996, quoted in Meng et al. 2012: 2603). Furthermore, questions in the learning environment might enhance "tolerance and respect" among the participants since they can be applied as "effective classroom management" tools and for solving "classroom problems" as Toni & Parse argue (2013: 565).

Overall, various objectives of teacher questions could be discriminated by scholars. Teachers not only ask questions in order to assess learners, to check their understanding, to focus the learners' attention, or to involve the students but also to fairly allocate speaking turns and to introduce students to new tasks. Moreover, questions in the language classroom provide students with the opportunity to employ new linguistic structures, create a context where language learners can talk in the target language, and aid students in thinking at higher cognitive levels. Furthermore, questions help to improve listening skills and can be employed for managing the class and for resolving difficult classroom situations.

3.2. Taxonomies for teacher questions

In order to categorize different types of teacher questions various researchers have organized frameworks for systematizing questions. This subchapter provides an overview of a number of important question typologies which vary with regard to the developers' special foci.

3.2.1. Framework by Bloom, adapted by Kinsella

One essential teacher question classification system has been provided by Bloom (1956, quoted in Brown 2007: 220) and was later adapted by Kinsella (1991, referred to in Brown 2007: 220). This typology is presented as "one of the earliest taxonomies" by Toni & Parse (2013: 565). The modified framework by Kinsella organizes questions according to the

categories developed by Bloom which include knowledge questions, comprehension questions, application questions, inference questions, analysis questions, synthesis questions, and evaluation questions (1991, referred to in Brown 2007: 220). These seven different question classes target particular types of information and show certain characteristics.

The first category, knowledge questions, check "recall and recognition of information" and aim at obtaining answers about facts from students (Kinsella 1991, cited in Brown 2007: 220). This type of question is characterized by words such as *define*, *tell*, *list*, *identify*, *describe*, *select*, *name*, *point out*, *label*, or *reproduce* as described by Kinsella (1991, cited in Brown 2007: 220). Furthermore, knowledge questions might be introduced with the question words *who*, *what*, *where*, or *when* (Kinsella 1991, referred to in Brown 2007: 220). Toni & Parse exemplify a knowledge question with *What is the special name of this triangle?* in their discussion of Bloom's typology (2013: 565).

The purpose of comprehension questions is to interpret meaning (Kinsella 1991, quoted in Brown 2007: 220). Words and phrases as, for example, *state in your own words*, *explain*, *define*, *locate*, *select*, *indicate*, *summarize*, *outline*, and *match* are applied in comprehension questions (Kinsella 1991, referred to in Brown 2007: 220). A possible comprehension question would be *Explain how you got that answer* as proposed by Toni & Parse (2013: 565).

Application questions ask students to put information which students have acquired, for instance, theoretical concepts, ideas, rules, methods, or approaches into practice (Toni & Parse 2013: 565). Those questions are often framed with phrases like *demonstrate how*, *use the data to solve*, *illustrate how*, *show how*, *apply*, *construct*, *explain* or include questions such as *What would result?* or *What would happen?* as pointed out by Kinsella (1991, quoted in Brown 2007: 220). Toni & Parse suggest the sentence *Give me an example of a situation that you may have this experience* as an instance of an application question (2013: 565).

The fourth category, inference questions, test "the [student's] ability to form conclusions that are not directly stated in instructional materials" (Toni & Parse 2013: 565). Inference questions are characterized by the words *how* and *why* or can be built like the interrogatives *What did x mean by?*, *What does x believe?*, and *What conclusions can you draw from x?*

(Kinsella 1991, referred to in Brown 2007: 220). Toni & Parse provide the question *How do you feel about it?* as an example of an inference question (2013: 565).

The function of analysis questions is to test learners' "ability to breakdown [sic] material into its elements so that its organizational structure may be understood" (Toni & Parse 2013: 565). Furthermore, this type of question tests if learners can "relate parts to the whole" (Kinsella 1991, cited in Brown 2007: 220). Analysis questions could be phrased the following way: *What is the relationship between x and y?*, *What is the function of x?*, *What is the main idea?* (Kinsella 1991, referred to in Brown 2007: 220). Moreover, they often include words such as *distinguish*, *diagram*, *chart*, *plan*, *deduce*, *arrange*, *separate*, *outline*, *classify*, *contrast*, *compare*, *differentiate*, or *categorize* (Kinsella 1991, cited in Brown 2007: 220). Toni & Parse serve the following interrogative as a possible analysis question: *Why did that work in this case?* (2013: 565).

The sixth category includes synthesis questions which have the purpose of asking students to integrate various parts in order to create a new concept (Kinsella 1991, quoted in Brown 2007: 220). Synthesis questions "encourage learners to form something new and rely on innovative and creative thinking" as claimed by Toni & Parse (2013: 565). This type of question is usually framed with the verbs *compose*, *combine*, *estimate*, *invent*, *choose*, *hypothesize*, *build*, *solve*, *design*, or *develop* (Kinsella 1991, quoted in Brown 2007: 220). Furthermore, they include patterns like *What if x?*, *What would you have done in this situation?*, or *What would happen if x?* (Kinsella 1991, cited in Brown 2007: 220). Toni & Parse provide an instance of a synthesis question with *What would happen if you called him?* in their discussion of Bloom's scheme (2013: 565).

Evaluation questions create opportunities for students to assess certain information (Kinsella 1991, referred to in Brown 2007: 220). With the help of these questions learners are asked to judge material and provide a reason for their choice (Kinsella 1991, cited in Brown 2007: 220). Usual verb choices for this question category are *evaluate*, *rate*, *defend*, *dispute*, *select*, *judge*, *grade*, and *verify*. Questions such as *Which is best?*, *Which is more important?*, or *Which do you think is more appropriate?* serve as examples (Kinsella 1991, quoted in Brown 2007: 220). Toni & Parse suggest *What do you think?* as a typical evaluation question (2013: 565).

3.2.2. Typology by Barnes

Barnes' taxonomy which is described as one of the earliest frameworks along Bloom's distinguishes between four different question types that could be observed in secondary school classrooms in Britain: factual questions, reasoning questions, open questions, and social questions (Barnes 1969, referred to in Ellis 1994: 587).

While factual questions aim at eliciting information about facts and are introduced, for example, with the question word *what*, reasoning questions try to obtain explanations and reasons from students (Barnes 1969, cited in Ellis 1994: 587). Reasoning questions are phrased with words such as *why* and *how* and can either be open or closed in character (Barnes 1969, referred to in Ellis 1994: 587). Closed reasoning questions are asked "with only one acceptable answer in mind" whereas open reasoning questions allow a range of appropriate replies by the learners (Barnes 1969, quoted in Ellis 1994: 587).

This differentiation between open and closed reasoning questions is also discussed by Dalton-Puffer. According to her, the distinction between open and closed questions concerns the "amount of built-in 'freedom' or scope which the questioner gives the respondent for her/his answer" (2007: 96). While open questions accept a greater choice of potential answers, appropriate answers to closed questions are "limited to a simple, one-word answer, which make[…] them quick and easy to answer and leave[…] the conversational control with the questioner" (2007: 96). Responses to open questions, however, are more challenging for teachers to incorporate in their lessons because not all the possible answers can be anticipated in advance (Dalton-Puffer 2007: 97). As a consequence, open questions "put a greater strain on the teacher's cognitive and linguistic resources" (Dalton-Puffer 2007: 97).

However, it has to be mentioned that this distinction between open and closed reasoning questions is often unclear, according to Barnes. He points out the probability of open reasoning questions which possess a disguised closed nature (1969, cited in Ellis 1994: 587). Barnes indicates that a careful examination of an open reasoning question might result in the reconsideration of its character (1969, referred to in Ellis 1994: 587). He names those questions 'pseudo-questions' due to their misleading nature (Barnes 1969, quoted in Ellis 1994: 587).

In addition to factual and reasoning questions, Barnes includes categories for open questions and social questions in his framework. Open questions are interrogatives which "do not require any reasoning" on the learners' side (Barnes 1969, cited in Ellis 1994: 587). Social questions, which represent the fourth category in Barnes' typology, describe questions which "influence student behaviour by means of control or appeal" (Barnes 1969, quoted in Ellis 1994: 587). An example of a social questions would be *Are you listening?*.

3.2.3. Taxonomy by Mehan

The typology by Mehan is another important and renowned framework for categorizing teacher questions. His taxonomy suggests a differentiation between 'information seeking questions' and 'known information questions' (1979: 285), also known as referential and display question. Mehan describes display questions the following way: "When a known information question is asked, the questioner already has the answer or at least has established the parameters in which a reply can properly fall. The questioner is testing the knowledge of the respondent" (1979: 285-286). Referential questions, on the other hand, are posed in order to obtain new information from the respondent as claimed by Mehan (1979: 286). Thus, the difference between display and referential questions or 'known information questions' and 'information seeking questions' lies in the information status of the questioner - whether he or she has already acquired this particular piece of knowledge or is still lacking it.

Concerning the differentiation between 'known information questions' and 'information seeking questions', Dalton-Puffer illustrates another distinction (2007). She points out that referential questions offer an authentic communicative function and are characterized by the "'normal' purpose of a question" of gaining new information, in contrast to display questions (Dalton-Puffer 2007: 95-96). Nevertheless, Dalton-Puffer argues that display questions also seek to discover new insights but regarding the "state of mind of the student" (2007: 95). Hence, finding of new information happens "on a different level" via display questions when compared to referential questions, according to Dalton-Puffer (2007: 95).

Another important concept is Berry's distinction between 'primary knower' and 'secondary knower' with regard to display and referential questions (1981: 126-127). When the primary knower, usually the teacher, phrases test questions in the classroom, the secondary knower,

the learner, responds to them (Dalton-Puffer 2007: 96). A differentiation between primary and secondary knower is not necessary when a referential question is raised because new information is sought by the inquirer (Dalton-Puffer 2007: 96). Thus, with regard to 'normal' and 'authentic' questions the primary or secondary knower status of the questioner or the respondent is unimportant, contrary to display questions (Dalton-Puffer 2007: 96).

3.2.4. Framework by Long & Sato

Long & Sato developed a typology for questions in the foreign language classroom which they adapted from Kearsley. Their basis, Kearsley's framework, presents an interdisciplinary approach for categorizing questions (Long & Sato 1983: 274). First of all, Kearsley's initial taxonomy will be presented before Long & Sato's modifications will be discussed.

Kearsley differentiates between echoic, epistemic, expressive, and social control questions (1976, referred to in Long & Sato 1983: 274-275). According to Kearsley, echoic questions are "those which ask for the repetition of an utterance or confirmation that an utterance has been interpreted as intended" (1976, cited in Long & Sato 1983: 274). Typical echoic questions are *Pardon?*, *What?*, or *Huh?* (Long & Sato 1983: 274).

The second category, epistemic questions, can be subdivided into referential and evaluative question types and they attempt to elicit new information (Kearsley 1976, quoted in Long & Sato 1983: 274). While referential questions are asked in order "to provide contextual information about situations, events, actions, purposes, relationships, or properties", evaluative questions aim at checking the respondent's knowledge concerning the subject matter of the question (Kearsley 1976, referred to in Long & Sato 1983: 274). Hence, evaluative questions can be characterized as display or known information questions while referential questions are also described as wh-questions (Long & Sato 1983: 274). This distinction has also been pointed out by Mehan (1979), as discussed in the previous section (cf. 3.2.3.).

Interrogative sentences which "convey attitudinal information to the addressee" belong to the category of expressive questions, the third type of questions (Kearsley 1976, cited in

Long & Sato 1983: 275). An example of an expressive question would be *Isn't it strange to read about such mysterious happenings?*.

The last class of questions, Kearsley's social control questions, are questions which are "used to exert authority by maintaining control of the discourse" (1976, referred to in Long & Sato 1983: 275). This type of question distinguishes between attentional and verbosity questions (Kearsley 1976, cited in Long & Sato 1983: 275). Attentional questions attempt to focus the addressee's attention by "allow[ing] the questioner to take over the direction of the discourse" whereas verbosity questions are only framed "for the sake of politeness or to sustain conversation" (Kearsley 1976, referred to in Long & Sato 1983: 275). Long & Sato suggest cocktail party questions as typical verbosity questions (1983: 275).

In Long & Sato's framework the original typology by Kearsley is easily recognizable (1983: 275-276). However, certain modifications were required in order to adapt the framework for verbal discourse in the language classroom. Those changes include alterations concerning the echoic and epistemic question category.

Kearsley's echoic question class was further divided into three subcategories, namely comprehension checks, clarifications requests, and confirmation checks, to provide a suitable framework for a learning environment (Long & Sato: 1983: 275). According to Long & Sato, these categories permit more detailed characterization of echoic questions:

> A subdivision of Kearsley's category, *echoic*, into *comprehension checks*, *clarification request*s, and *confirmation checks* allowed distinctions to be made among acts whose function […] reflects […] the direction of information-flow in preceding utterances and […] the degree to which conversation is negotiated through the modification of its interactional structure. (1983: 275)

Hence, these echoic subcategories included by Long & Sato produce more insights into individual conversations concerning their organization and the allocation of turns. First of all, confirmation checks will be discussed followed by a description of comprehension checks and clarification requests.

In the subcategory of confirmation checks questions which can be answered with yes/no or which are phrased as sentences that are accompanied by a rising intonation can be found (Long & Sato 1983: 275). Their purpose is to discover whether the listener "had heard and/or understood the previous speaker's previous utterance correctly or to dispel that belief" (Long

& Sato 1983: 275). Confirmation checks usually include "exact or semantic, complete or partial repetition of the previous speaker's utterance" (Long & Sato 1983: 275). The second part of the following interaction spoken by the teacher and addressed to a student is considered a confirmation check by Long & Sato (1983: 275):

1. S: Carefully.
   T: Carefully?

The utterance *Did you say 'he'?* mentioned by Long & Sato in their discussion of echoic questions would be another instance of a confirmation check (1983: 275).

The second subcategory, comprehension checks, are utterances applied to "establish whether the preceding utterance has been understood *by the interlocutor*" (Long & Sato 1983: 275). Examples of comprehension checks are *Alright?*, *OK?*, or *Does everyone understand 'polite'?* (Long & Sato 1983: 275). This type of echoic question often includes partial or complete duplication of the previous statement or a tag question. Furthermore, a comprehension check can be stated more explicitly with an interrogative such as *Do you understand?* (Long & Sato 1983: 275).

Clarification requests, which belong to the last category of echoic questions, serve the purpose of obtaining an explanation concerning the speaker's former utterance (Long & Sato 1983: 275-276). Long & Sato observe that they are "mostly formed by questions, but may consist of Yes/No *or* Wh-questions […] as well as uninverted […] and tag questions" (1983: 276). Moreover, they can be directly stated with the help of utterances such as *I don't understand* or *Try again* (Long & Sato 1983: 276). Other possible examples of clarification requests are *What do you mean?* or *What?* (Long & Sato 1983: 276).

With regard to epistemic questions, Long & Sato introduced another subcategory to this question class, namely rhetorical questions (1983: 275). Rhetorical questions such as *Why didn't you do your homework?* are formed like questions but are not supposed to be answered by the interlocutor (Long & Sato 1983: 276). Long & Sato point out that this type of epistemic question is "asked for effect only" and that the questioner might even provide the response him/herself (1983: 276).

In addition to this, Long & Sato classified Kearsley's expressive questions as reflecting an epistemic character (1983: 276). The reason for this might be that expressive questions

attempt to gain unknown attitudinal information from the addressee as exemplified in the question *It's interesting the different pronunciations we have now, but isn't it?* (Long & Sato 1983: 276). Hence, Long & Sato's epistemic question category includes four different subcategories in comparison to Kearsley's original framework which only considered display and referential questions as showing an epistemic nature.

Moreover, in their adaptation Long & Sato excluded the attentional and verbosity questions of Kearsley's typology (1983: 275). The reason for their omission was that Long & Sato could not identify these types in the data of their study on questions in classroom talk and as a consequence, neglected these categories (1983: 275).

Overall, it could be said that Long & Sato based their framework on Kearsley's typology but had to modify it in order to have a suitable typology for questions in classroom discourse. However, the essential concepts by Kearsley have been preserved in Long & Sato's taxonomy.

3.2.5. Typology by Håkansson & Lindberg

Håkansson & Lindberg developed their scheme from observations of questions in second language classes of Swedish. They organize questions "according to form and cognitive level as well as their communicative value and orientation" (1988, referred to in Ellis 1994: 588).

In the category of question form Håkansson & Lindberg's framework differentiates nexus questions, alternative questions, and x-questions (1988: 75). Nexus question are characterized as questions through which "the speaker wants to have his doubts resolved whether it is correct to connect this particular subject with this particular predicate" (Jespersen 1924: 303, cited in Håkansson & Lindberg 1988: 75). This type of question can be replied with yes/no (Håkansson & Lindberg 1988, referred to in Ellis 1994: 588).

The second class of Håkansson & Lindberg's typology concerning form consists of alternative questions which "provide the responder with an alternative to select from" while the last type of question, the x-question, tries to elicit an "unknown element" (1988, quoted in Ellis 1994: 588). Thus, "Jespersen […] suggested the use of the symbol X for the unknown

and the term X-question for questions asked to find out what the X stands for" (Håkansson & Lindberg 1988: 75).

Furthermore, Håkansson & Lindberg categorize questions with regard to the cognitive difficulty the interlocutor faces when attempting to provide an answer for them (1988, referred to in Ellis 1994: 588). They distinguish between questions which try to obtain information concerning the cognitive memory and interrogatives which activate convergent thinking or divergent/evaluative thinking (Håkansson & Lindberg 1988, quoted in Ellis 1994: 588). The first type of question, the cognitive memory question, asks the interlocutor to recall knowledge (Håkansson & Lindberg 1988: 77). Håkansson & Lindberg provide the following examples as questions directed at the cognitive memory of the respondent: *Hur gammal är du, Ali? [How old are zou [sic], Ali?]* or *Vad är motsatsen till vid? [What is the opposite of wide?]* (1988: 77).

Questions aiming at convergent thinking are posed in order to obtain "the analysis and integration of given or remembered data within a tightly structured framework" (Håkansson & Lindberg 1988: 77). The following interaction mentioned by Håkansson & Lindberg includes such a question by the teacher (1988: 77):

2. T: Hur lång e du, Paul? [How tall are you, Paul?]
   S: Ungefär eh ungefär ett meter en meter meter åttitre centimeter tror ja. [About eh about a meter one meter meter eighty three centimeters, I think.]
   T: Ja lyssna pa mej "ja e en å sjuttifem ungefär". Hur läng e du? [Yes listen to me "I am one and seventy-five more or less". How tall are you?]
   S: Ehh en å åttitre. [Ehh one and eighty-three.]

Their last type of cognitive level questions asks for divergent and evaluative thinking that is "stimulated by questions which permit the individual to generate data freely and independently from an individual or personal perspective" (Håkansson & Lindberg 1988: 77). Possible examples from Håkansson & Lindberg's data are *Om dina barn slåss vad skulle du göra då? [If your children are fighting what would you do?]* and *Tror du att de har nånting me föräldrarnas ålder att göra om dom e auktoritära eller demokratiska? [Do you think it has anything to do with the age of the parents whether they are authoritarian or democratic?]* (1988: 77-78).

With regard to their third means of categorizing questions, Håkansson & Lindberg's concept of communicative value concerns the differentiation between known information questions

and information seeking questions, a distinction that has been developed by Mehan as they point out (1979, quoted in Håkansson & Lindberg 1988: 78) (c.f. 3.2.3.). Thus, their framework discriminates between authentic questions which serve the purpose of acquiring new knowledge and questions which simply test the learner.

Håkansson & Lindberg's last principle for classifying interrogatives includes the notion of communicative orientation which considers whether "the question is focused on the language itself (the medium) or on real-life topics (the message)" (Håkansson & Lindberg 1988, referred to in Ellis 1994: 588). Concerning the communicative orientation of a question, Håkansson & Lindberg argue the following: "The distinction between medium-orientation and message-orientation is in no way a clear-cut one and therefore the two orientations should be seen as extreme poles on a continuum rather than absolute opposite categories" (1988: 80).

While the question *Vad är motsatsen till 'vid'? [What is the opposite of 'wide'?]* is considered as a medium-oriented question, *Vem är längst i klassen? [Who is the tallest person in the class?]* is characterized as a question situated between the two ends of the continuum (Håkansson & Lindberg 1988: 80). Håkansson & Lindberg exemplify a message-oriented question with the following interrogative sentence: *Hur är förhällandena i Chile? [How are the conditions in Chile?]* (1988: 80).

3.2.6. Dalton-Puffer's framework

In her study on questions in the CLIL classroom Dalton-Puffer not only applies Mehan's distinction of display and referential questions and Barnes' differentiation between open and closed questions but also develops a taxonomy concerning the different types of information which are sought by the inquirer (2007: 98). Hence, her typology focuses on the kind of content that should be elicited by the questions and distinguishes between facts, explanations/opinions/reasons, inner states/emotions, and meta-cognitive questions (2007: 98).

The purpose of Dalton-Puffer's fact questions is to acquire facts from the learners while the second question class, explanation/opinion/reason questions, try to obtain opinions,

explanations, and reasons from students, as suggested by the names of the question types. Explanation/opinion/reason questions have to be distinguished from meta-cognitive questions due to them targeting different types of information. Dalton-Puffer's class of meta-cognitive questions contain interrogative sentences which "engage the learner in an extended dialogue in which s/he has to explain or argue a particular context" (2007: 98). In contrast to questions asking for reasons/opinions/explanations, meta-cognitive questions request from the respondent to explain his/her own opinion (Dalton-Puffer 2007: 98). Dalton-Puffer demonstrates this difference with the following examples: *Why did the Spartans prefer sons?* is an instance of a question asking for reasons of other people while *Why are you saying this?*, *Why do you think this is correct?*, or *What do you mean?* are meta-cognitive questions where the interlocutor has to argue his/her case (2007: 98). Furthermore, typical meta-cognitive questions display an open character and are commenced with *why* (2007: 98).

Although the questions about inner states and emotions were initially included in Dalton-Puffer's research, they were soon neglected. The reason for this was that no questions belonging to this category could be identified by Dalton-Puffer in her CLIL data (2007: 98), as it was the case in Long & Sato's adaptation of Kearsley's scheme (c.f. 3.2.4.).

As can be seen from the different taxonomies presented in this section, questions can be categorized with regard to different foci. Scholars such as Bloom (1956, adapted by Kinsella 1991), Barnes (1969), Mehan (1979), Long & Sato (1983), Håkansson & Lindberg (1988), and Dalton-Puffer (2007) have developed various typologies for organizing questions.

3.3. Studies regarding teacher questions

This subchapter will convey significant findings from assorted studies focusing on classroom questions. First of all, observations concerning display and referential questions will be discussed, and then various other observations regarding questions and their characteristics and effects on classroom interaction will be presented.

3.3.1. Display versus referential questions

Numerous studies have shown that display questions dominate the classroom in comparison to referential questions. Long & Sato who examined the distribution of known information questions and information seeking questions discovered that out of 604 questions in 6 different ESL lessons 476 questions could be identified as display questions (Long & Sato 1983: 277). In their data only 128 of all interrogatives were of referential character which indicated a significant predominance of display questions in the language classroom (Long & Sato 1983: 277).

In accordance with Long & Sato's findings were the results of Ramirez et al.'s study which examined questions across different age groups and teaching programs (Ramirez et al. 1986, referred to in Chaudron 1988: 127). In their research they observed that the number of display questions was two times higher than the amount of referential questions in all the different settings (Ramirez et al. 1986, quoted in Chaudron 1988: 127). Due to their results, Ramirez et al. concluded that the dominance of display questions in teacher talk is consistent across various types of teaching programs and age levels of students (Ramirez et al. 1986, cited in Chaudron 1988: 127).

Shomoossi (2004) who observed the interaction between EFL teachers and students of English in reading lessons in two Iranian universities found even more striking results than Ramirez et al. He discovered that out of a total number of 1,628 teacher questions only 293 were of referential character (2004: 99). Hence, the amount of display questions was significantly higher with 82% (Shomoossi 2004: 99). The findings from this study exceeded Ramirez et al.'s aforementioned data which provided twice as many display questions than referential questions. In Shomoossi's study the percentage of display questions was 4.4 times higher than the amount of information seeking questions (2004: 99).

Fakeye who observed EFL lessons in secondary schools in Nigeria claimed a marginally greater share of known information questions when compared to Shomoossi (2004). His data showed that the percentage of display questions was significantly larger with 85% than the number of questions with a referential nature (2007: 129).

Other scholars which examined the distribution of display and referential questions were Nunan (1987, referred to in Ho 2005: 298), Musumeci (1996: 299), Farahian & Rezaee

(2012: 163), and Yang (2010: 14). In accordance with Long & Sato's, Ramirez et al.'s, Shomoossi's, and Fakeye's findings, their research showed a dominance of display questions over referential questions.

In contrast with these results was Dalton-Puffer's data from a study on questions in the CLIL classroom (2007). She observed a majority of referential questions (53%) in comparison to display questions (47%) (2007: 101). However, she explained these surprising proportions by her incorporation of learner questions and the inclusion of teacher questions from the regulative register (2007: 101): Hence, one reason for the significantly higher percentage of information seeking questions in her study was due to the integration of learner questions which are typically characterized by a referential nature (2007: 101). It is generally known that in the classroom it is the teacher who asks for known information and not the students. Furthermore, her second reason regarding the increased share of referential questions as a consequence of the inclusion of regulative register questions is also plausible. Questions which discuss procedural matters are questions with an 'authentic' purpose and hence, aim at eliciting information that is not known by the teacher as pointed out by Dalton-Puffer (2007: 106).

The difference between questions from the regulative and the instructional register was also asserted by Meng et al. (2012). Their data about teacher questions in a content-based language classroom showed that display questions were consistently connected to content (2012: 2606). Referential questions, however, could be identified as not being directly linked to the subject matter of the lesson (2012: 2606). Thus, from their data it could be inferred that instructional talk generates display questions and procedural talk evokes referential questions from the teacher. As a consequence, Dalton-Puffer's opinion that the inclusion of procedural questions partially produced the unusually high percentage of referential questions in her study was supported by Meng et al.'s results.

Furthermore, Meng et al.'s and Dalton-Puffer's observations regarding the two registers in the classroom also explain Broidl's findings which showed dissimilar results in a CLIL context compared to Dalton-Puffer's research (2014). In her examination of teacher questions in the CLIL program a majority of display questions could be identified (94.09%) (2014: 14). However, her data only included questions from the instructional register which provided a probable reason for Broidl's significantly larger percentage of display questions in

comparison to Dalton-Puffer's CLIL study. Moreover, it has to be kept in mind that Dalton-Puffer incorporated student questions in her data which was not the case in Broidl's research. Hence, Broidl's findings differ from Dalton-Puffer's due to the explanations already proposed by Dalton-Puffer in her interpretation of the high number of referential questions in her study (2007: 101).

In addition to these findings, Dalton-Puffer pointed out the difficulties concerning the identification of display and referential questions. In her data Dalton-Puffer mentioned several referential questions which were display questions in disguise (2007: 108). She exemplified this with the questions *Do you remember any names?*, *Do you know when it fell?*, or *Can you tell us what the pressure on those divers is?* (2007: 108). By posing these questions the teacher required students to respond with an answer which contained "common knowledge" as argued by Dalton-Puffer (2007: 108). These kinds of questions indirectly checked the learners' general knowledge - information that the teacher was in possession of. Dalton-Puffer claimed that these teacher questions only exhibit an outwardly referential nature but were "treated as […] display question[s] by the respondents" due to their testing character (2007: 108). Furthermore, she claimed that the phrases *do you remember*, *do you know*, or *can you tell us* represent "an indirectness strategy occasionally employed by teachers to cushion display questions" (2007: 108). Thus, Dalton-Puffer indicated that a significant number of the referential questions in her data were hidden display questions whose true character could be revealed by closer inspection.

Moreover, Dalton-Puffer argued that questions which "bring information which has been generated outside it onto the discursive floor of the plenary" should be considered as problematic as well (2007: 108). This includes teacher questions that ask for "results of group work, pair work, or homework; further details during presentations; experience or knowledge gained outside the classroom" (Dalton-Puffer 2007: 108). The teacher who prepares these assignments for the learners "has made a decision of why s/he wants the students to study this particular material" (Dalton-Puffer 2007: 108). Hence, the teacher has already determined what he or she wishes to hear, for example, in a presentation or as the result of a group or pair work. In Dalton-Puffer's opinion, "[it] depends very much on the kind of materials and the openness of the task whether the students have the chance to create knowledge which has not been pre-empted by the teacher" (2007: 108).

In her discussion of this particular issue Dalton-Puffer referred to an example in her data where a learner was asked to present information about a Nazi concentration camp near his home (2007: 108). For this presentation the learner also obtained new information by asking elderly family members and people who lived close by about their experience concerning this topic (2007: 108). Therefore, in this particular task the student who presented the information was elevated to the status of a 'knower' (Dalton-Puffer 2007: 108-109). Since the student acquired knowledge from sources apart from material which was accessible for everyone, the teacher did not solely assume the role of the expert and teacher questions during the presentation were not merely display questions anymore.

This phenomenon of students acquiring the status of a knower could also be identified in data collected in vocational schools as Dalton-Puffer pointed out (2007: 109). Dalton-Puffer argued that in this particular school context the learner's "extramural experience", acquired through his/her practical training, could provide him/her with "a kind of expert status" (2007: 109).

Overall, many studies discovered a dominance of display questions over referential questions. Moreover, characteristic questions of the instructional and regulative register were observed. Furthermore, problematic issues concerning the distinction of information seeking and known information questions could be identified by indicating typical features of disguised display questions. Instances where teachers cease to assume the role of the knower in the classroom were pointed out as well.

3.3.2. Focus on factual knowledge

This section will review various examinations that showed that a great majority of teacher questions about facts could be recognized in the classroom.

Dalton-Puffer's analysis of questions in the CLIL context provided some valuable insights regarding this matter (2007). The framework she applied, which has already been discussed in the previous subchapter on question taxonomies (cf. 3.2.6.), organized all interrogatives with regard to the kind of knowledge they aimed at and focused on two categories: facts and opinions, reasons, and explanations. In her data Dalton-Puffer identified a substantial

dominance of fact questions (89%) in comparison to questions concerning opinions, reasons, and explanations (2007: 101). Thus, she concluded that "[t]he bread and butter of Austrian CLIL classrooms is obviously facts, facts, and facts" (2007: 125). Furthermore, she pointed out that not only teachers but also students scarcely asked questions which requested reasons or explanations from the interlocutor (2007: 125).

These results could be supported by Wilen who claimed that "teachers spend most of their time asking low-level cognitive questions, which concentrate on factual information that can be memorized" (1991, referred to in Meng et al. 2012: 2603). In addition to the observations by Dalton-Puffer and Wilen, Pascual Peña, who studied teacher questions in CLIL sessions given by two different teachers, also found a major share of fact questions (2010). In the classes by one teacher the average proportion of fact questions constituted 73.6% whereas in the lessons by the other teacher they accounted for 63.3% of all questions (2010: 68).

Broidl who compared teacher questions in EFL and CLIL lessons observed a remarkable high amount of fact questions in both programs (2014: 14). While the percentage of interrogatives eliciting facts accounted for 69.39% in the EFL lessons, the proportion was even higher in the CLIL context with 89.16% (2014: 14).

Therefore, from the results of the aforementioned studies it can be seen that factual questions dominate the EFL and CLIL classroom. It seems that both parties, teachers and learners, favor fact questions over questions which target any other kind of information.

3.3.3. Comparison of different teaching programs

This part of the chapter will analyze data concerning questions gathered in various teaching contexts and will compare the results of the different programs.

Bialystock et al. examined immersion French lessons and core French lessons in their study and contrasted the results (1978, cited in Chaudron 1988: 127). Their data illustrated that a higher number of interrogatives obtaining general information, "potentially referential [questions]" as Chaudron argued, could be identified in the immersion setting (1978, referred to in Chaudron 1988: 127). These findings might indicate that "the more language-oriented the classroom, the more the teacher finds it appropriate to elicit linguistically constrained

student contributions in order to promote practice in the language", according to Chaudron (1988: 127).

Contrary to Bialystock et al.'s observations were Broidl's results whose study focused on the distinctiveness between lower grade EFL and CLIL lessons with regard to teacher questions (2014). In her examination of the data more known information questions could be identified in the CLIL context (94.09%) (2014: 14). Thus, the lessons with the supposedly greater focus on language, the EFL sessions, included more referential questions (46.12%) than the content-oriented CLIL lessons in Broidl's data (2014: 14). Broidl suggested that the lower percentage of display questions in the EFL setting (53.88%) was observed because the EFL teacher wanted to allow greater freedom for appropriate responses so learners could practice their language skills in an unobstructed way (2014: 16). Hence, her data could not support the claim that teachers want "linguistically constrained student contributions" in the lessons focusing on the language itself as Chaudron phrased it (1988: 127).

Concerning the form of teacher questions, a higher percentage of closed questions (30.20%) could be found in the EFL setting compared to the CLIL context in Broidl's study (2014: 14). Broidl pointed out that the reason for the lower proportion of closed questions in the CLIL sessions (6.40%) might be due to the various brainstorming tasks which were included in these lessons (2014: 19). Due to the teacher's wish to activate the students' knowledge and encourage participation with the help of open formed questions, the data from the CLIL lessons probably showed a greater number of open questions in comparison to the EFL context. In the EFL lessons the percentage of open questions was dominant as well, however, an activity where the teacher tried to guide and support the students increased the mean amount of closed questions (Broidl 2014: 15).

Furthermore, as already discussed in the previous section about factual questions (c.f. 3.3.2.), Broidl's study examined the distribution of fact versus opinion/reason/explanation teacher questions in EFL and CLIL lessons. Her results showed a higher percentage of fact questions in the CLIL setting (89.16%) in comparison to EFL lessons (69.39%) (2014: 19). In her analysis of the data Broidl suggested that the higher percentage of factual questions in the CLIL sessions might be due to the teacher's focus on content knowledge in this type of program (2014: 17). In addition to this, she pointed out that in the EFL lessons the teacher might have wanted to provide students with more opportunities to practice their language

skills by addressing learners with an increased number of questions aiming at opinions, reasons, and explanations where students could elaborate in the target language (2014: 17). Thus, the variation of findings concerning the type of information sought after by questions in the EFL and CLIL data might be due to the different foci of the teaching programs.

In conclusion, dissimilarities regarding teacher questions in different program types could be pointed out in this section. Data concerning the influence of the teaching program's focus on the distribution of display and referential questions provided inconclusive results. Nevertheless, research has shown a larger amount of fact questions in CLIL lessons in comparison to the EFL context probably due to an increased orientation towards factual knowledge in this program type. Moreover, findings indicate that the kind of classroom task might influence openness or closedness of questions.

3.3.4. Native speakers versus ESL teachers

This part of the chapter will focus on differences between the uses of the target language of ESL teachers and native speakers when interacting with non-native speakers.

Long & Sato examined the question behavior of ESL teachers in the classroom and of native speakers in an informal interaction with non-native speakers (1983). They compared the results and their analysis demonstrated significant dissimilarities between both contexts. In six ESL lessons the teachers asked a total number of 938 questions (1983: 227-278). However, the amount of questions was considerably higher in thirty-six informal conversations between native speakers and non-natives with 1,322 interrogatives (Long & Sato 1983: 277-278). Thus, Long & Sato's analysis pointed out that in general the ESL instructors applied less questions but more statements and imperatives in their talk compared to the native speakers in their data (1983: 278). Overall, only 35% of the teachers' speech were questions while 54% comprised statements and 11% accounted for imperatives in the teachers' talk (1983: 278). In the native speakers' speech the percentage of questions was significantly greater with 66% whereas statements accounted for only 33% and imperatives for 1% (1983: 278).

Furthermore, another difference concerning the proportion of display questions between ESL teacher talk and native speaker conversation with non-natives could be identified. In the instructors' speech the percentage of known information questions was considerably greater with 51% while other types of questions constituted the remaining 49% (1983: 278). Contrastingly, in informal conversations with non-native speakers hardly any display questions were applied by native speakers (1983: 278). In the data set only two known information questions out of a total amount of 1,322 questions were posed by native speakers (1983: 278).

In addition to these findings, Long & Sato observed another difference concerning the utterances of ESL teachers and native speakers. The percentage of referential questions was considerably higher in informal talk of native speakers with non-natives with 76% (1983: 278). ESL teachers, on the other hand, asked only 128 referential questions out of a total of 938 questions (1983: 278). Thus, the proportion of information seeking questions was significantly lower with about 14% in the ESL teachers' talk.

However, it has to be kept in mind that classroom conversation should be considered dissimilar to other interactions as argued by Mehan (1979). He claimed that "conversations in the classroom have unique features" (1979: 294), a view which was also held by Breen & Candlin (1980, referred to in Cullen 1988: 182). They pointed out that a comparison of classroom talk with other types of discourses would discount that "the classroom is a unique social environment with its own human activities and its own conventions governing these activities" (Breen & Candlin 1980: 98, quoted in Cullen 1998: 182).

Although remarkable differences between ESL instructor talk and native speaker speech with regard to the amount of questions and types of interrogatives asked could be observed, the uniqueness of the classroom discourse should be kept in mind. Thus, some scholars implied that a comparison of classroom talk with other discourses might not be necessarily appropriate.

3.3.5. Teacher questions and students' language levels

This section of the chapter will discuss the relation between teacher questions and learners' different proficiency levels. At this point it has to be mentioned that very few studies have been conducted on this aspect of teacher questions and thus, findings are fairly limited in this regard.

Concerning the open or closed nature of questions, Ellis (1985d) suggested that in the observation of one teacher "no difference in the use […] of open and closed questions with two learners over a nine month period" could be identified (1985d, referred to in Ellis 1994: 590). Nevertheless, he observed that "the cognitive complexity of the questions changed, with more questions requiring some form of comment as opposed to object identification evident at the end of the period" (1985d, cited in Ellis 1994: 590). Due to this data, it could be inferred that the teacher posed more cognitively challenging questions in the higher proficiency level than in the lower one in Ellis' study (1985d).

In addition to the changing cognitive level of questions across different language levels, White observed alteration regarding the distribution of display and referential questions in lower and higher proficiency levels (1992, referred to in Ellis 1992: 590). However, he pointed out that his results were rather inconclusive. In White's analysis one teacher applied more referential questions in the higher level and more display questions in the lower level, while the second instructor raised more display questions in the higher grade and a greater amount of referential questions in the lower grade (1992, cited in Ellis 1992: 590-591). Hence, observations concerning the relationship between language level and the proportion of known information or information seeking questions did not provide clear results.

Overall, researchers could not demonstrate whether open or closed questions, referential or display questions are favored by teachers at different proficiency levels. Nevertheless, one study showed that teachers tend to ask more cognitively demanding questions in higher language classes.

3.3.6. Teacher questions and their effects on students' responses

This part of the chapter will review literature focusing on the consequences that certain types of teacher questions might have on learners' answers. Various effects on learners' replies could be identified in different studies.

Brock claimed a direct link between the length of students' responses and the type of teacher question asked (1986). In her study she discovered that the average length of answers to referential questions was more than twice as long than replies to display questions (1986: 54). While average answers to referential questions comprised 10.00 words, responses to display questions usually consisted of 4.23 words (1986: 54).

These results are congruent with Shomoossi's data (2004). He also focused on the length of students' answers and illustrated that the mean amount of time used for answering referential questions by learners was significantly longer than for display questions (2004: 99). However, Shomoossi pointed out that not all information seeking questions required long answers as he exemplified with the following questions from his data: *Where do you live?*, *What's your father's job or name?*, or *What page is it?* (2004: 100). As a consequence, he indicated that "[m]ost, not all, referential questions create more interaction in the classroom than display questions do" (2004: 100).

Ernst's results from an observation of elementary ESL lessons provided insights concerning the effects of display questions (1994). She discovered that learners' responses to display questions were usually short (1994: 315). These findings were in accordance with Farahian & Rezaee's analysis whose data also indicated that known information questions typically produced answers with three or less words in them (2012). Their data showed that in five lessons the percentage of responses to display questions which were longer than three words was never over 21% (2012: 164). The proportion of answers consisting of more than three words was even lower in Yang's study in three secondary school EFL lessons in Hong Kong (2010: 14). However, it has to be kept in mind that display questions could produce longer answers as well as pointed out by Shomoossi (2004: 101). Nevertheless, the aforementioned results showed that on average display questions caused short answers.

Contrasting to Brock's and Shomoossi's beliefs about referential questions and their effects on the length of students' responses, Yang claimed that there is no necessary relation between referential questions and longer answers (2010). In one of her observed lessons a high proportion of answers to questions with the authentic purpose of acquiring new information triggered responses "only slightly longer in length than those produced by display questions" (2010: 18). Therefore, she claimed that "we should not be too absolute to suggest that there is a positive correlation between asking referential questions and students' production of target language" (2010: 20). Due to her results concerning answer lengths' for known information questions, she suggested "a negative correlation between asking display questions and the length of students' responses" (2010: 20).

Yang's findings concerning referential questions were congruent with Farahian & Rezaee's analysis concerning information seeking questions (2012). Their data indicated that open/referential questions were predominantly answered with responses comprising of three or less words (2012: 164). The percentage of replies consisting of more than three words was surprisingly low in all 5 lessons they analyzed (2012: 164). In their data the proportion of answers to open/referential questions with three or less words varied between 95.6% and 100% (2012: 164). Thus, their findings also refuted the claim that on average all referential questions cause longer responses as already suggested by Yang (2010).

In addition to the findings concerning the mean sentence length of students' replies, examination of data provided a connection between type of question and complexity of the answer. Brock's analysis of responses indicated that known information questions elicited simpler sentence structures than information seeking questions (1986: 55). In her data answers to referential questions were more than twice as complex than replies to display questions (1986: 55). Ernst, who also studied the structure of students' verbal reactions to display questions, pointed out that "when the teacher asked display questions, students' responses were brief, mere repetitions and with little elaboration" (1994: 315).

At variance with Brock's observations were Yang's findings (2010). Yang argued that a large proportion of "responses [to referential questions] were rather simple without giving more elaboration" (2010: 18). She exemplified this by the answer *I think boring. I think it is so boring* to the information seeking question *Why don't you like going to the beach?* and the

response *The water is clean* provided for the referential question *Isaac, you said Clear Water Bay (is the best beach in Hong Kong). Why?* (2010: 18). In her study Yang proposed the same reason affecting sentence length and complexity as already pointed out by Smith & Higgins who argued that the teacher's reaction to the learners' answers might influence students' responses (2006, referred to in Yang 2010: 18). Yang demonstrated this connection by indicating that yes/no questions which were followed by clarification requests "made the students expand on their responses and produced longer responses" (2010: 18).

Dalton-Puffer, however, discovered a different reason for the varying structural density and amount of words in learners' replies (2007). In her opinion, the belief that referential questions produce longer and structurally more difficult answers was incorrect (2007: 124). She pointed out that the length and complexity of responses depended on the open or closed nature of questions as could be observed in her CLIL data (2007: 124). Her findings showed that closed questions produced shorter and more simplex answers than questions with an open character (2007: 124).

Dalton-Puffer's results were in accordance with Musumeci's who also argued that not the information status of the questioner influenced the responses but the differentiation between open and closed types of questions (1996: 307). Thus, whether the reply to a known information or information seeking question is short or long, simplex or complex depends on the closed or open character of the interrogative, according to Dalton-Puffer (2007) and Musumeci (1996).

Overall, Brock (1986) and Shomoossi (2004) argued that on average responses to display questions tend to be shorter than answers to referential questions. This claim could not be completely supported by Yang (2010) and Farahian & Rezaee (2013) who indicated in their observations that the mean length of replies to authentic questions was not significantly longer than those to display questions. In addition to the findings about sentence length, it was argued that referential questions produced structurally more complex answers than display questions (Brock 1986, Ernst 1994). However, Yang's, Dalton-Puffer's, and Musumeci's findings pointed out that this might be an inaccurate claim. Yang's results showed that the teacher's reaction concerning a reply affects the length and complexity of a learner's answer while Dalton-Puffer's and Musumeci's data suggested that the concept of

openness or closedness of a question should be considered as an influencing aspect in this regard.

3.3.7. Benefits of certain question types

This section will discuss particular kinds of questions and their advantages in the classroom. First of all, the positive attributes of yes/no questions will be considered, and then there will follow an analysis of open/referential questions, closed/display questions, and personalized questions.

Regarding yes/no questions, Gower et al. (1995) indicated these advantages:

> It is sometimes pointed out that yes/no questions are generally easier for learners to answer, and that teachers can therefore direct those questions at weaker learners, or use yes/no questions to check basic understanding of a text or situation before moving on to *wh*- questions to elicit more detailed information. (Gower et al. 1995: 139, referred to in Thompson 1997: 100-101)

In addition to these benefits that discuss the basic level of difficulty of yes/no questions, their function of checking general comprehension, and their appropriateness for weak learners, Thompson's pointed out that they can help shyer students to become an active part in classroom interaction (1997: 101). Due to them answering yes/no questions, the likeliness that inhibited students respond to follow-up questions is increased as argued by Thompson (1997: 101).

As far as open/referential questions are concerned, Yang claimed that by asking referential questions teachers facilitate the language proficiency of their learners by providing a "less controlled but contextualized practice" (2010: 19). Another advantage which Shomoossi showed in his study was that on average referential questions produced more and less constrained classroom interaction in comparison to display questions (2004: 99-100).

Furthermore, Cullen argued that a positive characteristic of information seeking questions is that they provide a communicative purpose which is missing in known information questions where the students' comprehension or knowledge is tested by the teacher (1998: 181). Dalton-Puffer maintained this belief when she stated that referential questions provide an

authentic purpose of acquiring new knowledge from the interlocutor (2007: 95-96). This view is also pointed out by Ho:

> Referential or open questions […] are questions that are not factual or text-embedded but […] invite students to draw answers from their own experiences and viewpoints. This would mean longer, more communicative responses similar to genuine communication. (2005: 299)

Concerning display questions, scholars identified various advantages. Shomoossi argued that display questions "can encourage language learners, especially beginners, to get interested" (2004: 102). These findings are in accordance with Fakeye's who studied teacher questions in secondary school ESL lessons in Nigeria (2007). Fakeye observed that display questions produced more classroom interaction among junior students than referential questions (2007: 130). Therefore, he claimed that it is advisable to use display questions in lower proficiency classes due to their positive influence on classroom interaction while referential questions should be applied at higher levels (2007: 131).

Moreover, Ho pointed out that one function of closed and display teacher questions in her study was to discover whether students understood the main ideas in a reading passage (2005: 308). She claimed that due to the students' answers the teacher could decide whether to continue or not (2005: 308). Ho suggested that "[l]ooking at it from this viewpoint, the questions do make sense and is [sic] therefore purposeful, as far as learning within the institution is concerned" (2005: 308). Therefore, in Ho's opinion "questions that are claimed to be closed and therefore pedagogically purposeless, […] serve a purpose within its overall agenda and learning goals" (2005: 309).

In addition to these positive aspects of display questions, Dalton-Puffer pointed out the following benefit of known information questions: "[Display questions] enable the student to make a contribution to the shared construction of a proposition which it [sic] would be beyond an individual student's capacity to construct by herself or himself" (2007: 94-95). Furthermore, Dalton-Puffer referred to Wells (1993: 27) when she claimed that "display questions serve to establish an agreed account of events witnessed by the participants in the classroom" (2007: 95).

Thus, these positive attributes of display questions demonstrate that both, referential and display questions, are important in the language classroom and do not indicate a superiority

of referential questions over display questions as, for instance, Brock (1979) suggested. Shomoossi's observations showed that both types of questions are useful in the appropriate environment and that "[e]ach context requires an appropriate strategy for itself" (2004: 102-103). This view is also held by Dalton-Puffer who claimed the following:

> [D]ata should prevent us from developing an over-simple understanding of classroom language as being divided between 'natural, authentic and open-ended' referential questions on the one hand, and 'unnatural, artificial and closed' display questions on the other. (2007: 124)

Hence, the value of the display question should not be left unappreciated because of its referential counterpart. Both of them could be used for different purposes and contexts.

As far as personalized questions are concerned, Thompson's positive appraisal of them is expressed in the following statement:

> Most teachers are now aware of the advisability of personalizing at least some of the questions that they ask, inviting their learners to talk about themselves rather than only talking about information provided by the textbook. One great advantage of this is that it allows the learners to have some degree of control over the input, which may well lead to increased motivation and more investment by the learners in the learning process. (1997: 101)

Thus, in Thompson's opinion teachers should also keep in mind the positive effects of questions about the learner him/herself and should try to personalize some questions for the students in the classroom in order to involve them in the lessons.

Overall, it seems that each question type has its potential advantages in the classroom. As a consequence, scholars suggested that different types of questions should be applied by the teacher because of a variety of purposes, contexts, and participants in the classroom discourse.

3.3.8. Display questions and cultural background

This part of the chapter will present the role of the socio-cultural context in connection with the application of closed/display questions in the classroom.

Poole proposed a link between the deployment of closed/display questions and the "caretaker practices evident in white, middle-class western society" (1992, referred to in Ellis 1994: 592). According to Poole, "[t]eachers from such a background ask questions because they

provide a means by which an expert (the teacher) and a novice (the learner) can jointly construct a proposition across utterances and speakers" (1992, quoted in Ellis 1994: 592). Thus, the strong presence of display and closed questions in classrooms might be caused by the socio-cultural background that shaped the participants in this type of discourse as Poole suggested (1992, cited in Ellis 1994: 592). It has been observed that display questions with pedagogical objectives are typical for primary socialization and hence, Poole pointed out that "important cultural predispositions underlie its persuasiveness" (1992: 600, quoted in Dalton-Puffer 2007: 94).

Due to the teachers being accustomed to this practice and having experienced it themselves in this context, it would probably require considerable effort for them to cease asking such types of questions (Poole 1992, referred to in Ellis 1994: 592). Since they have grown up in this particular background, teachers would also believe that they are entitled to such practices as Poole argued (1992, quoted in Ellis 1994: 592). Hence, classroom interaction without these known answer questions would probably be difficult for them to accept and to facilitate.

Thus, in white western middle-class the presence of display and closed questions in the school setting is due to the socio-cultural background. However, this would also mean that in societies where different caretaker practices are employed display and closed questions might not be "the norm in the classroom" (Ellis 1994: 592), although no evidence supporting this assumption could be obtained so far.

3.3.9. Teacher training regarding question strategies

This part of the chapter will discuss opinions and suggestions of scholars concerning the coaching of teachers' questioning techniques. Various studies and researchers have provided interesting insights concerning this matter.

Brock, who examined the connection between student responses and teacher questions in ESL lessons, incorporated teacher training in her study (1986). She divided the ESL teachers into two groups, a control group and a treatment group, and prepared the treatment group with regard to questioning strategies (Brock 1986: 51-52). This training focused on helping teachers to distinguish between display and referential questions and provided support

concerning the forming of referential questions (1986: 52). Her results showed that the treatment group provided a significantly high amount of referential questions (173) out of a total of 194 questions (1986: 53). In comparison to that, the control group teachers only asked 24 information seeking questions out of 141 questions (1986: 53). Hence, from Brock's analysis it can be seen that teacher training concerning questioning techniques can be successful.

In addition to this, Koivukari indicated that teacher preparation regarding questioning strategies "led to teachers using more 'deep' comprehension questions and fewer superficial rote questions" (1987, referred to in Ellis 1994: 591). Moreover, the instructors' training influenced the learners' skills as well as pointed out by Koivukari (1987). The researcher claimed that in the data "an experimental group who benefited from this treatment showed improved comprehension scores" (1987, cited in Ellis 1994: 591).

Overall, many scholars, for example, Thompson (1997), Yang (2010), or Meng et al. (2012) argued for more teacher training concerning interrogative techniques. Thompson suggested helpful guidelines for future teachers for developing effective questioning strategies in his article (1997). He provided theoretical background by providing a classification system for teacher questions according to purpose, content, and form "in order to help trainees understand, in a systematic way, what options are open to them" (1997: 99). His categorization of questions aimed at "help[ing to] sensitize trainees to what they are actually doing with their questions, and what else they might be doing" (1997: 99). Furthermore, he offered insights regarding question devising and identified the need for a discussion about the usefulness of various question types (1997: 103). In addition to this, he showed that suitable acknowledgments of the learner's response can be used as a way of obtaining more interaction or elaboration (1997: 104).

Yang argued that trainee teachers should experience more coaching with regard to questioning techniques in their preparation courses (2010: 18). Meng et al. recommended that teacher training programs should include strategies such as applying different kinds of modification techniques for questions which elicit no replies from the learners in their curriculum (2012: 2608).

This section discussed the importance of teacher training with regard to asking questions and pointed out that this should be an essential part of the teacher trainee curriculum. Moreover, it was shown that teacher training in the domain of questioning techniques can be effective and can influence the cognitive skills of learners in a positive way.

3.3.10. Wait time

This part of the chapter will present findings concerning the time span teachers allow students for answering their questions.

White & Lightbown showed that teachers favor immediate replies to their questions addressed to the learners (1984, cited in Ellis 1994: 589). As a consequence, it became apparent in their data that students were not granted sufficiently long pauses before answers were expected from them (White & Lightbown 1984, quoted in Ellis 1994: 589). Instead of providing the interlocutors with enough time to produce a response, the teacher either nominated another learner to answer the question or simply repeated or rephrased it (White & Lightbown 1984, referred to in Ellis 1994: 589-590).

Shomoossi who also analyzed the wait time teachers permitted students for generating a response claimed that in his study teachers preferred to paraphrase a question when met with a longer silence by the student who was addressed with it (2004: 101). Hence, in Shomoossi's data rephrasing the whole interrogative for the same or another learner was the more common method the teacher resorted to in case of the absence of an immediate answer (2004: 101). The technique of repeating the whole question to the learners was not as strongly favored (2004: 101). Although rephrasing might at first be considered as creating additional wait time, Shomoossi regarded it as "pseudo-wait time" in his discussion (2004: 101). Overall, Shomoossi argued that "lack of wait time is often observable" and claimed that this was primarily observable with display questions in his research "to which the teachers do expect a short answer at least" (2004: 101).

Furthermore, Shomoossi pointed out that paraphrasing a question after a student failed to provide an answer in the allocated time span achieved longer replies than repeating the whole interrogative did (2004: 101). He also pointed out that "[if] a certain question is asked several

times, students lose their interest in it. It becomes boring, and discourages any motivation to continue" (2004: 102).

White & Lightbown noted that "[t]he shorter the wait time, however, the fewer and the shorter the student responses" (1984, cited in Ellis 1994: 590). Hence, it seems the less patient the teachers are the less productive their students are with regard to their replies. In accordance with White & Lightbown's findings were Rowe's observations which showed that the lengths of the responses increased significantly when the learners were granted adequate time for contemplating the teacher's questions (1986:44). Rowe claimed that a period of silence of three or more seconds would provide the learner with enough time for considering the question and producing a reply (1986).

Thus, findings indicate a lack of sufficient wait time teachers allowed their students for responding to questions. Teachers prefer instant replies from their learners, otherwise the questions are rephrased, repeated, and/or addressed to another student in the classroom. Furthermore, wait time and whether an already posed question is paraphrased or just repeated when the students initially face difficulties answering it also affect the reply. Teachers should allow students at least three seconds for pondering over a question before expecting a response.

4. Research design and method

As discussed in the previous chapter, many studies on questions in the language classroom have been conducted. Those focused on diverse aspects and characteristics of questions in the schoolroom. However, scarcely any research was undertaken concerning teacher questions across different proficiency levels of students. Therefore, the aim of this study is to examine the distribution of teacher questions with regard to their openness/closedness, the information status of the questioner, and the type of knowledge addressed by the interrogatives in a representative sample of EFL and CLIL lessons of varying language skill levels. To this end, Dalton-Puffer's question typology was chosen as the framework for examining teacher questions in this research project. The following subchapters will provide detailed information about the data which was obtained for this study and the method which was applied for the analysis.

4.1. Participants and settings

The selected participants of this study were three Austrian non-native English teachers (one male and two females). All three of them had experience in teaching EFL in secondary school institutions in Vienna. None of them was aware of the research subject throughout the process of the data retrieval.

One of the female teachers (T1) taught in a secondary school with a special focus on economics and tourism (HLW). For this study EFL lessons which she gave in her grade 11 in the incorporated BMS school branch of the institution were selected. The students in the class were between 16 and 17 years old. The pupil number varied between 15 and 16 with a constant number of 5 male participants. The students had been studying English for a minimum of seven years, however, their language skills were described as located below the expected proficiency level by their teacher (T1). The lessons were taped at the beginning of December in 2014.

The male teacher (T2) was employed at the same school as T1. The data used for this study were EFL sessions he taught in a grade 12 (HLW). All students in this class were female and during the data collection the number of pupils fell from 15 to 12 participants. The students had all been studying English for 8 years or longer. The data was collected at the end of November in 2014.

T3 was a female teacher in a secondary school with an emphasis on business management training (HAK). The sessions which were analyzed for this study were from her grade 12 CLIL class. Unfortunately, the number of students and the distribution between sexes remained unknown to the researcher. The taping of the lessons happened at the end of November in 2001. All the students who participated in this class had received EFL training for a minimum of eight years.

4.2. The data

The data for the present study has to be described in more detail with regard to the way it was collected for this research. The lessons by the teachers T1 and T2 were recorded via audio-taping by the researcher herself. Afterwards, these sessions were transcribed with a

focus on whole class teacher-student interactions. Side talk between students or between a student and the teacher was dealt with only when the interactions where audible and comprehensible on the recordings, for the sake of completeness.

The remaining data from the third teacher, T3, was not gathered by the researcher herself but was chosen from an already existing data pool provided by the supervisor of this study. Only whole class teacher-student interactions in the transcripts of these lessons were considered for the analysis.

4.2.1. Data by T1

In this subsection, I will give a comprehensive description of the content of each session by T1. The three lessons held by T1 were subsequent EFL lessons. They will be systematically named EFL1.1, EFL1.2, and EFL1.3, according to their chronological order.

At the beginning of the first lesson (EFL1.1), 16 students (11 females, 5 males) were present. After a few minutes of class time one female student left the room. The topic of the lesson was the human brain. The teacher started the session by discussing a text about brain development with the students, and then elicited information about ways to enhance and train brain capacity from them. Thereafter, they continued with reading further passages from a text which dealt with the differences between girls' and boys' brains and illnesses that can affect the brain. Next, they listed factors that influence the brain in a positive way, such as a healthy diet, sports, or brain exercises. Afterwards, the students were asked to brainstorm and produce a mind map about brain fitness. The last activity was a gap-filling task about brain disorders which focused on vocabulary. Total class time of EFL1.1 was 45 minutes and 52 seconds.

In the second lesson (EFL1.2.) by T1, 16 students (11 females, 5 males) participated. At first, the teacher dealt with some administrative issues, and then started a writing activity where questions were framed by the teacher about the human brain, the topic of the previous session. The aim of this task was for students to provide the responses to the teacher questions and to note down everything. Afterwards, the teacher started a brainstorming activity about the

subject of teeth where students could present their already existing knowledge concerning this subject matter. The whole lesson (EFL1.2) lasted 41 minutes and 33 seconds.

In the third English session by T1 (EFL1.3), 15 students (10 females, 5 males) were present. First of all, the teacher talked about grades and oral exams with the students. Following this procedural talk, the class compared their homework about the nervous system. Then they read and discussed texts about the topic of teeth. Total class time of EFL1.3 comprised 44 minutes and 27 seconds.

4.2.2. Data by T2

This section will provide a detailed account of the two lessons held by T2. T2's EFL lessons, which were recorded within one week, will be categorized according to the chronology of their taping as EFL2.1 and EFL2.2.

In the first lesson, EFL2.1, 15 students (all female) were present. The teacher started the lesson by discussing a handout about the structure of texts with the pupils. Then they looked at a blog entry about the recent death of a famous aristocrat and a comment which was posted as a response to it and analyzed the texts with regard to style, register, vocabulary, etc. Next, they talked about the students' opinions concerning the information conveyed in them. Thereafter, the students were asked to write a reaction dealing with the blog and its comment. The whole lesson ended after 47 minutes and 4 seconds.

12 female students participated in the second session by T2, EFL2.2. The class was initiated by procedural talk about a class trip and was followed by a review of a passage from the book *Different Seasons* by Stephen King. Then the class finished watching a video about plastic surgery from a previous lesson. Afterwards, the content of the video was used for a discussion about the controversial topic of beauty. The teacher had prepared various quotes and questions about beauty and plastic surgery for this task. A pair activity about vocabulary where students had to find synonyms for the adjectives 'beautiful' and 'handsome' followed the debate. Next, the teacher briefly told the class about their homework. Total class time of EFL2.4 accounted for 50 minutes and 28 seconds.

4.2.3. Data by T3

This section will provide a description of the content of the lessons held by the third teacher, T3. The lessons selected for this research project were two subsequent History lessons taught through the medium of English, so-called CLIL sessions. They were named CLIL1.1 and CLIL1.2, according to their chronological order. The number of students, the distribution of sexes, and the lengths of the individual classes were unknown to the researcher.

T3 started CLIL1.1 by distributing the graded History test from a previous lesson. Afterwards, all the test questions were discussed with the whole class. Then the teacher initiated a new topic, trenches in the First World War (WW1), by handing out various reports about the soldiers' lives in trenches. The students had to read the passages, choose a suitable headline, and discuss the content in pairs or groups. This task was followed by short group presentations on the information found in the extracts. Following this task, the class spoke about the different sources of these texts and other facts concerning the WW1 such as enemy parties and locations involved in this conflict.

At the beginning of CLIL1.2, procedural talk about school books was on the agenda. Then the teacher asked students to recapitulate the content of the previous lesson about the trenches in WW1. Next, the teacher proceeded by discussing a text about the Schlieffen Plan objectives with the class, and subsequently asked the students to silently read a passage from the book *Im Westen nichts Neues [All Quiet on the Western Front]* by Erich Maria Remarque. Pupils should then summarize the text in pair work and one student was asked to present an outline to the whole class. Afterwards, the teacher showed the students a war scene picture by Otto Dix and the class had to describe and interpret it. The lesson ended with an introduction of a new topic concerning the role of women in the economy during WW1, an activity which was guided by teacher questions and another picture.

4.3. Data analysis

For the data analysis all teacher questions from the instructional register were examined. Thus, not only interrogatives but also utterances ending with a rising intonation which clearly aimed at eliciting information from students were included, as suggested by Banbrook (1987,

referred to in Yang 2010: 9). Any questions from the procedural domain were neglected in this research project because the researcher's focus was not on administrative questions which concerned classroom management but on questions which dealt with language or learning.

In addition to the omission of administrative teacher questions, questions from the instructional domain which served as comprehension checks or asked for clarification or confirmation of information regarding the students' previous utterances were not taken into account either. The reason for this approach was that an analysis of these interrogatives would not have contributed any useful insights with regard to the objectives of this study since these types of questions are resorted to in order to manage and mediate classroom interactions and do not actually focus on language learning. Concerning the medium in which the questions were delivered, teacher questions from both classroom codes that were present during class time were included in the examination because many questions displayed a mixed language character.

As far as the purpose of the research project was concerned, three hypotheses were tested in the analysis:

> **Hypothesis 1 (H1):** There is no difference concerning the application of open and closed questions across different proficiency levels in EFL and CLIL classes.
>
> **Hypothesis 2 (H2):** There is no clear connection between the distribution of referential and display questions and varying language levels in EFL and CLIL classes.
>
> **Hypothesis 3 (H3):** Teachers apply more questions which are cognitively demanding in higher skills EFL and CLIL lessons than in lower ones.

These three assumptions were based on studies from Ellis 1985d and White 1992 which have been discussed in a previous section (for more information cf. section 3.3.5.).

In order to test the accuracy of these hypotheses, teacher questions from the EFL and CLIL lessons were categorized according to Dalton-Puffer's taxonomy. Throughout the analysis all teacher questions were coded with regard to their form (open/closed), the information status of the questioner (referential/display), and the type of knowledge targeted in them

(fact/ explanation, reason, opinion/meta-cognitive/inner state, emotion). With regard to the open/closed distinction, only questions which could be answered with yes/no, true/false, and interrogatives which conveyed a multiple choice format were considered as closed questions in the study.

After the examination and comparison of the individual EFL and CLIL lessons, the results concerning the classification of teacher questions in EFL and CLIL lessons were then contrasted with the findings of a prior study by Broidl who focused on teacher questions in lower EFL and CLIL levels (2014) (for a more detailed account of this cf. section 3.3.3.). In the comparative analysis of the results of the former and the present study, the data sets from the study by Broidl (2014), English and Biology (CLIL) lessons given by a female non-native English teacher in an 8th grade of a NMS in Burgenland in March 2012 and gathered by Kornfeld (2012), were labelled EFL0.1, EFL0.2, EFL0.3, and CLIL0.1, CLIL0.2, CLIL0.3 and the teacher was called T0.

5. Results and findings

This chapter will provide an overview of the data collected in the individual EFL and the CLIL sessions. It will start with the findings from all EFL lessons by the female teacher who taught the 11th grade (T1) and will be accompanied by a comparison of these sessions (EFL1.1, EFL1.2, and EFL1.3). Furthermore, an average distribution of teacher questions regarding the three categories open/closed, referential/display, and content (fact/opinion, reason, explanation/meta-cognitive/inner state, emotion) in the classes by T1 will be presented. Then the same procedure will be conducted with the 12th grade EFL lessons by T2 (EFL2.1 and EFL2.2). Afterwards, there will follow a comparative analysis of the EFL lessons taught by these two teachers (T1 and T2).

The second part of this chapter will focus on the 12th grade CLIL sessions. First, the lessons CLIL1.1 and CLIL1.2 will be examined individually. Then the findings in CLIL1.1 and CLIL1.2 will be contrasted and general findings concerning the mean allocation of teacher questions in the classes by T3 will be conveyed. At the end of the chapter, an overall comparison of teacher questions posed by T1, T2, and T3 will be drawn. The EFL and CLIL

results will then be compared to the data from Broidl's earlier study (2014) in the subchapters 6.4. and 6.5.

5.1. Findings from the EFL lessons

The following section will first discuss the distribution of teacher questions in the EFL lessons by T1. Then the classes held by T2 will be reviewed and a comparison of the lessons by the two teachers will be conducted.

5.1.1. EFL lessons by T1

Table 1 shows the categorization of teacher questions concerning the scope of freedom included in the question as regards the answer (open/closed), the information status of the questioner (display/referential), and the type of knowledge gained by asking the question (fact/opinion, reason, explanation/meta-cognitive/ inner state, emotion) in the three EFL lessons (EFL1.1, EFL1.2, and EFL1.3) by T1.

Table 1: Distribution of teacher questions in EFL lessons by T1

	EFL1.1	**ELF1.2**	**EFL1.3**
Open - closed	82 – 24 (77.36% - 22.64%)	78 – 11 (87.64% - 12.36%)	70 – 14 (83.33% - 16.67%)
Referential - display	8 – 98 (7.55% - 92.45%)	17 – 72 (19.1% - 80.9%)	11 – 73 (13.1% - 86.9%)
Fact - opinion/explanation/ reason - meta-cognitive - inner state/emotion	73 – 33 – 0 – 0 (68.87% - 31.13% - 0% - 0%)	48 – 41 – 0 – 0 (53.93% - 46.07% - 0% - 0%)	64 – 20 – 0 – 0 (76.19% - 23.81% - 0% - 0%)
Total number of questions	106	89	84

Overall, the highest number of teacher questions in the instructional register could be identified in EFL1.1 (106 questions) (Table 1). In EFL1.2 89 teacher questions were observed which did not concern any administrative or procedural matters (Table 1). The lowest amount of questions phrased by the teacher in the register concerning educational issues was detected in EFL1.3 (84 questions) (Table 1).

In Table 1 it can be seen that the proportion of open questions was significantly higher in EFL1.1 with 77.36% than the number of closed interrogatives. Only 24 out of a total amount of 106 teacher questions from the instructive domain were of closed form (22.64%) (Table 1). Examples of open formed questions in EFL1.1 were *What does the brain do?*, *What is a concussion?*, and *What is healthy food?*. The teacher questions *Has it [the brain] finished developing?*, *Does that mean they [boys] are smarter?*, and *Is doing sports good for your brain?* were instances of interrogative utterances in EFL1.1 which could be answered with yes/no or true/false.

In the second lesson by T1, EFL1.2, the proportion of closed questions accounted for 12.36% of all teacher questions (Table 1). Thus, the share of open format interrogatives was substantially higher with 87.64% in EFL1.2 (Table 1). *How do brains develop?*, *What happens in your teenage years [with the brain]?*, and *What can go wrong with the brain and what are the consequences?* exemplify typical open questions in EFL1.2 while *Do you take more risks than adults?*, *Do you have good teeth?*, and *Do you already have a lot of fillings?* are a sample of closed questions taken from this class.

In EFL1.3 the share of open questions constituted 83.33% of all teacher questions while only 14 out of 84 were of closed character (16.67%) (Table 1). Instances of open teacher questions in EFL1.3 would be *What are the parts of the nervous system?*, *Why do we call it the nervous system?*, and *What is digestion [in German]?*. The following questions in EFL1.3 could be identified as closed interrogatives: *Is it [the nervous system] nervous?*; *[…] so it sends the […] messages only from the body to the brain?*; *Do you use your toothbrush forever?*.

As could be seen in Table 1, the proportion of open formed questions was highest in EFL1.2 with 87.64%, followed by EFL1.3 with a decreased share of 83.33%. The lowest percentage of open teacher questions could be identified in EFL1.1 with 77.36% (Table 1). Hence, the proportion of closed questions varied by approximately 10% in the classes given by T1 (Table 1).

Regarding the primary and secondary knower status in EFL1.1, a vast majority of display questions could be noticed (Table 1). The share of test questions dominated EFL1.1 with 92.45% (Table 1). Out of 106 teacher questions only 8 were of referential character and thus, possessed the purpose of an authentic question, namely obtaining new information (7.55%)

(Table 1). *Do you […] think that's true?*, *Well, do you have an electric toothbrush?*, and *Okay, does anybody know some exercises to train your brain?* could be recognized as information seeking questions in the transcription of EFL1.1. Interrogatives such as *What is impulsive?*, *So what is 'Attention Deficit Disorder', 'ADD' [in German]?*, and *How heavy is the brain?* would be representatives of display questions in EFL1.1.

In EFL1.2 a substantial portion of teacher questions were known information questions in nature since the ratio of display to referential questions was approximately 4 to 1. Out of a total number of 89 teacher questions in the instructional register, 72 test questions were raised by the instructor (80.9%) while only 17 information seeking questions could be detected (19.1%) (Table 1). The following interrogatives were classified as examples of display questions in EFL1.2: *What are the effects that a teenager's brain is not fully developed?*, *Which kind of cells?*, and *What are the differences between girls' and boys' brains?*. The questions *How do you put soap on your legs?*, *X, do you have good teeth?*, and *Do you already have a lot of fillings?* convey a sample of referential questions from this lesson.

A major share of teacher questions in EFL1.3 was also recognized as display questions (86.9%) (Table 1). 13.1% of all 84 teacher questions were identified as information seeking questions in EFL1.3 (Table 1). Instances of referential questions in EFL1.3 would be *How did it go [brushing your teeth with the wrong hand]?*, *Did you fall [while showering with your eyes closed]?*, and *Do you do that [go to the dentist at least twice a year]?*. *What does the nervous system do, X?*, *What is the spinal cord?*, and *[…] 'H_2O' is what [in German]?* exemplify known information questions in EFL1.3.

When comparing the results between the three sessions by T1, the greatest share of display questions could be noticed in EFL1.1 with 92.45% (Table 1). Whereas 80.9% of the teacher questions in EFL1.2 were test questions, the percentage was higher in EFL1.3 with 86.9% (Table 1). Therefore, in EFLl.2 the teacher raised more than twice as many referential questions (19.1%) than in EFL1.1 (7.55%) (Table 1). The percentage of questions characterized by the genuine function of obtaining new information in EFL1.3 was lower by 6% compared to EFL1.2 (Table 1).

Concerning the type of information elicited by teacher questions in EFL1.1, a great percentage of questions asking for factual knowledge was observed (Table 1). The proportion

of fact questions comprised 68.87% in EFL1.1 while only 33 out of 106 teacher questions aimed at opinions, reasons, or explanations (31.13%) (Table 1). Furthermore, no meta-cognitive questions or questions about inner states and emotions could be identified in EFL1.1 (Table 1). Examples of fact questions in EFL1.1 would be *[…] what causes meningitis and encephalitis?*, *Your brain is shaking in your what?*, and *Does the tick crawl in your head?*. Instances of non-factual questions which focused on explanations and reasons in EFL 1.1 were *How does the brain know which things it doesn't need?*, *Was ist eine Gehirnerschütterung [Was passiert bei einer Gehirnerschütterung - What happens to your brain during a concussion]?*, and *Why else is it [doing sports] good for you?*.

Concerning the distribution of fact and non-fact questions in EFL1.2, 48 out of 89 teacher questions addressed factual knowledge (53.93%) (Table 1). The number of questions obtaining opinions, reasons, and explanations was smaller with 41 occurrences (46.07%). Whereas *How often [should you brush your teeth]?*, *How many teeth do you have?*, and *Okay, and when do we get the baby teeth?* were examples of fact questions in EFL1.2, *How do brains develop?*, *How can you keep your brain exercised?*, and *Why is it important for teenagers to keep their brain healthy?* were questions which asked for explanations or reasons in this lesson. No meta-cognitive interrogatives or questions about personal states and emotions were posed in EFL1.2 (Table 1).

In EFL1.3 more than three-fourths of all questions could be identified as fact questions (76.19%) (Table 1). The share of questions about opinions, explanations, and reasons was substantially lower with 23.81% (Table 1). While the interrogatives *Why do we call it the nervous system?*, *Why do we have different types of teeth?*, and *And why do we call them wisdom teeth?* in EFL1.3 belonged to the opinion/reason/explanation question category, *What is the control center of the nervous system?*, *How much does a typical brain weigh?*, and *And how fast do these messages travel?* were classified as questions that elicited factual knowledge from students in EFL1.3. No questions aiming at personal feelings or emotions and meta-cognitive information could be discovered in EFL1.3 (Table 1).

Thus, in all three lessons fact questions constituted the majority of teacher questions (Table 1). However, the proportion varied significantly between 53.93% (EFL1.2) and 76.19% (EFL1.3) by about 22% (Table 1). As a consequence, the highest number of questions targeting opinions, explanations, or reasons could be recognized in EFL1.2 (46.07%) and the

lowest in EFL1.3 (23.81%) (Table 1). The number of non-fact questions in EFL1.1 was lower by nearly 15% when compared to EFL1.2. In none of the three lessons by T1 any questions about inner states or feelings or questions where students had to elaborate their perspective on certain matters could be observed (Table 1).

Overall, it could be said that the individual lessons by T1 differed most significantly with regard to the share of fact versus non-fact questions (Table 1). Dissimilarities concerning open/closed and referential/display questions could be demonstrated as well, albeit less remarkable ones.

Table 2 provides the results regarding the overall distribution of teacher questions in the three EFL lessons held by T1.

Table 2: Overall distribution of teacher questions in EFL lessons by T1

	EFL by T1
Open - closed	230 – 49 (82.44% - 17.56%)
Referential - display	36 – 243 (12.9% - 87.1%)
Fact - opinion/explanation/reason - meta-cognitive - inner state/emotion	185 – 94 – 0 – 0 (66.31% - 33.69% - 0% - 0%)
Total number of questions	279
Average number of questions	93

In the three EFL lessons given by T1 a mean amount of 93 teacher questions per session was posed (Table 2). As can be seen in Table 2, open format questions dominated in the sessions by T1 (82.44%). Only 17.56% out of a total number of 279 interrogatives by T1 were of closed character which constricted students to a narrow scope of possible responses (Table 2). Thus, the overall amount of open questions was nearly 5 times higher than the number of closed questions in the three EFL lessons by T1.

Furthermore, known information questions comprised the majority of questions in the sessions by T1 (87.1%). The percentage of information seeking questions was significantly lower with 12.9% (Table 2). Hence, a huge share of the questions asked by the instructor in the lessons EFL1.1, EFL1.2, and EFL1.3 were questions where she wanted to test the students' knowledge and comprehension of concepts discussed in class.

Table 2 also demonstrates that the average percentage of fact questions was greater than the mean proportion of questions concerning non-factual information. In the three lessons by T1 66.31% of all interrogatives were framed in order to address factual knowledge (Table 2). Only 94 out of a total number of 279 questions were eliciting explanations, opinions, or reasons from the class (33.69%) (Table 2). Furthermore, 0% of the 279 teacher questions concerned the students' personal feelings and inner states or targeted meta-cognitive information (Table 2).

5.1.2. EFL lessons by T2

In this section the individual lessons by T2 will be discussed with regard to their distribution of teacher questions. First, each session will be examined independently concerning each question category, followed by a comparison of the two lessons. Finally, a table will be presented which reviews the overall average findings in the classes held by T2.

In Table 3 the allocation of teacher questions in the individual lessons EFL2.1 and EFL2.2 is displayed.

Table 3: Distribution of teacher questions in EFL lessons by T2

	EFL2.1	**EFL2.2**
Open - closed	38 – 32 (54.29% - 45.71%)	55 – 21 (72.37% - 27.63%)
Referential - display	35 – 35 (50% - 50%)	45 – 31 (59.21% - 40.79%)
Fact - opinion/explanation/reason - meta-cognitive - inner state/emotion	40 – 28 – 2 – 0 (57.14% - 40% - 2.86% - 0%)	26 – 47 – 3 – 0 (34.21% - 61.84% - 3.95% - 0%)
Total number of questions	70	76

Overall, a greater number of teacher questions from the instructional register could be found in EFL2.2 (76 questions). A slightly lower amount of teacher questions regarding educational matters was encountered in EFL2.1 (70 questions) (Table 3).

It can be seen that the number of open form questions accounted for 54.29% out of a total amount of 70 teacher questions in EFL2.1 (Table 3). 32 questions in this sessions were characterized as questions of closed nature (Table 3). Thus, a lower percentage of questions

which could be answered with yes/no, true/false, or by choosing an option from a choice of responses could be noticed (45.71%) (Table 3). Instances of open questions in EFL2.1 were the following interrogatives: *What's the main point?*; *What does it mean 'she was one of a kind'?*; *How could we make the paragraph shorter?*. *Yes, is there somebody here who likes working with mind maps?*, *Is it helpful?*, and *Do you know the website?* exemplify closed teacher questions from EFL2.1.

In EFL2.2 72.37% of the teacher questions encountered in the instructional register were open such as the following instances *Okay, what happened?*, *[…] how could Tommy William know who killed Andy Defrayn's wife and her lover?*, and *What do you think about this?*. 21 out of 76 questions could be answered with yes/no or demonstrated a multiple choice format (27.63%) (Table 3). A sample of closed teacher questions from EFL2.2 are *[…] did no one get this information of the book?*, *You think so?*, and *Have you ever been to American Apparel?*.

Thus, in Table 3 it is shown that a higher percentage of open questions was found in EFL2.2 (72.37%). A remarkably greater proportion of closed questions was observed in EFL2.1 with 45.71% whereas in EFL2.2 the share of questions which could be answered with yes/no, true/false, or by selecting from a limited range of possible replies was smaller by approximately 18% (Table 3).

With regard to the knower status of the teacher and the pupils in class, half of all questions in EFL2.1 were identified as referential questions where the distinction between the primary and secondary knower became irrelevant (Table 3). Hence, 35 out of 70 teacher questions were test questions (Table 3). While *What is the level of formality?*, *[…] does the author refer to him or herself?*, and *Who is the target audience?* represent display questions from EFL2.1, *When did you get home on Saturday?*, *Have you heard about this [the death of the Duchess of Alba]?*, and *What's your opinion about her [the Duchess of Alba]?* are typical information seeking questions in this session by T2.

Concerning the distribution of known information and information seeking questions in EFL2.2, the examination of the data showed that a larger percentage of interrogatives was identified as being of referential character (59.21%) (Table 3). The proportion of test questions, so-called display questions, was significantly lower with 40.79% (Table 3). Thus,

in EFL2.2 the teacher posed more questions through which he wanted to acquire unknown information from the class than questions where he already anticipated a particular answer from his students. These questions serve as examples of referential questions in EFL2.2: *What do you think of the two videos?*; *Do you all know Forrest Gump?*; *X, what do you think?*. *How did they know each other?*, *Who is the killer?*, and *Why does he work in a library?* are representatives of questions with a testing nature in EFL2.2.

As demonstrated in Table 3, the proportion of referential questions was smaller in EFL2.1 than in EFL2.2. While information seeking questions accounted for half of all questions in EFL2.1, the percentage was even higher in EFL2.2 by about 9%. Hence, the already surprisingly large amount of interrogatives with an authentic communicative function was surpassed in EFL2.2.

Table 3 shows that in EFL2.1 the share of questions targeting factual knowledge was higher with 57.14% than other types of information which were addressed in the answers provided by students. Only 28 out of 70 teacher questions were interrogatives which obtained explanations, opinions, and reasons from pupils (40%) (Table 3). Furthermore, 2.86% of the questions encountered in EFL2.1 were of meta-cognitive character and thus, asked the students for an elaboration of their own viewpoint (Table 3). Hence, non-fact questions constituted 42.86% of all teacher questions in EFL2.1. However, no questions about the pupils' personal feelings or inner states were framed by the teacher in EFL2.1 (Table 3). Examples of fact questions in EFL2.1 were *Last year […] did we discuss word order?*, *Is it [the style of the text] neutral?*, and *Are there any linking words in the text?* whereas *Are you happy with the paragraphing?*, *What's your opinion about her [the Duchess of Alba]?*, and *Do you think she cared very much what her family thought about her?* were classified as questions which requested opinions. The only two meta-cognitive questions where students had to justify their own perspective in EFL2.1 were *Why do you agree with her, X?* and *But why [do you agree with her]?*.

As regards the type of information elicited by teacher questions in EFL2.2, a higher number of questions about opinions, reasons, and explanations than questions about facts could be identified (Table 3). While 47 questions targeting opinions, reasons, and explanations were observed in EFL2.2, the amount of fact questions was lower with 26 interrogatives addressing

factual knowledge (34.21%) (Table 3). Furthermore, meta-cognitive questions accounted for 3.95% of all teacher questions in EFL2.2 (Table 3). Therefore, the share of questions which did not deal with facts constituted more than half of all questions in this session with 65.79%. Nevertheless, in EFL2.2 no questions asking about the students' inner states or emotions could be noticed (Table 3). While *Yes, so who killed him?*, *So, how much is a lipstick for example?*, and *How long does it [a lipstick] last?* would be instances of fact questions in EFL2.2, *Why does he […] work in a library?*, *How did they know each other?*, and *X, what do you think?* represent questions about opinions, reasons, and explanations from this lesson. The meta-cognitive questions in EFL2.2 were *Yes, why [do you think does beauty affect one's success in life]?*, *How so, X [Why do you think that music is a decisive factor]?*, and *Why [do you think that music is a decisive factor?]*.

Thus, concerning the distribution of fact and non-fact questions, diverse findings were discovered in the two lessons by T2. In EFL2.1 the percentage of fact questions was substantially greater by approximately 23% when compared to EFL2.2. The amount of interrogatives aiming at opinions, reasons, and explanations was nearly twice as high in EFL2.2 when compared to EFL2.1. Regarding meta-cognitive questions, a slightly higher proportion of meta-cognitive interrogatives was identified in EFL2.2 than EFL2.1. In both EFL lessons by T2 no questions about the pupils' inner states or personal emotions could be found (Table 3).

Overall, the most striking differences between EFL2.1 and EFL2.2 could be observed with regard to the share of open/closed and fact/non-fact questions. Another dissimilarity regarding the percentage of known information and information seeking questions, albeit a less remarkable one, could be noticed as well between the two sessions by T2.

In Table 4 the average findings concerning teacher questions in the lessons EFL2.1 and EFL2.2 by T2 are shown.

Table 4: Overall distribution of teacher questions in EFL lessons by T2

	EFL by T2
Open - closed	93 – 53 (63.7% - 36.3%)
Referential - display	80 – 66 (54.79% - 45.21%)
Fact - opinion/explanation/reason - meta-cognitive - inner state/emotion	66 – 75 – 5 – 0 (45.21% - 51.37% - 3.42% - 0%)
Total number of questions	146
Average number of questions	73

On average, 73 teacher questions were found in each session given by T2 (Table 4). Overall, it can be seen that more open format questions were asked by T2 than closed ones (Table 4). Out of a total amount of 146 teacher questions in the two lessons by T2, 53 were classified as closed interrogatives (36.3%) (Table 4). Thus, a greater share comprised questions with an open nature where students were not restricted to a narrow scope of possible answers (63.7%) (Table 4).

Moreover, on average T2 posed slightly more referential questions than test questions in his lessons (Table 4). The mean proportion of information seeking questions accounted for 54.79% of all teacher questions in the two sessions (Table 4). Only 66 out of 146 questions were display questions where the teacher tested the students' knowledge or understanding (45.21%) (Table 4).

Table 4 also demonstrates that the fact questions accounted for 45.21% of all teacher questions. 75 of all interrogatives were framed in order to obtain opinions, explanations, or reasons from students (51.37%) (Table 4). On average, 3.42% of the questions could be identified as meta-cognitive questions in the lessons by T2 (Table 4). Hence, the mean share of non-fact questions was 54.79% in these sessions and constituted a majority. T2 did not pose any questions which tried to elicit information about inner states or feelings from his students in the two sessions (Table 4).

5.1.3. Comparison of EFL lessons by T1 and T2

The following table (Table 5) contrasts the findings in the EFL lessons by T1 with the English sessions by T2.

Table 5: Comparison of EFL lessons by T1 and T2

	EFL by T1 **EFL1.1, EFL1.2, EFL1.3**	**EFL by T2** **EFL2.1, EFL2.2**
Open - closed	230 – 49 (82.44% - 17.56%)	93 – 53 (63.7% - 36.3%)
Referential - display	36 – 243 (12.9% - 87.1%)	80 – 66 (54.79% - 45.21%)
Fact - opinion/explanation/reason - meta-cognitive - inner state/emotion	185 – 94 – 0 – 0 (66.31% - 33.69% - 0% - 0%)	66 – 75 – 5 – 0 (45.21% - 51.37% - 3.42% - 0%)
Total number of questions	279	146
Average number of questions	93	73

Overall, it can be seen that the total number of questions was considerably larger in the three English classes by T1 (279 questions) with an average proportion of 93 interrogatives per session (Table 5). In two sessions by T2 only 146 teacher questions concerning educational issues were raised which indicates that the mean amount of teacher questions was smaller in his lessons (73 questions) (Table 5).

Further differences could be observed with regard to the distribution of open and closed questions. While in EFL1.1, EFL1.2, and EFL1.3 the share of open questions constituted 82.44% of all questions, the percentage was lower in the lessons by T2 with 63.7% (Table 5). This means that T2 asked more questions where pupils could select amongst a range of possible answers (yes/no, true/false, etc.) in his classes (36.3%) compared to T1 (17.56%) (Table 5). Nevertheless, open questions dominated the sessions by both teachers, T1 and T2.

Divergent findings between the English lessons given by T1 and T2 could also be noticed concerning the number of display and referential questions. In the sessions by T2 a substantially higher percentage of information seeking questions could be discovered with 54.79% (Table 5). In EFL1.1, EFL1.2, and EFL1.3 by T1 the average proportion of

referential questions was significantly lower with 12.9%. Therefore, T1 applied more test questions (87.1%) in her classes than T2 (45.21%) (Table 5).

As regards the type of information addressed in teacher questions, further differences between lessons by T1 and T2 could be found. The mean share of questions targeting factual knowledge was greater in the sessions by T1 with 66.31% than in the classes by T2 (45.21%) (Table 5). Hence, the average percentage of interrogatives which attempted to obtain explanations, reasons, and opinions from pupils was higher in the EFL lessons by T2 with 51.37% whereas only 33.69% of all questions in the sessions by T1 belonged to the same category (Table 5). Moreover, while no questions about meta-cognitive information were raised by T1, 3.42% of all questions in the sessions by T2 asked for an elaboration of the students' own point of view (Table 5). However, no differences concerning the amount of questions about inner states and feelings could be noticed since in none of the sessions by T1 and T2 questions which attempted to retrieve knowledge about the pupils' inner feelings and emotions were posed (0%) (Table 5).

Overall, it could be said that the greatest dissimilarity between the sessions by T1 and T2 concerned the distribution of display and referential questions. Considerable differences regarding format of the interrogative (open/closed) and class of information targeted in questions (fact/non-fact) could be pointed out as well.

5.2. Findings from the CLIL lessons

This subchapter will first discuss and compare the distribution of teacher questions in the individual CLIL lessons. Then it will provide an overview of the average allocation of teacher questions in the CLIL sessions.

Table 6 presents the results concerning teacher questions in CLIL1.1 and CLIL1.2 by T3. Teacher questions were categorized into open/closed, referential/display, and with regard to the type of information they elicited from the pupils (fact/explanation, reason, opinion/meta-cognitive/inner state, emotion).

Table 6: Distribution of teacher questions in CLIL lessons by T3

	CLIL1.1	**CLIL1.2**
Open - closed	100 – 11 (90.09% - 9.91%)	58 – 19 (75.32% - 24.68%)
Referential - display	23 – 88 (20.72% - 79.28%)	29 – 48 (37.66% - 62.34%)
Fact - opinion/explanation/reason - meta-cognitive - inner state/emotion	70 – 41 – 0 – 0 (63.06% - 36.94% - 0% - 0%)	40 – 37 – 0 – 0 (51.95% - 48.05% - 0% - 0%)
Total number of questions	111	77

Overall, more teacher questions concerning educational matters were raised in CLIL1.1. While 111 teacher questions were encountered in CLIL1.1, only 77 teacher questions could be observed in the instructional register in CLIL1.2 (Table 6).

As can be seen in Table 6, 100 out of a total number of 111 teacher questions were classified as open format questions (90.09%) (Table 6). Thus, a low percentage of only 9.91% were closed questions in CLIL1.1 (Table 6). Examples of open questions in this lesson were *Why was there a conflict between the Islamic fundamentalists and the left-wing government in Afghanistan?*, *X, why was there a conflict?*, and *[…] what […] changed dramatically [concerning the freedom of women when the Taliban seized the control]?*. 3 of the 11 closed teacher questions which were found in CLIL1.1 were *Do you remember that, your transparency from your speech, X?*, *Do you know this book?*, and *X […] did you read it?*.

In the second lesson by T3, CLIL1.2, the proportion of open questions accounted for 75.32% (Table 6). Only 19 out of all 77 teacher questions were of closed nature (24.68%) (Table 6). The following open formed interrogatives were found in CLIL1.2: *What does it tell you […] about the First World War?*; *What […] was difficult for them [the soldiers]?*; *So […] what was the Schlieffen Plan?*. Examples of closed questions in CLIL1.2 are *Do you remember that?*, *Did you know what anthrax was a few years ago?*, and *Do you really have the impression that they are huddled together?*.

When comparing the two lessons, the share of open questions was higher in CLIL1.1 than in CLIL1.2 with 90.09% (Table 6). Thus, the percentage of closed questions was greater by approximately 15% in CLIL1.2 compared to the first class, CLIL1.1.

As regards the distribution of authentic and display questions in CLIL1.1, Table 6 demonstrates that a remarkably higher proportion of known information questions could be identified. More than thrice as many test questions (79.28%) were observed than referential questions (20.72%) (Table 6). Instances of display questions in CLIL1.1 were the following interrogatives: *Why did the Soviet Union become involved in the civil war?*, *[…] what did the Soviet propaganda tell […] the people at home?*, and *What is 'wettrüsten'?. Who got a point here please?*, *So, what did you find?*, and *Thomas […] did you read it [All Quiet on the Western Front]?* serve as examples of information seeking questions in CLIL1.1.

Concerning the share of display and referential questions in CLIL1.2, a majority of display questions could be noticed (62.34%) (Table 6). The percentage of information seeking questions was considerably smaller with 37.66% (Table 6). Sample referential questions from CLIL1.2 are *Do you remember that?*, *Does anthrax […] mean anything to you?*, and *Who of you saw the film […] 'Titanic'?*. 3 out of the 48 test questions in CLIL1.2 were *Why [...] did they [the German army] have to stop?*, *Who protected their country?*, and *What did they [the soldiers] dig up?*.

When comparing the two lessons by T1, CLIL1.1 and CLIL1.2, more display questions were phrased in CLIL1.1. As a consequence, in CLIL1.2 significantly more interrogatives characterized by an authentic purpose could be observed (37.66%) than in CLIL1.1 (20.72%) as indicated by the variation of about 17% (Table 6).

Concerning the class of information addressed in teacher questions in CLIL1.1, a higher proportion of fact questions was found (63.06%) (Table 6). Hence, the share of interrogatives targeting opinions, explanations, or reasons was lower with 36.94% (Table 6). Out of 111 teacher questions only 41 did not deal with facts (Table 6). While *In this case […] who fought against whom?*, *Who did the Soviet Union support in this conflict?*, and *What the soldiers also lacked apart from everything else was what?* were instances of fact questions in CLIL1.1, *What was the problem?*, *What should you do in this case?*, and *So, what […] would you say […] where the problems of these men?* are samples of questions which asked for explanations in this session. No interrogatives attempting to elicit meta-cognitive information or knowledge about the students' inner states and feelings could be identified in CLIL1.1 (Table 6).

In CLIL1.2 fact questions also constituted the majority (Table 6). While the share of factual knowledge questions accounted for 51.95%, questions asking for explanations, reasons, and opinions in CLIL1.2 constituted only 48.05% (Table 6). Whereas *Did it happen again later on?*, *What does it ['huddled together'] mean [when translated into German]?*, and *Who did all the work at home?* exemplify fact questions in CLIL1.2, *[…] what made this routine so boring and why did it drag on so long?*, *Why did they have to stop?*, and *Yes, but how [did they fight]?* were questions which attempted to retrieve explanations and reasons from the class. No questions about meta-cognitive information or interrogatives concerning the students' inner states and emotions were posed in CLIL1.2 (Table 6).

Thus, concerning the allocation of questions with regard to the type of information they addressed, not as vast differences between CLIL1.1 and CLIL1.2 by T3 could be discovered. The percentage of fact questions was higher in CLIL1.1 than in CLIL1.2 by about 11%. Hence, in CLIL1.2 marginally more questions which tried to elicit explanations, reasons, and opinions from pupils could be observed.

Overall, it could be said that the greatest difference between CLIL1.1 and CLIL1.2 could be discovered with regard to the proportion of referential/display questions. A smaller variance concerning the allocation of fact and non-fact questions could be identified in the two lessons by T3 whereas a slightly larger discrepancy could be noticed in the number of open and closed interrogatives in the two classes.

Table 7 shows the average distribution of teacher questions according to format (open/closed), information status of the questioner (referential/display), and type of knowledge (fact/explanation, reason, opinion/meta-cognitive/inner state, emotion) which was addressed by the interrogatives in the lessons by T3.

Table 7: Overall distribution of teacher questions in CLIL lessons by T3

	CLIL by T3
Open - closed	158 – 30 (84.04% - 15.96%)
Referential - display	52 – 136 (27.66% - 72.34%)
Fact - opinion/explanation/ reason - meta-cognitive - inner state/emotion	110 – 78 – 0 – 0 (58.51% - 41.49% - 0% - 0%)
Total number of questions	188
Average number of questions	94

A total number of 188 teacher questions in the instructional domain were framed in the CLIL lessons by T3 (Table 7). Thus, a mean amount of 94 interrogatives could be found per lesson (Table 7).

Generally speaking, T3 posed a majority of open questions in her lessons. 84.04% of 188 questions were questions which provided students with a certain amount of freedom regarding their answers (Table 7). 30 of the teacher questions were formed in order to be responded with yes/no, true/false, or by choosing an answer from a constricted range of possible replies (Table 7).

Moreover, T3 raised more test questions than information seeking questions in her sessions. Only in 27.66% of all questions from the instructional domain the primary and secondary knower status of student and teacher was irrelevant (Table 7). The remaining share of 72.34% of all interrogatives demonstrated testing character in the CLIL lessons (Table 7).

In addition to the majority of display questions, fact questions dominated the two CLIL sessions. While 78 out of all 188 teacher questions were questions which elicited opinions, reasons, and explanations from the class, a higher number of 110 questions dealt with facts (Table 7). Nevertheless, in both lessons no meta-cognitive questions or interrogatives concerning the students' inner states and emotions could be observed (Table 7).

5.3. Comparison of lessons by T1, T2, and T3

This section will contrast the results concerning the allocation of teacher questions in the classes by the three different teachers. Table 8 shows the mean distribution of the interrogatives in the lessons by T1, T2, and T3 with regard to their format (open/closed), the knower status of the questioner (referential/display), and the types of information addressed in the interrogatives (fact/opinion, reason, explanation/meta-cognitive/inner state, emotion).

Table 8: Overall distribution of teacher questions in lessons by T1, T2, and T3

	T1 **EFL1.1, EFL1.2, EFL1.3**	**T2** **ELF2.1, EFL2.2**	**T3** **CLIL1.1, CLIL1.2**
Open - closed	230 – 49 (82.44% - 17.56%)	93 – 53 (63.7% - 36.3%)	158 – 30 (84.04% - 15.96%)
Referential - display	36 – 243 (12.9% - 87.1%)	80 – 66 (54.79% - 45.21%)	52 – 136 (27.66% - 72.34%)
Fact - opinion/explanation/ reason - meta-cognitive - inner state/emotion	185 – 94 – 0 – 0 (66.31% - 33.69% - 0% - 0%)	66 – 75 – 5 – 0 (45.21% - 51.37% - 3.42% - 0%)	110 – 78 – 0 – 0 (58.51% - 41.49% - 0% - 0%)
Total number of questions	279	146	188
Average number of questions	93	73	94

As shown in Table 8, varying numbers of teacher questions in the different classes could be observed. 279 teacher questions were encountered in the three EFL lessons by T1 (Table 8). While 146 teacher questions dealing with educational issues in the sessions by T2 were identified, this number was higher in the same amount of lessons by T3 (188 interrogatives) (Table 8). These findings indicated that on average T3 asked the most questions which addressed instructional issues per session (94) while T2 posed the lowest amount in his classroom (73) (Table 8). T1 asked a mean number of 93 questions per lesson (Table 8).

Concerning the average distribution of open and closed questions in the lessons of the three teachers, the greatest proportion of open questions could be found in the sessions by T3 with 84.04% (Table 8). Second came the EFL lessons by T1 with a marginally lower share of 82.44% (Table 8). On average, T2 asked less open questions than T1 and T3 since in his classroom the mean proportion of open interrogatives was significantly smaller with 63.7%

(Table 8). This means that a variance of about 21% could be detected regarding the percentage of open questions in the classes by the different instructors.

When looking at the allocation of display and referential questions, the highest share of display questions could be observed in the classes by T1 (87.1%) (Table 8). Table 8 shows that in the CLIL lessons by T3 a smaller percentage of questions (72.34%) which aimed at testing the class was detected. The lowest number of known information questions was raised in the lessons by T2. While in the sessions by T1 and T3 a significant majority of display questions was discovered, interrogatives with an authentic communicative purpose were encountered remarkably more frequently in the classroom of T2 with 54.79% (Table 8).

In addition to the differences concerning open/closed and referential/display questions in the lessons by T1, T2, and T3, further dissimilarities could be identified with regard to the type of knowledge elicited by the questions. The proportion of fact questions varied between 45.21% (T2) and 66.31% (T1) (Table 8). In the lessons by T3 the share of fact questions accounted for 58.51% (Table 8). Furthermore, while in the sessions by T2 a small proportion of meta-cognitive questions could be identified (3.42%), no such interrogatives were encountered in the classes by T1 and T3 (Table 8). One similarity between all three teachers was that none of them framed any questions concerning the students' inner states or emotions (Table 8).

Overall, it could be said that the discrepancies concerning teacher questions in the lessons given by T1, T2, and T3 were greatest in the category regarding the knower status of the teacher (referential/display). Further significant differences could be pointed out concerning the distribution of fact and non-fact questions. Findings about the proportion of open/closed questions demonstrated similar results in the sessions by T1 and T3. However, while in the lessons by T1 and T3 the amount of open questions was located around 83%, the percentage of these questions was lower by approximately 19% in the classes by T2.

6. Discussion of findings

In this chapter the results concerning the distribution of teacher questions in the EFL and CLIL programs will be interpreted. First of all, the individual English sessions by T1 and T2

will be analyzed before they will be put in comparison with the findings from Broidl's study on lower EFL proficiency classes (2014). Then the allocation of teacher questions in the CLIL classes will be interpreted and contrasted with the data from lessons in a lower CLIL grade from Broidl's research (2014).

6.1. Discussion of findings from the EFL lessons by T1

Overall, in the EFL lessons by T1 the percentage of open questions was remarkably higher than questions which could be answered with yes/no, true/false, or by choosing an option from a limited range of possible replies. When comparing the individual lessons, the proportion of closed questions was slightly greater in EFL1.1 with 22.64% while the share was lower in EFL1.2 and EFL1.3 with 12.36% and 16.67% (Table 1).

The increased amount of closed questions in EFL1.1 might be due to the characteristics of the last task, a gap-filling exercise, which was accomplished in this session. During this activity the teacher asked the students for the missing words in the text. All those posed questions were closed questions because the students had to choose from a restricted selection of possible answers listed on the worksheet. When looking at the other activities in EFL1.1, the distribution between open and closed questions was comparable to EFL1.3 with 14 out of the remaining 96 teacher questions being of closed nature (14.58%).

As already pointed out, in EFL1.2 the lowest amount of closed questions could be discovered which was probably due to the brainstorming activity included in the lesson. Out of 29 teacher questions in this activity only 3 could be answered with yes/no (10.34%). It seems that the pedagogical aim behind this task was to provide the students with sufficient freedom for producing their utterances and not to limit them by asking questions which could be answered by a simple yes/no or by choosing from a restricted range of acceptable replies. Furthermore, at the beginning of the session the class had to summarize the information discussed in the previous lesson. During this activity mostly open questions were posed by the teacher. Another factor which could have influenced the increased amount of open questions in EFL1.2 might have been the great proportion of questions aiming at non-factual knowledge which was encountered in this lesson (46.07%). Questions which attempt to

obtain explanations and reasons are usually open in nature because otherwise the objective of the question could probably not be fulfilled by the provided answer.

In EFL1.3 the distribution of open and closed questions did not indicate any remarkable findings. The proportion of open questions was situated between the results in EFL1.1 and EFL1.2 with 16.67% (Table 1). Neither brainstorming or summarizing activities nor gap-filling tasks were conducted in EFL1.3 which might have caused an increase in open or closed questions.

As regards the proportion of display questions in lessons by T1, in all three lessons known information questions dominated (Table 1). One reason for this might have been the strong focus on content knowledge since the teacher concentrated on conveying and discussing information concerning the development of the brain and the topic of human teeth in the three sessions. In EFL1.1 the highest percentage of test questions was found with 92.45%, the lowest in EFL1.2 with 80.9% (Table 1).

When analyzing the transcript of EFL1.2 more closely, it could be observed that the number of questions about the students themselves was slightly increased which explained the raised proportion of referential questions in this session (19.1%) compared to EFL1.1 (Table 1). Instances of such information seeking questions targeting personal facts in EFL1.2 were *Do you do it [shower with your eyes closed]?*, *X, do you have good teeth?*, and *Do you already have a lot of fillings?*. A small percentage of interrogatives aiming at personal information and hence, referential questions such as the following interrogatives could also be identified in EFL1.3: *Did you brush [with the wrong hand]?*; *Okay, how did it go [brushing your teeth with the wrong hand]?*; *Did you fall [while showering with your eyes closed]?*. Thus, the rise in the percentage of questions with an authentic communicative purpose in EFL1.2 and EFL1.3 in comparison to EFL1.1 might have been caused by an increased amount of personal fact questions which were encountered in them.

In EFL1.1 the greater overall share of test questions when compared to EFL1.2 and EFL1.3 might be due to the session's focus on content knowledge such as facts and explanations concerning the growth of the human brain and not on personal facts or opinions. Only one question addressing personal information about a student was raised (*Well, do you have an electric toothbrush?*) and two interrogatives regarding the students' point of view (*Do you*

[…] think that's true? That teenagers react more impulsive, are more likely to have mood swings?).

Concerning the fact versus non-fact questions in the lessons by T1, the proportion of fact questions varied between 53.93% (EFL1.2) and 76.19% (EFL1.3) (Table 1). The higher proportion of fact questions in EFL1.1 (68.87%) and EFL1.3 (76.19%) might have been the result of an increased amount of questions asking for translations of vocabulary in both lessons such as *What is 'development' by the way [in German]?*, *So what is 'Attention Deficit Disorder', 'ADD' [in German]?*, *Chromosome [What is 'chromosome' in German]?* (EFL1.1) or *The 'baby teeth' are what in German?*, '*Filling' is [what in German]?*, *What is 'a cavity' [in German]?*, *What is 'rinse' [in German]?* (EFL1.3). No questions about translations could be observed in EFL1.2.

Furthermore, it has to be mentioned that in EFL1.2 the teacher wanted the students to review and summarize the information about the human brain discussed in the previous lesson in order to prepare the class for their oral exams. Thus, the writing activity at the beginning of the lesson was conducted so students would practice explaining and elaborating on certain topics, for example, the human brain. Hence, the pedagogical aim of this task, which consumed most of the class time, might be the reason why numerous questions aiming at explanations and reasons were encountered in EFL1.2 but fewer fact questions and no interrogatives which elicited opinions from pupils were found.

6.2. Discussion of findings from the EFL lessons by T2

As shown in Table 3, the percentage of closed questions was significantly higher in EFL2.1 than in EFL2.2 by approximately 18%. The decreased number of open questions in EFL2.1 might be due to the analysis of the blog entry which was carried out by the students and the teacher during the lesson. Throughout this activity the teacher often supported the students via closed questions. Furthermore, he raised closed questions when helping students with their response to the blog entry. Thus, closed questions were phrased in order to give the students guidance.

In EFL2.2, on the other hand, a great majority of open questions was observed (72.37%) (Table 3). In this lesson T2 offered the students the opportunity for discussing the concept of beauty and stating their own opinion. Furthermore, he asked them to summarize a passage from a book where he predominantly posed open questions. The purpose of these two activities was to provide the class with speaking exercises where they could elaborate in the target language in an unrestricted way and could respond without being limited to one-word answers. Therefore, these two tasks might be the reason for the lower share of closed questions in EFL2.2 when compared to the findings in EFL2.1.

Overall, in the lessons by T2 the proportion of referential questions was remarkably greater when contrasted with the results in the sessions by T1 or T3 (Table 8). Concerning the distribution in the individual lessons by T2, EFL2.1 demonstrated a slightly smaller share of referential questions (50%) than EFL2.2 (59.21%) (Table 3). Many display questions were observed when the teacher analyzed textual features such as style, register, vocabulary, and organization of the blog entry with the students. During the discussion of the text, however, the teacher asked referential questions about the students' point of view on the subject issue in order to help them form an opinion which they could present in their reaction to the blog entry and its comment. Thus, the numerous interrogatives addressing the students' own perspective probably caused the large percentage of referential questions in EFL2.1.

A great amount of the display questions which were found in EFL2.2 were encountered during the task concerning the passage from the book. Reading the text had been homework and thus, the purpose of the teacher questions during the discussion of the book was testing the students' knowledge and understanding of the happenings in the story. Nevertheless, throughout the rest of class time referential questions dominated due to the type of information the teacher targeted during the debate about the topic of beauty, namely opinions. Therefore, the raised number of referential questions in EFL2.1 and EFL2.2 compared to the lessons by T1 and T3 was caused by an increased proportion of questions concentrating on the students' point of view.

As regards the distribution of fact and non-fact questions in EFL2.1 and EFL2.2, it has to be pointed out that EFL2.2 conveyed a larger amount of questions which obtained opinions, reasons, and explanations (61.84%) than EFL2.1 (40%) (Table 3). This might have been

caused by the activities conducted in EFL2.2 which focused mainly on opinions concerning the topic of beauty and explanations regarding the happenings in the book.

In EFL2.1 the number of non-fact questions was lower than the share of fact questions by about 14% (Table 3). Nevertheless, many questions addressing the students' point of view and interrogatives which aimed at eliciting explanations in this lesson were found when the teacher tried to guide the class through the analysis of the text and the writing process. Fact questions were encountered in the lesson when characteristics of the text, for instance, register, style, and vocabulary were discussed.

6.3 Discussion of findings from the CLIL lessons by T3

In Table 8 it could be seen that overall the number of open questions dominated the lessons by T2. The high number of questions which allowed the students a greater scope of freedom concerning their answers in CLIL1.1 (90.09%) was probably due to the discussion of test questions which were not closed in form. Moreover, it has to be pointed out that about more than 36% of all questions in CLIL1.1 attempted to obtain explanations (Table 6) and thus, provided more space for lengthier responses. In addition to this, it should be mentioned that most questions which could be answered with yes/no or by choosing from several options concerned personal facts in CLIL1.1 such as the following questions *Do you know this book?* and *X, […] did you read it [the book]?*.

In CLIL1.2 the proportion of closed questions was higher with 24.68% (Table 6). This increased share might have been caused by the closed teacher questions which guided the students through the initial steps of the picture interpretation. Examples of those interrogatives are *Is it [the picture] realistic?*, *Could you […] mistake this [picture] for a photograph?*, and *Do you really have the impression that they [the soldiers] are huddled together?*. Nevertheless, at the beginning of the class when the students were asked to review the content of the previous lessons or when the students had to summarize information about the Schlieffen Plan open question which aimed at facts, explanations, and reasons were predominant in CLIL1.2.

As regards the distribution of display and referential questions in the lessons by T3, in both sessions a majority of test questions was identified (Table 6). One reason for this might have been the focus on content knowledge in CLIL1.1 and CLIL1.2. Furthermore, in CLIL1.1 the discussion of the test questions at the beginning of the lesson contributed to the high amount of known information questions (79.28%) (Table 6). Moreover, throughout the lesson the students had to explain and summarize information from material which was reviewed during class time and thus, teacher questions were mostly of a testing nature during these activities.

In CLIL1.2 less display questions were observed than in the previous lesson by T3 (62.34%) (Table 6). This smaller proportion might have been caused by the inclusion of a task where students had to describe and explain a picture. During this activity the teacher posed more referential questions since the interpretation of art is subjective. However, overall a preponderance of display questions could be found in this session, for example, when the teacher asked the students to summarize the content of the previous lesson or a passage from the book about the Schlieffen Plan.

Concerning the category of fact and non-fact questions, Table 6 showed that in both lessons fact questions dominated the classroom discourse. However, in CLIL1.2 more questions aiming at opinions and explanations were encountered (48.05%) than in CLIL1.1 (36.94%) (Table 6). The reason for this was probably the activity where students had to analyze the picture shown by the teacher. During this task the instructor tried to obtain interpretations from the pupils and thus, this might explain the slightly decreased amount of fact questions in CLIL1.2 in comparison to CLIL1.1. Nevertheless, throughout the rest of the CLIL1.2 session similar activities focusing on summarizing and explaining information as in CLIL1.1 were undertaken.

6.4. Comparison of EFL findings with Broidl (2014)

The observations concerning teacher questions in higher EFL classes from this study (11th and 12th grade) will now be compared with the results from Broidl's research on lower level EFL data (8th grade) which had been collected by Kornfeld (2012). Table 9 demonstrates the findings regarding teacher questions in the EFL language classes of varying language levels.

Table 9: Overall distribution of teacher questions across different proficiency levels in EFL classes

	T0 **EFL0.1, EFL0.2, EFL0.3** **(8th grade)**	**T1** **EFL1.1, EFL1.2, EFL1.3** **(11th grade)**	**T2** **ELF2.1, EFL2.2** **(12th grade)**
Open - closed	171 – 74 (69.8% - 30.2%)	230 – 49 (82.44% - 17.56%)	93 – 53 (63.7% - 36.3%)
Referential - display	113 – 132 (46.12% - 53.88%)	36 – 243 (12.9% - 87.1%)	80 – 66 (54.79% - 45.21%)
Fact - opinion/explanation/ reason - meta-cognitive - inner state/emotion	170 – 75 – 0 – 1 (69.39% - 30.61% - 0% 0.41%)	185 – 94 – 0 – 0 (66.31% - 33.69% - 0% - 0%)	66 – 75 – 5 – 0 (45.21% - 51.37% - 3.42% - 0%)
Total amount of teacher questions	245	279	146
Average amount of teacher questions	81.67	93	73

In Table 9 it is demonstrated that the average number of teacher questions was highest in the sessions by T1 (93). While in her three lessons 279 questions were asked, in the same amount of sessions by T0 only 245 teacher questions could be encountered which shows that the mean amount of interrogatives was lower with 81.67 per session (Table 9). In the two lessons by T2 146 questions could be identified which indicates that on average the lowest number of teacher questions per class was observed in EFL2.1 and EFL2.2 (73) (Table 9).

As regards the mean distribution of open and closed teacher questions, the results varied significantly in the three different levels (Table 9). The smallest amount of open questions could be identified in the classes held by T2 (EFL2.1 and EFL2.2) with 63.7% (Table 9). In the 8th grade lessons by T0 the average percentage of open questions was slightly higher than in EFL2.1 and EFL2.2 with 69.8% (Table 9). The sessions by T1 (EFL1.1, EFL1.2, and EFL1.3) displayed the greatest proportion of open questions with 82.44% (Table 9). Thus, it seems that the amount of open/closed questions did not systematically change with the level of proficiency in the classes. The data showed that the percentage of open questions was fairly similar in the 8th and 12th grade EFL lessons but grew in the 11th grade.

Concerning the average share of display questions, a similar trend was observed. While in the 8th grade and 12th grade EFL lessons the proportion of referential questions was comparatively high with 46.12% and 54.79%, in the lessons by T1 a remarkably lower percentage of information seeking questions could be identified with 12.9%. Hence, it seems

that the mean number of test questions did not consistently rise or fall in higher language skill levels.

Regarding the type of information addressed by the teacher questions, the range of fact and non-fact questions varied in the different language classes as can be seen in Table 9. The average percentage of questions requesting factual knowledge was highest in the lowest grade, grade 8, with 69.39%, followed by a slightly smaller share of fact questions in grade 11 with 66.31% (Table 9). In the 12th grade the proportion of fact questions was considerably smaller with 45.21% (Table 9). Across the different proficiency levels the percentage of interrogatives targeting opinions, reasons, and explanations increased from 30.61% (8th grade) to 33.69% (11th grade) and finally, to 51.37% in the highest class (12th grade) (Table 9). Overall, only in the lowest grade (8th grade) one question about the students' personal state was framed while no such questions were observed in the higher levels (Table 9). Furthermore, the 12th grade was the only class were meta-cognitive questions were raised (3.42%) (Table 9). Thus, with increasing language skills of the students the mean number of fact questions fell and the average proportion of questions eliciting opinions, reasons, and explanations grew. In addition to this, interrogatives which aimed at meta-cognitive information slightly rose with the students' language proficiency. The category of inner state and emotion questions was scarcely encountered in the lowest level and completely absent in the higher ones.

6.5. Comparison of CLIL findings with Broidl (2014)

Table 10 conveys the findings regarding the average allocation of teacher questions in an 8th and a 12th CLIL grade.

Table 10: Overall distribution of teacher questions across different proficiency levels in CLIL lessons

	T0 **CLIL0.1, CLIL0.2, CLIL0.3** **(8th grade)**	**T3** **CLIL1.1, CLIL1.2** **(12th grade)**
Open - closed	190 – 13 (93.6% - 6.4%)	158 – 30 (84.04% - 15.96%)
Referential - display	12 – 191 (5.91% - 94.09%)	52 – 136 (27.66% - 72.34%)
Fact - opinion/ explanation/ reason - meta-cognitive - inner state/emotion	181 – 22 – 0 – 0 (89.16% - 10.84% - 0 % - 0%)	110 – 78 – 0 – 0 (58.51% - 41.49% - 0% - 0%)
Total amount of teacher questions	203	188
Average amount of teacher questions	67.67	94

In Table 10 it is shown that on average more questions per session were asked in the higher level (94) than in the lower one (67.67). While a total number of 188 teacher questions could be observed in the two lessons by T3, only 203 were encountered in the three CLIL sessions by T0.

Concerning the category of open and closed questions, the mean percentage of open questions decreased in the higher grade by approximately 10%. Thus, in the 12th CLIL grade a greater amount of closed questions (15.69%) which could be answered with yes/no or by choosing from a limited range of possible responses was found than in the lower level (6.4%) (Table 10).

Moreover, the average percentage of referential questions rose substantially from 5.91% to 27.66% with improving language skills of the students (Table 10). Hence, the overall share of questions which tested the pupils' understanding or knowledge was greater in the lower level of this teaching program than in the higher grade by about 22%.

As regards the distribution of fact and non-fact questions in the CLIL lessons, the average share of interrogatives concerning opinions, reasons, and explanations grew significantly with the increasing language level. While only 10.84% of all teacher questions from the instructional register in the 8th CLIL grade were questions which did not address factual information, the percentage was remarkably higher in grade 12 with 41.49% (Table 10). As a result, more questions which attempted to elicit attitudinal information or explanations and reasons could be found in higher language levels. Nevertheless, in both grades no questions addressing inner states and emotions or meta-cognitive knowledge were posed (Table 10).

6.6. Discussion of hypotheses

As already announced in section 4.3., the purpose of this study was to discover whether teacher questions changed across different proficiency levels of the students. The following three hypotheses had been proposed in order to provide an answer for this research question:

> **Hypothesis 1 (H1):** There is no difference concerning the application of open and closed questions across different proficiency levels in EFL and CLIL classes.
>
> **Hypothesis 2 (H2):** There is no clear connection between the distribution of referential and display questions and varying language levels in EFL and CLIL classes.
>
> **Hypothesis 3 (H3):** Teachers apply more questions which are cognitively demanding in higher skills EFL and CLIL lessons than in lower ones.

The following sections will now discuss the hypotheses in connection with the EFL and CLIL findings of this analysis and of Broidl's study (2014) in order to show whether they have to be accepted, refuted, or adapted in this context. First of all, the EFL findings will be taken into account, followed by the CLIL classes.

6.6.1. Discussion of hypotheses with regard to EFL findings

As regards the first hypothesis (H1) which proposed that there is no difference in the distribution of open and closed questions across varying language levels, findings indicated that there was no clear link between the proportion of open/closed questions and changing proficiency levels. The percentage of open questions dominated in all three EFL levels but the share varied between 63.7% (12th grade) and 82.44% (11th grade) (Table 9). In the lowest grade (8th grade) the proportion of open questions accounted for 69.8% (Table 9). When looking at the results of the individual lessons more closely, the share of open questions ranged, for example, from 60.44% to 78.05% in the lessons by T0 (Broidl 2014: 9) and from 54.29% to 72.37% in the sessions by T2 (Table 3). In the classes by T1 the difference was less prominent but also existent with a variation of approximately 10% (Table 1).

Possible reasons for the changing share of open/closed questions could already be pointed out in the discussion of the findings in the EFL lessons (cf. subchapter 6.1 and 6.2). While discussions, brainstorming exercises, and summaries seemed to raise the amount of open questions, tasks where the teacher tried to help the pupils by leading them via questions and interrogatives which aimed at personal information increased the number of closed questions. Furthermore, a link between a high number of open questions and a raised amount of questions attempting to obtain explanations and reasons and a connection between closed questions and personal fact questions could be identified. Thus, it could not be observed that an improving proficiency level caused a rise or a fall in the application of open/closed questions but that the types of activities and their focus on specific information influenced the proportion of open/closed teacher questions in the lessons. Due to these results, a modified version of H1 has to be proposed:

> **H1:** There is no clear connection between the distribution of open and closed questions and varying language levels of the students in EFL classes. The distribution of open and closed questions is strongly influenced by task designs in EFL lessons.

The second hypothesis, H2, which suggested that there is no link between the application of display and referential questions and different language levels in the EFL lessons, seems to be correct. Across the varying language levels the proportion of display questions fluctuated between 45.21% (12th grade) and 87.1% (11th grade) (Table 9). In the lowest level the percentage of test questions constituted 53.88% (Table 9).

However, when analyzing the lessons individually, it could be observed that in the EFL lessons by T2 the share of referential questions increased during tasks focusing on discussions of students' perspectives. On the other hand, in the sessions by T1 the amount of display questions grew when dealing with translations of vocabulary or when students had to summarize and review information. Thus, it might be argued that the number of display questions did not simply change with an increasing language level but that the types of tasks and their varying focus on particular classes of information affected the distribution of display and referential questions. Due to these findings, H2 has to be modified the following way:

H2: There is no clear connection between the distribution of referential and display questions and varying language levels in EFL classes. The distribution of referential and display questions is influenced by the types of tasks which are performed.

The third hypothesis (H3), which proposed that more cognitively demanding questions are posed in higher skill EFL classes than in lower ones, could be supported by the results of this study. While the share of fact questions was highest in grade 8 (69.39%), the proportion was slightly smaller in grade 11 with 66.31% and significantly lower in grade 12 with 45.21% (Table 9).

When looking at the lessons more closely, in all sessions where older students were present (levels 11 and 12), except for one, EFL1.3, the amount of non-fact questions was larger, at least marginally, than the overall proportion of questions aiming at explanations, reasons, and opinions in the lower one, grade 8 (Table 1, 3, and 9). Overall, the percentage of questions which did not deal with factual knowledge but were supposedly more challenging grew by approximately 25% with improving language skills. The greatest rise could be observed from grade 11 to grade 12 with about 21% while from grade 8 to 11 non-fact questions only increased by approximately 3%. This suggests that in the higher level different pedagogical objectives were being attained. While it might be argued that in lower competence EFL grades (level 8 and 11) the activities focused more on facts, in grade 12 it became increasingly important for students to be able to explain concepts and connections and to state opinions and their reasons concerning a particular point of view. Especially the share of questions addressing opinions seemed to rose in the lessons by T3 (grade 12). Due to this, H3 is supported by the findings in the EFL lessons but is also in need of an extension:

H3: Teachers apply more questions which are cognitively demanding in higher skills EFL lessons than in lower ones. Due to the different aims of the activities, the proportion of non-fact questions grows with an increasing language proficiency in EFL classes.

6.6.2. Discussion of hypotheses with regard to CLIL findings

Regarding H1 in the CLIL context, findings might suggest that the share of open questions fell in higher proficiency levels. The percentage of open questions was greater in grade 8 with 93.6% than in grade 12 (84.04%) (Table 10). However, when analyzing the individual lessons more closely, similar observations as in the EFL context could be made.

The examination of the sessions indicated that not the improved language skills caused a growth in the share of closed questions but rather that the types of tasks influenced the distribution of open and closed questions. In the lower CLIL grade open questions were encountered frequently when students were asked to perform brainstorming activities and to summarize information as explained by Broidl (2014: 15). Such tasks were present in the higher CLIL lessons as well but it seemed that teacher questions which aimed at guiding students through the initial steps of an activity and interrogatives that elicited personal facts increased the proportion of closed questions there. Nevertheless, throughout the rest of the higher level CLIL sessions, questions targeting explanations and reasons which were open in nature were more dominant than in the 8th grade. Thus, it could be argued that the types of exercises and their changing attention concerning the information class addressed in them affected the distribution of open and closed questions in the CLIL context. As a consequence, H1 which has already been adapted and modified in connection with EFL lessons is supported by the results from the CLIL context:

> **H1:** There is no clear connection between the distribution of open and closed questions and varying language levels of the students in CLIL classes. The distribution of open and closed questions is strongly influenced by task designs in CLIL lessons.

Concerning the share of display and referential questions in CLIL lessons, the initial hypothesis 2 (H2), which claims that there is no clear connection between the amount of information seeking and known information questions across different proficiency levels, seems to be incorrect at first. On average more display questions were identified in the lower CLIL classes (94.09%) than in the 12th grade (72.34%) (Table 10). However, when examining the individual sessions in more detail it became apparent that task designs and

thereby, the focus on different kinds of information, influenced the distribution significantly, as already observed in the EFL context (cf. 6.6.1.)

In the two CLIL lessons by T3 the amount of known information questions grew when the teacher asked the students to summarize text passages and information while activities such as interpreting a picture produced the opposite effect. Therefore, H2 which has already been adapted for the EFL program is supported by findings in the CLIL lessons:

> **H2:** There is no clear connection between the distribution of referential and display questions and varying language levels in CLIL classes. The distribution of referential and display questions is influenced by the types of tasks which are performed.

As regards the last hypothesis, H3, findings in the CLIL sessions suggested that this assumption was correct. In the lower CLIL classes the proportion of fact questions was substantially greater with 89.16% whereas in the 12th grade CLIL lessons on average only 58.51% of all teacher questions in the instructional register dealt with facts (Table 10).

A closer analysis of the lessons showed that in the individual sessions in grade 12 the proportion of non-fact questions was considerably higher compared to grade 8 due to activities which focused on the students' abilities to explain, to interpret, and to voice their own point of view. In the lower class the teacher concentrated mostly on facts, as Broidl pointed out (2014: 17). Compared to the findings in the EFL lessons, the proportion of non-fact questions was lower in grade 12 CLIL classes (41.49%) than in the EFL 12th grade lessons (54.79%) probably due to a stronger emphasis on content (Tables 9 and 10). However, the share of non-fact questions in the EFL context increased by about 25% whereas the rise was even higher in the CLIL program with approximately 31%. Therefore, the modified version of H3 is even more strongly supported by observations in the CLIL context due to a larger growth of non-fact interrogatives when compared to the EFL program, although overall, there was still a greater focus on facts in the 12th grade CLIL sessions when compared to the 12th grade EFL classes:

> **H3:** Teachers apply more questions which are cognitively demanding in higher skills CLIL lessons than in lower ones. Due to the different aims of the activities, the proportion of non-fact questions grows with an increasing language proficiency in CLIL classes.

6.7. Comparison of findings with previous studies

This section will focus on a comparison of various findings from the present study with prior research.

As already discussed in a previous chapter (cf. 3.3.1), studies, for example, by Long & Sato (1983), Shomoossi (2004), Musumeci (1996), or Yang (2010) demonstrated that the amount of display questions dominated in classrooms. Ramirez et al. (1986) even claimed a preponderance of test questions across varying language and age levels of learners (cited in Chaudron 1988: 127). However, in the classes by T2 the percentage of display questions was not as high as in the aforementioned investigations with 50% (EFL2.1) and 40.79% (EFL2.2) (Table 3). Thus, the findings in the sessions by T2 were not in accordance with observations from other scholars probably due to the types of activities performed in these lessons which primarily focused on the students' opinions and hence, on unknown information.

Regarding the focus on factual knowledge in CLIL lessons, another discrepancy could be identified in comparison to other research projects. In Dalton-Puffer's study of the CLIL classroom a great percentage of questions dealing with facts (89%) could be noticed (2007). These findings were supported by Broidl's analysis of CLIL sessions where fact questions accounted for 89.16% of all teacher questions (2014). In addition to these results, Wilen claimed that the teachers' focus during the lessons is mostly on factual knowledge (1991, referred to in Meng et al. 2012: 2603) (for more information on these studies cf. section 3.3.2.). When comparing the results of these observations with the present study, a dominant proportion of fact questions in the CLIL sessions, albeit a considerably lower one with 58.51%, could be identified (Table 10). Hence, even though fact questions constituted more than half of all teacher questions in the content-focused classroom, the dominance of fact questions was not as apparent in this data when contrasted to Dalton-Puffer's (2007) and Broidl's study (2014). The findings seemed to be more in accordance with Pascual Peña's observations which demonstrated less substantial fact question shares with 73.6% and 63.3% (2010: 68).

Moreover, Broidl proposed a connection between fact questions and questions which addressed translations. In her discussion of the findings she argued that the number of fact questions was surprisingly high in one of three EFL lessons due to the great proportion of

teacher interrogatives which asked for German translations of certain words (2014: 17). In the present study a higher share of fact questions could be identified in the two EFL lessons by T1 which frequently focused on vocabulary (EFL1.1 and EFL1.3) than in EFL1.2 where significantly less emphasis was directed towards this matter (Table 1). Thus, Broidl's suggestion that a focus on vocabulary might affect the number of fact questions could be supported by the findings of this study.

Concerning the open/closed format of teacher questions in CLIL sessions, similar results as in Pascual Peña's research could be obtained. While in her research the proportion of open questions accounted for 79.8% and 87.7% (2010: 68), in the present study the share of open questions in CLIL lessons constituted 84.04% (Table 10).

Furthermore, no positive or negative correlation regarding the closedness of referential questions could be identified. The proportion of open and closed information seeking questions was approximately the same. Thus, the data did not indicate that authentic questions are more frequently closed in nature as, for example, suggested by Dalton-Puffer (2007: 112).

As regards Broidl's findings (2014) concerning the influence of task types on the distribution of open and closed teacher questions, comparable results could be obtained in the present study. Broidl suggested that certain activities such as brainstorming and summarizing information caused more questions with an open nature while closed questions were more frequently encountered when the teacher attempted to steer the students into a certain direction with the help of interrogatives (2014: 15-17). These observations by Broidl could be supported by the results of this research project.

In addition to this, the present study provided results concerning the influence of the activity type and the focus on certain information on the proportion of referential/display questions which were similar to Nystrand et al.'s data (2010). Nystrand et al.'s findings showed, for example, that teacher questions during discussions went beyond the mere "transmission and recitation of information" of display questions because a discussion "is about figuring things out" (2010: 188-189). Furthermore, their research indicated that authentic questions were more frequently framed in clusters when they elicited generalization and analysis of information or speculation (2010: 191). In the present study the amount of referential

questions also increased during discussions and interpretations of material while the number of test questions grew in tasks which concentrated on summarizing and reviewing of information.

Concerning the differences between the two teaching programs, further interesting insights have been gained with this study when compared to other research projects. Bialystock et al. argued that in the language-oriented classrooms the amount of questions aiming at more general knowledge was lower than in the lessons which focused on content (1978, quoted in Chaudron 1988: 127). This claim could not be sustained by findings in Broidl's study who pointed out that in her data the amount of referential questions was significantly higher in the EFL lesson than in the CLIL sessions (2014). The observations in her study suggested that in the EFL context there was a greater focus on language production while in the content-oriented CLIL sessions facts were emphasized and hence, display questions were more dominant there (for further information concerning these studies cf. section 3.3.3.). The present study, however, provided inconclusive results in this regard. As could be seen in Table 8, the percentage of display questions varied significantly between 45.21% and 87.1% in the EFL sessions by T2 and T1. In the CLIL session an average proportion of 72.34% test questions could be found. Thus, Bialystock et al.'s opinion could only be supported by the findings in the EFL lessons by T1. Nevertheless, the results of the EFL sessions by T2 and the CLIL classes by T3 would be in accordance with Broidl's results (2014). Due to these ambiguous findings, neither Bialystock et al.'s nor Broidl's conclusions could be supported by the results of this study.

Overall, the findings of the present study provided insights which were not all consistent with previous research. While other scholars observed a dominant number of display questions, a majority of test questions could not be identified in all lessons analyzed in this study. In addition to this, no positive correlation concerning the closedness of referential questions could be observed, contrary to Dalton-Puffer's findings (2007). Furthermore, although researchers encountered a preponderance of fact questions in the CLIL environment, findings indicated that the proportion of these questions was significantly smaller in the higher level CLIL sessions examined in the present study. Moreover, inconclusive results concerning the distribution of display and referential questions in language- and content-oriented lessons could be pointed out when compared to the controversial findings of Bialystock et al. (1978,

referred to in Chaudron: 1988: 127) and Broidl (2014). Concerning Broidl's suggestion (2014) that task design influences openness or closedness of questions and Nystrand et al.'s findings which demonstrated that activity types and the focus on different information classes affect the share of referential/display questions, further supporting evidence could be discovered.

7. Limitations of the study

This chapter will discuss the main limitations of this study about teacher questions. The following constraints could be identified:

The first limitation concerns the small number of participants which was included in this research project. Overall, only lessons by four different teachers were contrasted. The conclusions were obtained by investigating the lessons taught by a rather limited number of teachers and hence, it might be the case that the differences between the various levels and teaching programs were due to the individual teaching styles of the instructors. The influencing aspect of personal teaching style on the distribution of teacher questions has also been indicated by the findings in Pascual Peña's study in 2010. Therefore, this researcher does not suggest that the observations of this study are necessarily applicable to other teaching settings and situations.

Furthermore, it has to be kept in mind that different topic areas were discussed in the individual lessons held by the four teachers. One has to consider that certain subject matters might affect the instructor's choice of questions due to varying educational aims and tasks and thus, results might not be comparable. In addition to the differing topics, it is also paramount to point out that the teachers who participated in this study did not instruct the same class. Thus, teacher questions might have responded to certain student needs or preferences. Moreover, different classroom dynamics which might have influenced teacher questions should also be considered in this regard.

In addition to these constraints, it has to be mentioned that the real purpose of some teacher questions might only be known to the teacher him- or herself. Therefore, the researcher is only able to pinpoint certain outward characteristics of teacher questions but can probably

not grasp all the meaning behind particular questions. This means that some interrogatives might have contained a disguised or hidden feature which could have affected their classification but remained unknown to the researcher.

8. Conclusion

The presented study investigated teacher questions across varying language levels in EFL and CLIL classes. The aim of this research project was to discover whether the amount of open/closed, referential/display, and fact/explanation, reason, opinion/meta-cognitive/inner state, emotion questions changed with the increasing language proficiency of the students. For this reason language- and content-oriented lessons in higher and lower grades by four different English teachers were compared with regard to the characteristics of the teacher questions which were raised in the classroom.

Concerning the proportion of open/closed and referential/display questions, no clear connection between the language levels of EFL and CLIL students and the distribution of open/closed and referential/display questions could be identified. The conclusions which were drawn from a closer analysis of the individual sessions indicated that the openness or closedness of questions and their referential or testing character was prominently influenced by the types of tasks and thereby, the varying information classes they focused on. While brainstorming activities, summarizing and explaining information, and discussions caused a rise in the number of open questions, exercises where students were in need of guidance and where they had to provide personal facts generated more closed teacher questions. Furthermore, the amount of referential questions grew when the instructor asked the class to participate in discussions and interpretations of provided material. When the focus was on summarizing and reviewing information and concepts or when the teacher concentrated on vocabulary, the proportion of display questions increased.

The assumption which suggested more cognitively demanding questions in higher EFL and CLIL grades could be maintained. While the average share of fact questions was dominant in the lowest EFL classes, the mean proportion decreased slightly from grade 8 to 11 and considerably from grade 11 to 12. This trend was even more pronounced in the CLIL sessions, although the overall amount of fact questions was still larger in the 12th CLIL grade

when compared to the highest EFL class, probably due to its content-oriented nature. The reason for the increase of non-fact questions in both programs might be that while in lower levels teachers focus on knowledge which is less cognitively demanding such as facts and vocabulary, the pedagogical aims of activities in higher grades are of more challenging nature. Students in upper levels are more frequently asked to provide explanations, to form their opinion and elaborate on their perspectives, and to forge and present connections between certain concepts.

As a consequence, this study shows that lessons should not be merely analyzed with regard to the types of teacher questions found in them but that the lesson designs and hence, their activities should be included in the examination as well. Thus, the researcher of the present study would like to point out that the observation of interrogatives in a lesson is not complete without an analysis of the types of tasks performed in the session and the activities' characteristics and pedagogical intentions. This implies that teachers should not only know of the different classes of questions but should also be made aware of which activities increase the possibility of what kind of questions. Therefore, teacher training concerning questioning strategies and techniques should also focus on various types of tasks and their immanent potential and susceptibility for triggering certain kinds of teacher questions.

9. References

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10. Appendix

Example analysis

Table 11: Example analysis of EFL1.1

	Form open/ closed	**Function** referential/display	**Content** fact/ opinion explanation reason/ meta-cognitive/ inner states, emotions	**Further comments**
1.12.2014, 11th grade, BMS (Fachschule) 16 students, 5f, 11m (1f left after a few minutes) Tf: Where are the others? Lm: **Vielleicht haben sie sich verlaufen. Keine Ahnung.** (Ls aside talk: 6 secs) Lm: **Ich weiß nicht.** (Ls aside talk: 3 secs) Tf: Are you the last ones, X? (?) X? X!...**2, 4, 6, 8, 10** Lm: **Fehlt niemand.** Tf: **12, 13. Da fehlt niemand? 13.** Lf: **Oja, X und X.** Lm: **Aja, genau. Die kommen vielleicht noch mit der Zeit.** (Ls aside talk: 39 secs) Tf: Okay, I told you we had a guest today. Don't mind her or the thing…Okay. Mhm…Maybe you should come more often, it's so quiet. (Tf and Ls laugh) Tf: Okay. We, no we don't do that…X!...X? Lf: Jo? Tf: (?) Good. Please start it, we're talking about the brain. (Ls talking aside: 8 secs) Lm: **Frau Professor? Aso wir müssen…** Tf: **Mhm? Ganz was Neues. Du hast eh einen Zettel bekommen da.** Lm: Ähm, ja. (?) Tf: **Natürlich. Irgendwo hab ich einen Zettel zu viel.** (Ls talking aside: 4 secs) Lm: **Frau Professor, das wird jetzt aber noch nicht?** (Ls talking aside: 4 secs) Tf: **Da ist alles nass und dreckig.** Good, who wants to start reading?...X (Lm reads from worksheet about brain development: 24 secs) Tf: Good. Okay. Thank you. *Any, any vocabulary questions?* Lm: Pathways? Tf: Pathways ähm. Lm: **Das sind Neuronalverbindungen oder?** Tf: **Genau. Verbindungen, ja. Aso** pathway **ist eigentlich ein Weg. Aber** in this case, ja. *Any other*?...Okay, so please underline…ähm by the time you are 6…your brain si…has the size of an adult's. So it's the thing that grows…you know fast and it's the first thing that grows from the organs and then it's by the time	open open	refer refer	fact fact	

you are six, it already is of an adult's, like an adult's. But, *has it finished developing?* Lm: No.	closed	displ	fact	
Tf: *What is development by the way?* Lm: **Entwicklung**.	open	displ	fact	translation
Tf: **Entwicklung. Ja.** Okay. So it hasn't finished developing. Okay? And then it still grows. Okay? Even though it already has the size of an adult it still grows. And ähm in your teenage years, please underline…teenage years, brain is developing to an adult's brain. Okay? So it's growing but it's not fully developed and then it is developing by making new connecting pathways. Okay, X, do you want to read on? (Lm reading from handout: 7 secs) Tf: Lobes. (Lm reading from handout: 25 secs) Tf: Very good. Bye. [Lf leaving classroom] Tf: Okay, stop, stop, stop. Looking for my…Where did I put my pencil?…Good, so, the frontal and parietal lobes, X, **10:15**. They control speech, thoughts and consciousness. *What is 'consciousness'?* Lf: **Wenn man sich nicht so sicher ist?** Tf: **Ah, das Bewusstsein.** Consciousness **ist das Bewusstsein.** Lf: **Aso**. Tf: You mean you mean self-confidence. Lf: **Ja**. Tf: **Ja**, consciousness **ist das Bewusstsein.** Body movement and coordination. **Ja**? **Auf, auf.** You can see that on the picture. Parietal lobe controls feeling, physical sensation, shapes and positions. Okay? So, they are the last parts of the brain to develop. Can you please underline that. Last parts to develop. Aaand¸ ähm, this may explain why teenagers are sometimes, can you please underline, teenagers…more impulsive. *What is ‚impulsive'?* Lm: **Impulsiv**. Tf: ***What is** 'impulsiv'?* Lm**: Ähm, wenn man ah, ah, wenn man auf alles etwas überreizt reagiert.** Tf: *X?* Lf: **Man reagiert anders?** Tf: **Man reagiert anders, okay.** Lm: **Sehr emotional und sehr vorschnell reagieren.** Tf: Okay. **Ja**, good. Good explanation. ***Ja**, so more impulsive, 'emotional'?* Lm: **Emotional.** Tf: So, **ja**, so you are more impulsive, more emotional. And… Lm: Clumsy? Lf: **Tollpatschig**. Tf: Clumsy **ist tollpatschig, sehr gut. Ja.** But I don't think that's so important. *Likely to have mood swings?* Lm: **Stimmungsschwankungen**. Tf: **Stimmungsschwankungen**, yeah. We already had that with stress. **Ja**? And react emotionally. **Noch einmal, ja?** *Do you, do you see, do you think that's true? That teenagers react more impulsive, are more likely to have mood swings?* Lf: Because they are in their **Pubertät** ahm. Tf: Puberty. Lf: Puberty, **ja**.	open open open open open closed closed	displ displ displ displ displ refer refer	fact fact expl expl fact opi opi	translation First, she wants a translation, and then an explanation because she is not sure if the students understand the meaning of the German word either. "What is impulsive, X?" translation translation The teacher does not know the students' opinion ("Do you think…?").

Tf: ***Ja, and the puberty means what?***	open	displ	expl	"How does puberty influence brain developmen t?"
Lm: **Pubertät**.				
Lf: **Pubertät**.				
Tf: ***Ja, but with the brain development?***	open	displ	expl	
What does the brain do?	open	displ	expl	
Lm: Makes new connecting pathways?				
Tf: It makes new connecting pathways, it's developing. Okay? And the part where your emotions are, has not developed yet. So therefore, sometimes…**ja**. Sometimes I kind of thinks it's just your brains.				
Lf: Ah.				
Tf: Ah.				
(Tf laughs)				
Tf: Yes. Okay, good. Does anybody else want to read on? Yes, X, please.				
Lf: By when you are?				
Tf: **Ja**.				
Lf: Okay.				
(Lf reads from handout: 14 secs)				
Tf: Pruning.				
Lf: Pruning.				
(Lf reads from handout: 9 secs)				
Tf: Good. So. Because I told you the brain is still growing even though it already had the adult's size, of course it has to shrink again. *'Shrink'?*	open	displ	fact	translation
Lf: **Kleiner**.				
Tf: **Klein werden**, very good. So, when you, your brain is shrinking, please underline, brain is shrinking as a teenager. **Ja**? It does some spring cleaning. *What does that mean?*	open	displ	fact	translation
Lm: **Frühlingsputz**.				"How does the brain's spring cleaning work?"
Tf: **Frühligsputz**, okay? *So what does it do?* It throws	open	displ	expl	
out…anything it thinks it doesn't need. Okay? *How does the brain know which things it doesn't need?*	open	displ	expl	
Lf: When it's not important.				
Tf: When it's not important. *How how does it know that this not important?*	open	displ	expl	
Lf: Because you have…more other stuff to do that is more important than that?				
Lm: If you don't know sometimes (?)				
Tf: Okay, okay. So if you don't use that it will throw it out.				
Lf: **Ja. Ja**. If you don't need it.				
Tf: Exactly. Things it do doesn't need. Okay. So. Please underline, ahm throwing out any cells it thinks it doesn't need. And we call that pruning. It's technical term…pruning **heißt zurechtstutzen**, **eigentlich**. Okay, and this is **ein Fachausdruck.** A technical term, pruning. Okay? So, consequently, please underline the last sentence which is very important. You can make yourself more stupid or you can make yourself smarter….Yes, X. *How can you make yourself stupid, X?*	open	displ	expl	
(Ls laugh)				
Tf: Not who is stupid. *How can you make yourself stupid?*	open	displ	expl	
Lm: He is not really stupid. He doesn't know it.				
(Ls laugh)				
Tf: *How can he make himself smarter then?*	open	displ	expl	
Lm: Mhm.				
Tf: Mhm.				
(Ls talking at once: 2 secs)				

Tf: *How can you how can you how can you make yourself more stupid?* Lm: Drink too much alcohol. Tf: Drink too much alcohol. Lm: Poison. Tf: What? Lm: Take some drugs. Tf: Take drugs. All things how you can make yourself more stupid.	open	displ	expl	
How can you make yourself smarter? Lm: Study. Tf: Study. Lf: If you learn.	open	displ	expl	
Tf: Learn, **ja**. Study. *Just by studying I can make myself smarter?* *Can I do anything else?* Lm: Listening to adults, maybe.	closed open	displ displ	fact expl	"Can I do…?" = "How can I make myself smarter?"
Tf: Listening to adults and do what they say. *Do I always have to do what they say?* Lm: No, not if they are also stupid. Lf: No, you just have to think. Tf: You have to think, maybe. Whether whether it's all good what they tell me. Okay, ah X, do you want to read about guy's and girl's brain. Lf: Yes, yes. (Lf reads from handout: 21 secs) Tf: Deficit. Lf: Deficit. (Lf continues reading: 4 secs) Tf: Mhm. (Lf reads from handout: 1 sec)	closed	displ	fact	
Tf: Very good, dyslexia. Okay, so guys' brains, boys' brains are usually larger. *Does that mean they are smarter?* Ls: No. Lm: Yes. Tf: No! As you are sometimes daily proof of that. (Ls laugh)	closed	displ	fact	
Tf: Girls' brains develop more quickly. **Ja**, so that's why you are more grown up usually at the teenage age. Okay? Ah. *Does that mean that girls are smarter?* Ls(m): No.	closed	displ	fact	
Tf: No. But again it just depends on the person, also whether you make yourself smarter or dumber. **Ja**? *Ah, boys 'are more likely' what does that mean? 'Are more likely'?* Lm**: Eher wie.** Tf: *What does that mean?* Boys are more likely to have brain related conditions. Lm: **Anfälliger für.** Tf: **Anfälliger, ja genau.** Very good. ***Sind anfälliger für*** *'brain related conditions'?* Lm: **Wenn man in höherem Alter immer noch auf einem psychischen Level von einem…** Tf: No, no brain related just means **mit dem Gehirn verb, also ah**…it's like, something that's linked to the brain. Lm: **Neuronalverbindungen können sich nicht so gut.** Tf: No, no, no. You are t…, you are thinking too complicated. Brain related just means…**ah Gehirn, etwas das mit dem Gehirn zu tun hat. Etwas was mit dem Gehirn zu tun hat.** Lm: Okay.	open open open open	displ displ displ displ	fact fact fact fact	The teacher simply wants a translation here. The teacher wants a translation here.

Tf: Okay? *So what is 'Attention Deficit Disorder',' ADD'?* In German. Attention Deficit Disorder.	open	displ	fact	
Ls: **Aufmerksamkeitsdefizit**.				
Tf: *Ja, how do we call that?*	open	displ	fact	
In short?	open	displ	fact	
Lm: **AD**.				
Tf: **AD**				
Lm: **HS**.				
Tf: **HS. ADHS**, in English we call it ADD. Okay? Autism you know.				
Lm: **Autismus**.				
Tf: **Autismus**. *And 'dyslexia'?* **Legasthenie**.	open	displ	fact	
Lf: Ah.				
Tf: Ah. Ja?				
(Ls talking aside: 7 secs)				
Tf: X, please read on! Things that can go wrong with the brain.				
(Lm reads from handout: 16 secs)				
Tf: Very good.				
(Lm reads from handout: 7 secs)				
Tf: X.				
(Lm reads from handout: 7 secs)				"What kind of trouble? - Teacher wants a list of troubles.
Tf: Very good. Okay. So ah, the brain controls everything in your body, so of course when something is wrong…that means trouble.				
Okay? Ahm, *what kind of trouble?* Diseases, mental illnesses, or head injuries. So please underline diseases, mental illnesses, head	open	displ	fact	
injuries…Brain tumors. *Do you do you know what that is?*	closed	refer	fact	Teacher accepts 'yes'. → closed
Lm: **Ja**.				
Tf: **Ja**. '*Cerebral palsy'?* **Kinderlähmung**…Epilepsy, you all	open	displ	fact	
know what that is. *Headaches you know, migraines, 'concussions'?*	open	displ	fact	
Lf: **Gehirn**?				
Tf: Mhm?				
Lf: **Gehirn**. **Nein.**				
Tf: **Ich versteh dich nicht, X. Du musst lauter sprechen.**				
Lf: **Nein, nein, falsch.**				
Tf: Concussion is **Gehirnerschütterung**. *What is a concussion?*	open	displ	expl	The students should provide an explanation here because the teacher has already given a translation
Lm: **Eine Gehirnerschütterung.**				
Tf: ***Was ist eine Gehirnerschütterung?***	open	displ	expl	
Was ist das?	open	displ	expl	
Lm: **Wenn das Gehirn an die Schädeldecke knallt und dadurch zu viele Neuralverbindungen (?)**				
Tf: **Ja**, very good. **Ja**, very good. ***Ja**, so your brain is shaking in your what?*	open	displ	fact	
Lm: In you skull.				
Lm: Skull.				
Tf: Skull, very good. And therefore, it gets hurt. Okay? *Ahm, and other head injuries, 'meningitis' and 'encephalitis'?*	open	displ	fact	
What's that?	open	displ	fact	
Lm: **Meningitis und Encephalitis.**				
Tf: ***Gehirnhautentzüdnung**, what how who, what causes meningitis and encephalitis?*	open	displ	fact	
Lm: **Zecken**?				
Tf: Mhm?				
Lm: **Zecken**?				
Tf: Okay, but I mean…*what is '**Zecke**' by the way?*	open	displ	fact	
Lm: Ticks.				
Tf: Ticks, very good. *Ahm, is it really the tick?*	closed	displ	fact	
Does the tick crawl in your head?	closed	displ	fact	

Lm: Yes.				
(Ls and Tf laugh)				
Lm: Bacterias.				
Tf: *Bacteria or?*	open	displ	fact	
Lm: Virus?				
Tf: Viruses. Very good. Okay, good. Please take out this sheet of paper. The one you know from last time.				
Lf: **Ich hab diesen Zettel nicht.**				
Lm: **Sie war nicht da am Freitag.**				
Lm: **Ich war auch nicht da.**				
Tf: **Dann liegt er in deinem Bankfach.**				
Lm: **Ich war auch nicht da.**				
Tf: **Dann liegt er in deinem Bankfach.**				“What can you do for the brain?” → This is simply the headline of the next worksheet, not a real teacher question.
(Ls talking aside: 11 secs)				
Tf: Okay. What can you do for your brain?				
Lm: Nothing.				
(Ls talking aside: 7 secs)				
Tf: Yes, please, X.				
(Ls reading from handout “What can you do for your brain?”: 1 sec)				
Tf: X.				
Lm: **Ich hab keinen, deswegen.** s				
Tf: **Ja, setzt dich bitte z’rück. Zum X**.				
Lm: **Brauch ich was mit oder?**				
Tf: **Ja**, your brain.				
Lm: **Den Kopf.**				
(Ls continues reading: 22 secs)				
Tf: Very good. Okay, eat healthy food. *What is healthy food?*	open	displ	expl	Here, the teacher asks the students to explain the concept of healthy food.
Ls: Vegetables.				
Tf: Vegetables, okay.				
Lm: **Eine ausgewogene Ernährung.**				
Lm: Vitamins.				
Tf: Vitamins.				
Lm: Fruits.				
Tf: Fruits.				
Lm: Salad.				
Tf: **Ja**, salad.				
Lm: **Eine ausgewogene Ernährung.**				
Lm: Wow, X.				
Tf: In English.				
Lm: **Eine ausgewogene Ernährung.**				
(Ls laugh)				
Lm: Balanced diet.				“What else?” – the teacher wants other factors of a healthy diet listed.
Tf: Balanced diet. A balanced diet, yes. *What else?*	open	displ	fact	
What does that imply?	open	displ	expl	
Does it only mean I only eat…?	closed	displ	fact	
Lm: Eat everything, but not too much.				
Tf: **Ja**, but not too much. Okay, so.				
Lm: And unhealthy things not too often.				
Tf: *What are unhealthy things?*	open	displ	expl	
Lm: Like burgers or pizza.				
Lm: Junk food.				
Tf: *Junk food, why?*	open	displ	rea	
But what is in burgers?	open	displ	fact	She wants to hear the “3 bad things”.
Lm: Fat, salt, sugar.				
Tf: Fat, salt, sugar. Very good. The three, three bad things. *But do I need fat?*	closed	displ	fact	

Ls: Yes.				
Tf: Very good. **Ja**. We didn't even do the food yet. Okay. Good. Eat healthy food. Don't drink alcohol or smoke cigarettes. *Why?*	open	displ	rea	
Lm: Because if you drink too much alcohol your neuronal pathways.				well-known fact – consequence (not an elaborate explanation)
Tf: Don't think so complicated. *What happens?*	open	displ	fact	
Lm: If you drink alcohol, you get dumb.				
Tf: You get dumb, it damages. *What happens?*	open	displ	fact	
Lm: Your pathways break.				
Tf: **Ja**, cells die.				
Lm: **Aber auch erst ab einer gewissen Menge.**				Here the teacher asks for specific information already mentioned by a student before.
Tf: Yes, of course. *And what else shouldn't you do?* X said that.	open	displ	fact	
What else?	open	displ	fact	
Don't drink alcohol, what else?	open	displ	fact	
Lm: What?				
Tf: *How to make yourself dumber?*	open	displ	expl	
You said don't take?	open	displ	fact	
Lm: Take drugs.				
Tf: Ja, please write that to don't drink alcohol. Don't take drugs. So, drugs are also bad for you brain. Wear a helmet of course, so to protect it. And use your brain by doing a lot of things that forces it to work like ahm…reading, playing music, instead of playing, X, please. Guys, instead of playing music please write playing an instrument. So, if you, if you play an instrument, this makes your brain work. And solving puzzles. *What else keeps your brain active?*	open	displ	fact	The teacher wants to have factors listed that positively influence the brain in addition to the ones listed on the worksheet.
Lm: Reading.				
Lf: Reading.				
Tf: Reading, that's already there. Yes. *What else?*	open	displ	fact	
Lm: Ähm, like interactive quizzes, on the computer?				
Tf: **Ja. Ja,** like puzzles.				
Lm: Activity.				
Lm: Activity.				
Tf: Yes. Activity games.				
Lm: Knowledge games.				
Tf: *Is doing sports good for your brain?*	closed	displ	fact	
Ls: Yes.				
Tf: *Why?*	open	displ	rea	
Lm: Because your brain gets more oxy, oxygen.				
Tf: Your brain gets m, **ja**. So please write down do sports. To that. Do sports. *Why else is it good for you?* We had that for the video games.	open	displ	rea	
Lm: Because of cor.				
Lf: Hand-eye-coordination.				
Tf: Very good, hand-eye-coordination. **Ja**, so that's why it's good. Ah, something funny you can all try today, homework. Brush your teeth with the wrong hand.				
Lm: Oh.				
Lf: Das kann ich nicht.				
Lm**: Wie geht'n das?**				
Tf: Try it, X. You haven't even tried it. Brush, please write down, brush your teeth with the wrong hand. X. Aso, X. Write down. Brush your teeth with the false hand.				
(Ls talking aside: 7 secs)				
Tf: *Well, do you have an electric toothbrush?* Ah, cheating.	closed	refer	fact	
(Ls talking aside: 5 secs)				
Tf: **Andere Hausübung...**				

Lm: **Nana, nur eine Frau Professor.** Lm: **Das ist mehr als genug. Das ist eine große Hausübung.** Tf: **Bis Mittwoch auf moodle.** (Ls talking aside: 13 secs) Lm: **Danke Frau Professor, jetzt ich hab ich Lust auf Nudeln.** Tf: **Was?** Lm: **Jetzt hab ich Lust auf Nudeln wegen Ihnen.** Tf: I said moodle, not noodle. Lm: **Ja, trotzdem hab ich jetzt Lust drauf.** (Ls talking aside: 14 secs) Tf: Ahm, it's a video. Ls: Ah. Lm: Ah**, schon wieder.** Tf: Yes. Ahm, until Wednesday…Where are you? Here. Lm: Yeah. Tf: Ahm,…brain, homework watch movie. Lf: **Nur anschauen?** Tf: **Ja**, you also have to answer questions. Lm: Ha. Lm: Hunger games, mocking jay maybe? Tf: What? Lf: Movie? Lm: Hunger games? Tf: **Ja**, it's called homework watch movie. Lm: **Ist das ein Film?** Lf: **Ein Film?** Tf: No, it's a short clip made for children. So, I hope you understand it all. Lm: No. Lm: In German? Tf: Do you think it's in German, X? Like that, see. Answer these questions. What does the nervous system do. (Ls talking aside: 3 secs) Tf: Boys! Okay, until Wendesday. We will compare it. On Wednesday. Okay? (Ls talking aside: 4 secs) Lm: **Wir können's uns einfach jetzt anschauen oder?** Tf: **Na**. Lm: **Wieso?** Tf: **Weil es sein kann, dass es ihr könnt's das nicht so schnell mitschreiben wie. Ihr müssts immer wieder stoppen.** Lm: **Ist da das Worddokument dabei?** Tf: **Jaja, das ist das Worddokument das ich aufg'macht hab.** Lm: **Kann ich's am Computer gleich machen?** Tf: **Nein, ihr könnts ja das nicht stoppen.** Lm: **Ja, aber können wir's zuhause gleich am Computer machen?** Tf: **Aso, jaja, natürlich. Wir vergleichen's ja nur**. (?) *Okay, does anybody know some exercises to train your brain?* Yes. Lm: I know a f ahm finger exercise. Tf: **Ja**? Lm: That's one is. Ahm…**So irgendwie geht das. Wie man.** Lm: **Was**? Tf: **Was**? Lm: **Immer gegengleich.** Tf: Ah. Lm: **Gegengleich.**	open	refer	expl	She wants students to explain various brain exercises clarification request

Lm: **Das man zum Schluss sozusagen immer auf dem fal falschen Finger, wissen Sie was ich mein?** Tf: **Ja**, that's really complicated. Lm: **Ja, ich hab selber ein Jahr gebraucht bis ich's hatte.** Tf: Okay. Lm: **Frau Professor**. Tf: Yes? O **ja**. That one. (Ls talking aside: 4 secs) Tf: Turn, change hands, X. No, it's that complicated. (Tf laughs) Tf: You are very good at that. *Anything else?* Lm: **Frau Professor.** Tf: Oh. (Ls talking aside: 7 secs) Tf: **Aber**. **Ja**, X, that's because you you you do sports and you play video games and therefore you are very good in that stuff. Lm: Aha. Lm: Aha. Lm: **Nein**. Lm: **Uh, Frau Professor.** Tf: Well, this is not something for your brain, it's just… Lm: That's just ugly. (Ls talking aside: 5 secs) Tf: Okay, interesting facts about the brain. X. Ssh. (Lf reading from handout: 7 secs) Tf: Guys, please. Listen to X. (?) Lf: **Nochmal von neu?** Tf: **Ja, bitte.** (Lf reads from handout: 5 secs) Tf: Mhm. (Ls reads from handout: 23 secs) Tf: Like any other. Good. We already talked about that, 20 percent of your body's oxygen. Ahm and so ah cells start to die after 3 to 5 minutes no oxygen. Okay? Ah it says here the brain reaches it full weight when you are 6 years old. *How heavy is a brain?* Lm: 1.5. Lf: **1,5 Kilo?** Tf: Pardon? Lm: 2.5. Tf: 1.5 kilos. Very good. Okay. Good, we still have a lot of time. I think now it do need the. Ahm please take out a sheet of paper. Lm: No. Tf: Ah, no no no no. Lf: No no no no. Tf: No no no no, I still have something for you to do but I didn't copy it. Can somebody please go copy something for me? Then you don't have to write, otherwise you have to write. Lm: **Bitte** ladies first. Tf: **Achtmal ah auseinander schneiden, X**. Okay, until X is back please take out a sheet of paper and brainstorm Lm: You lied to us. Tf: No it's not really writing, it's just brainstorming. Brainstorm. Lm: Brainstorm. Tf: Make a mind map on brain fitness. (Ls talking aside: 13 secs) Lm: **Frau Professor, haben Sie vielleicht zufällig einen Zettel?** Tf: **Hab ich zufällig was?**	open open	refer displ	expl fact	She wants further exercises explained.

Lm: **Einen Zetteln.** Tf: **Einen Zettel?** Lf: **Man schreibt's hinten drauf.** Tf: **Ja, oder man schreibt's hinten drauf.** (Ls talking aside: 9 secs) Tf: **Ja**, brain fitness. Write down different kinds of…what are things that are good for you brain. (Ls talking aside and working on task: 32 secs) (Tf talking aside to one student): What kind of music? Heavy metal? Aha.) (Ls talking aside and working on task: 9 secs)				Side questions: Op/dis/expl Cl/dis/expl
Tf talking: In general. *In general, what kind of music is important?*	open	displ	expl	Here, the pupils should explain that in more detail, not simply list facts.
What kind of music is it?	open	displ	expl	
(Ls talking aside and working on task: 50 secs)				
Tf: *When you write down eat healthy food, what kind of food?*	open	displ	expl	
Lm: Vegetables. Lm: Vegetables. (Ls talking aside and working on task: 6 secs)				
Tf: *So what kind is healthy?*	open	displ	expl	
Lm: Junk food. Lm: Not unhealthy. Lm: Bananas. Apples. (Ls talking aside and working on task: 1 min 3 secs) Tf: Thank you X. Some things that I saw ah, X wrote fresh air. Everybody should have fresh air or oxygen. Lm: **Das hat sie von mir abgeschrieben.** Lf: Joo. Lm: **Nein, ihr zwei habt von mir abgeschrieben. Schau, da steht's.** Fresh air. Tf: And X had sleep which is also very important. Lm: And music. (Ls talking aside: 7 secs) Lm: **Ich hab** play an instrument. Tf: **Ja**, most, lots people have that but these are… (Ls talking aside: 11 secs) Tf: Okay, please fill in the words in the text. Before you do that though we should talk about the vocabulary because it's a bit difficult. (Ls talking aside: 5 secs) Tf: **Irgendwem hab ich jetzt keins geben.** Lf: **Der X.** Lf: **Der X.**				
Tf: **Ah, der X**…Okay, vocabulary. Blood **is klar**, body **is klar**, cells **is klar**. '*Chromosome'?*	open	displ	fact	translation
Ls: **Chromosome.**				
Tf: *Good, 'computer tomography'?*	open	displ	fact	
Lf: **Computertomographie**. Tf. **Computertomographie, ja?** Lm: **Jaja**.				
Tf: '*Detect'?*	open	displ	fact	
Lf: So (?) Tf: Nonononono, no touch. Detect is like find. Lm: Detective. Lf: **Ja eh, to find.**				
Tf: Find, **ja**. Disease **is klar**. '*EEG'?*	open	displ	fact	
Lm: EEG. Tf: **EKG.**				

Lf: **Fürs Gehirn.**				
Tf: **Ja**. Heart **is klar**, health. *'Inherited'?* Ahm, **geerbt, vererbt. Vererbt.** Occurs is like happen. **Ja**? Oxygen **is klar**, remembering	open	displ	fact	
is klar. '*Remove'?*	open	displ	fact	
'Remove'?	open	displ	fact	
'Remove'?	open	displ	fact	
Lf: **Weggeben**.				
Lm: **Wegnehmen**.				
Tf: **Wegnehmen**, yes. '*Replace'?*	open	displ	fact	
Lf: **Halt**. Ahm.				
Lm: **Wiederherstellen**.				
Tf: **Ersetzen**.				
Lf: **Ersetzen**.				
Tf: Very good, X. Speak, stroke. '*Stroke'?*	open	displ	fact	
Lm: Strike, stroke.				
Tf: Strike, stroke, **ja**. '*Stroke'?*	open	displ	fact	
'A stroke'?	open	displ	fact	
Lf: **Das ist nicht, wenn man sich so?**				
Tf: **Jaja**, but in this case it's a disease. *It's like a heart attack and 'a stroke'?*	open	displ	fact	
'Stroke'?	open	displ	fact	
Lm: **Schlaganfall**?				
Tf: **Schlaganfall**. Very good. Syndrom **ist klar**, tumors **ist auch klar**. Good, please try to fill in.				
(Ls talking aside and doing task on handout: 1 min 51 secs)				
Lm: **Was ist noch einmal ähm vererbt?** Remembering?				
Tf: Inherited.				
Lm: **Was ist der Schlaganfall?**				
Tf: Stroke.				
Lm: Stroke.				
(Ls talking aside and doing task: 56 secs)				
Lm: Occur **heißt nochmal?**				
Tf: Mhm?				
Lm: Occur.				
Tf: Like happen.				
(Ls talking aside and doing task: 58 secs)				
Lm: **Tschuldigung, was ist** detect **nochmal?**				
Tf: Like find.				
(Ls talking aside and doing task: 1min 56 secs)				
Tf: Okay, let's compare. Might be a bit…X, are you raising your hand or stretching?				
Lm: No.				
Lm: No, no.				
Tf: Does anybody want to start?				
Lf: **Erster Satz?**				
Tf: Yeah, X.				
(Lf reading from handout: 2 secs)				
Tf: No.				
Ls: Disease.				
Tf: Diseases can damage your brains. **Ja**? X.				
(Lm reading from handout: 5 secs)				
Tf: Very good.				
Lm: **Soll ich gleich weitermachen?**				
Tf: No. Yes, X.				
(Lm reading from handout: 5 secs)				
Tf: Very good. Read a bit more slowly because the other all are raising and a few are writing still.				

Lm: Raising. Tf: **Ja, er war's, wenn er so unschuldig schaut.** Lm: **Ich hab nur aus dem Fenster g'schaut.** (Ls talking aside: 5 secs) Tf: X. (Lm reading from handout: 8 secs) Tf: **Yes**. Brain cells die in certain areas. Doctors call this a stroke. X. (Lm reading from handout: 8 secs) Tf: Mhm, very good. X. (Lf reading from handout: 5 secs) Tf: I didn't understand the first word. Lf: Tumors. Tf: **Ja**. Lf: **Weiter oder?** Tf: **Ja**, if you want. (Lf reading from handout: 4 secs) Tf: Very good. Lf: What what? Tf: Ah. Remove, tumors growing in your brain, when cells grow too fast and destroy healthy ones. Sometimes doctors can remove…*Many diseases?* X.	closed	displ	fact	
(Lm reads from handout: 3 secs) Tf: Yeah, inherited from parents and grandparents. *In Down's?* You know that, it's the same in German.	closed	displ	fact	The students have to choose the correct answer from a list of verb forms and nouns. Therefore, these 10 questions are closed questions (multiple choice).
Ls: Syndrom. Tf: Syndrom, **ja**, in Down's Syndrom…*there is one*	closed	displ	fact	
Lf: Chromosome. Tf: Chromosome too many. *Alzheimers disease, X?*	closed	displ	fact	
Lf: Disease, **das hab ich nicht.** Tf: *Alzheimers disease?*	closed	displ	fact	
Lf: Occurrs? Tf: Very good. Occurrs at an older age. *Victims have problems?*	closed	displ	fact	
Lf: Remembering. Tf: Remembering things and cannot care for themselves. *Today modern medicine can help?*	closed	displ	fact	
Lf: Detect? Tf: Detect, very good, brain diseases with new machines. *The?*	closed	displ	fact	
Lm: EEG. Tf: The EEG records what happens in the brain. Aha. *What? Ha?*	closed closed	displ displ	fact fact	
Lf: Computer? Tf: Computer tomography. CT…sends x-ray through your brain which can then put together a picture. Very good. Thank you. See you on Thursday ah tomorrow. Ahm, the day, the day after tomorrow, we'll compare the homework! Lm: The day after tomorrow? **Guter Film.** Tf: The day after tomorrow we'll compare the homework. Lm: The movie? Lm: **Guter Film. Kennen Sie ihn?** Tf: No. Lm: **Das ist einer der wenigen noch wirklich guten Weltuntergangsfilmen, weil…** Transcribed time: 45:52				

Total number of teacher questions in EFL1.1: 106	Open: 82 (77.36%) Closed: 24 (22.64%)	Referential: 8 (7.55%) Display: 98 (92.45%)	Fact: 73 (68.87%) Opinion/reason/explanation: 33 (31.13%) Meta-cognitive: 0 (0%) Inner states/ emotions: 0 (0%)	

English abstract

In this study the author discusses whether teacher questions from the instructional register change across different language proficiency levels in EFL and CLIL classrooms. Broidl classifies teacher questions from upper secondary EFL and CLIL classes with the help of Dalton-Puffer's taxonomy (2007) which categorizes interrogatives with regard to their openness/closedness, the information status of the questioner (referential/display), and the type of knowledge targeted in them (fact/explanation, reason, opinion/meta-cognitive/inner state, emotion), and then compares the results with her observations from a previous study on teacher questions in lower secondary EFL and CLIL lessons (2014), based on data obtained by Kornfeld (2012). The author's findings indicate that the open/closed and referential/display character of questions is not influenced by the students' increasing language skills but by tasks designs and thus, by the varying focus on different information types in the activities. While brainstorming tasks, discussions, and summarizing and explaining information increase the proportion of open format questions, the share of closed questions grows when the teacher has to guide and support the learners through interrogatives or when s/he asks for personal information. Vocabulary exercises and activities which aim at summarizing and reviewing information cause a rise in the amount of test questions, whereas information seeking questions are more frequently observed in tasks which concentrate on the students' opinions and interpretations of information. Furthermore, her study shows that questions which elicit cognitively demanding information are more frequently posed in higher proficiency grades than in lower level classes where there is still a greater focus on factual knowledge and hence, on lower order thinking skills. Broidl points out that pedagogical objectives behind tasks in higher levels could be characterized as being of more challenging nature because leaners are more frequently asked to provide explanations, to form and present a point of view, to elaborate on their perspective, and to understand and demonstrate connections between concepts. The author indicates that a study of teacher questions is only complete when an analysis of the session's task designs and the activities' characteristics and pedagogical aims is included. Moreover, she suggests that teacher training should not only provide coaching concerning questioning techniques but should also convey which tasks have a susceptibility for causing certain kinds of interrogatives. Thus, instructors

should become aware of the activities' immanent potential for triggering open or closed, referential or display, and fact or non-fact questions.

German abstract

Diese Studie untersucht ob Lehrerfragen, welche die Sprache oder den Inhalt der Unterrichtseinheit betreffen, sich mit steigenden sprachlichen Fremdsprachenfertigkeiten der SchülerInnen verändern. Dafür organisierte Broidl Lehrerfragen aus EFL- und CLIL-Stunden aus der Oberstufe nach Dalton-Puffers Klassifizierung als offene/geschlossene, authentische/testende Fragen und bezüglich der Art der Information, auf die sie sich beziehen (Fakt/Erklärung, Grund, Meinung/meta-kognitive Information/Gefühl, Emotion). Diese Resultate verglich sich sie mit ihrer früheren Studie über Lehrerfragen in EFL- und CLIL-Unterstufenstunden (2014), Unterrichtseinheiten welche von Kornfeld (2012) gesammelt wurden. Die Daten zeigen, dass die Anzahl von offenen/geschlossenen und authentischen/testenden Fragen nicht von den Sprachkenntnissen beeinflusst wird, sondern durch die Aufgabenstellung und deren Fokus auf verschiedene Informationsarten. Brainstorming, Diskussionen und das Zusammenfassen und Erklären von Information lassen den Anteil von offenen Fragen steigen, während mehr geschlossene Fragen auftreten wenn die Lehrperson die Klasse durch Fragen unterstützt und leitet oder wenn sie nach persönlichen Informationen fragt. Vokabelübungen und Aufgaben, welche sich mit Zusammenfassen und Wiederholen von Information befassen, produzieren mehr Testfragen. Authentische Fragen treten vermehrt während Diskussionen und Interpretationen auf. Außerdem zeigt die Studie, dass mehr Fragen die auf höhere kognitive Leistungen abzielen in der Oberstufe gestellt werden, während in unteren Klassen der Fokus meistens auf das Wiedergeben von Fakten liegt. Diese Tendenz erklärt Broidl damit, dass in höheren Levels die pädagogischen Intentionen von Übungen zunehmend auf Erklärungen, das Formen, Präsentieren und Darlegen der eigenen Meinung und das Verstehen und Aufzeigen von Zusammenhängen abzielt. Aus diesem Grund meint Broidl, dass eine Untersuchung von Lehrerfragen auch eine Analyse von den Übungen und deren Charakteristiken und pädagogischen Absichten miteinschließt. Daher schlägt Broidl vor, dass bei der Ausbildung von Lehrpersonen nicht nur Fragetechniken vermittelt werden sollten, sondern auch aufgezeigt werden sollte, welche Arten von Übungen welche Fragetypen hervorrufen.

LehrerInnen sollten nicht nur die verschieden Klassen von Fragen kennen, sondern sich auch bewusst sein, welches Potenzial verschiedene Aufgaben haben um offene/geschlossene, authentische/testende und faktische/nicht-faktische Fragen zu bewirken.

Curriculum Vitae

Personal information

Name:	Sophie Broidl
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Education

2010/10 – present	University of Vienna, teacher training English/Psychology&Philosophie
2009/06	School-leaving examination
2001/09 – 2009/06	Secondary School, Krems an der Donau, Lower Austria
1997/09 – 2001/06	Primary School, Straß im Straßertal, Lower Austria

Qualifications and Work Experience

2009/09 – 2010/07	Au pair in Belfast, Northern Ireland
Since 2010	Coaching English (privately)
2013/02 – 2013/05	English teacher for children at VHS Urania
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