VIEW[z]

CURRENT RESEARCH ON CLIL 2

EDITED BY
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LETTER FROM THE EDITORS

Dear Readers,

As you can see, last year's new feature of a thematic special issue of *VIEWS* is being continued. Again, the theme is *Content and Language Integrated Learning* (CLIL), which is a strong sign, we feel, of the particular attention this topic is receiving at the moment. You can read up more on the state of the field in Ute Smit's introduction. For the moment we'd just like to mention that the ten papers featured in this issue are a selection of the papers presented at a workshop which took place at the Vienna English department in September 2007.

And there is an announcement to make: a further special issue is in the making for next year. This time the topic will be *instructed second language learning* and it will be edited by Julia Hüttner and Barbara Mehlmauer-Larcher.

With our best wishes,

THE EDITORS

Introduction

Ute Smit

Similar to last year's Special Issue of *VIEWS* (Dalton-Puffer & Nikula 2006), this issue offers insights and multifaceted 'views' on current applied linguistic research into CLIL (Content and Language Integrated Learning), i.e. on educational practices that are at least partly undertaken in a language other than the learners' first language(s) or established medium(s) of instruction (Dalton-Puffer 2007). That this issue is already the second one on CLIL within only one year is a good indication of heightened activities of researchers who want to find out more about this exponentially exploding teaching approach and its implications on students, teachers and the teaching and learning processes. The 10 contributions included in this issue are based on papers given at the 2nd Vienna Symposium of the AILA Research Network (www.ichm.org/clil/) on "CLIL and immersion education: applied linguistic perspectives" (20-22 Sept. 2007), which brought together mainly European researchers of diverse academic standings, ranging from graduate students to CLIL practitioners and well established researchers in the field. This diversity functioned as catalyst to vibrant and enlightening discussions on diverse aspects relevant to CLIL. As reflected in the papers of this issue, the correlating wide scope is also apparent in the object of research itself as well as the multilayered investigative approaches taken towards describing the manifestations of CLIL.

To begin with, CLIL is a truly European topic, spanning the continent geographically from the North (Sweden) to the South (Spain). What is true of most educational issues also applies to CLIL in that it comes in a wide range of shapes and sizes (Marsh & Wolff 2007). There are differences as regards the population segments, ranging from elite to mainstream, as well as age groups, starting at around year 4 and expanding increasingly to tertiary level (e.g. Breidbach, Bach & Wolff 2002; Dalton-Puffer & Smit 2007; Eurydice 2006; Wilkinson 2004; Wilkinson & Zegers 2007). The learner groups themselves vary from relatively monolingual/-cultural in the dominant national language to highly multilingual/-cultural. Additionally, the programmes come in diverse specifications as regards types of teachers involved, relevance of content vs. language learning, learner assessment and, very importantly, the type and amount of target language usage. Finally, while

English is the by far most popular target language, CLIL is also undertaken in other languages, which require investigative attention as well (e.g. Van de Craen, Ceuleers & Allain 2005).

The richness and flexibility of CLIL as teaching approach is also reflected in the range of research perspectives pursued. As illustrated in the papers here, at stake are:

- discourse-pragmatic aspects of CLIL classroom talk;
- short- and long-term effects of CLIL on target language proficiency;
- comparative analyses of teachers' performance in CLIL vs. L1 vs. target language lessons;
- developing CLIL teaching materials by taking into consideration the content-specific concepts to be learnt as well as the relevant linguistic resources;
- CLIL-sensitive means of assessment;
- pedagogical tools for CLIL teacher education; and
- CLIL as a heuristic in describing necessary conditions for successful teaching and learning, which by nature always concerns content and language.

As this range of research interest suggests, the insights gained in the various research undertakings are multiple; and yet, the resulting diversity of findings should not distract from the orientation the ReN investigations share: to analyse the specificities of CLIL classroom practices in relation to student learning in the content subject and the respective language. While the ulterior motivation certainly is to arrive at a theoretical model of CLIL teaching, the complexity of the subject matter, combined with the early stages of research activity has made it very clear that generally applicable interpretations can only be reached step-wise, by focusing closely on the situatedness of specific CLIL programmes.

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Lexico-Grammar in the Essays of CLIL and non-CLIL Students: Error Analysis of Written Production

Christina Ackerl, Vienna

1. Introduction

Content and Language Integrated Learning (CLIL) is a rather recent teaching approach in second language education, which enjoys great popularity and has already been introduced in many European countries including Austria. This paper, which can be regarded as a preview of my M.A. thesis still in progress, is concerned with a CLIL programme in Vienna called Vienna Bilingual Schooling (VBS).

The central question is fundamental to CLIL research in general, namely: why are we convinced that the CLIL approach is beneficial? On the one hand, there are theories of second language research supporting the CLIL approach; on the other hand so called outcome-oriented studies investigating the achievements of CLIL students also demonstrate the positive impact of CLIL on language skills. This paper has its focus on written competence, exploring the lexico-grammar in the essays of VBS and non-VBS students, which is particularly interesting when bearing in mind that the effect of CLIL on the acquisition of the target language production is a matter of great debate (Gabe & Stoller 1997: 6). In this paper, I attempt to determine whether at the end of their school career VBS pupils have reached a higher level of written proficiency than mainstream (non-VBS) pupils due to their exposure to a different language environment.

Since CLIL programmes differ in various aspects regarding their implementation, a short description of the VBS programme will be provided, followed by a short description of my data and methods. Finally, I will present and discuss first results of my research.

2. Vienna Bilingual Schooling: some facts

VBS is a concept developed for Austrian (more specifically, Viennese) mainstream schools from kindergarten to upper secondary school which provides for bilingual education in English and German. This school initiative project is coordinated by the European Office of the Vienna Board of Education (http://www.wien.gv.at/ssr/allgemeines/vbs.htm) and was put into practice for the first time in a primary school in September 1992. Since 1998 it has been introduced on all educational levels, comprising seven elementary schools, eight lower secondary schools and two upper secondary schools at the moment. The number of bilingual schools remains rather stable since it is not expected that the number of English speaking children in Vienna will increase.

Students are instructed in both languages – German and English – in the content subjects by an Austrian subject teacher in collaboration with a teacher who is a native speaker of English. It is envisaged that the proportion of the use of either language is balanced, i.e. half German and the other half English input. However, subjects like Music, PE or Arts and Technology are taught exclusively in one language, English or German, depending on the respective teacher. What differentiates VBS from other Austrian CLIL models, i.e. EaA (English as a working language), is that English is also used as a lingua franca among the students due to their different mother tongues. More detailed information on VBS can be found in Crichton (2006).

3. Data and method

My study is based on ten essays produced in the course of the Matura (school-leaving exam at the end of 12th grade in Austria) by VBS students and non-VBS students. Five papers of each group were selected and it is worth mentioning that the respective teachers were consulted to exclude 'outliers' (exams in which the performance of a student did not correspond to his or her 'typical' performance). Attention was further paid to include papers of 'weaker' as well as 'more proficient' students, on the one hand, to make the study more representative, and on the other hand to avoid comparison of the best pieces of one group to the worst ones of the other group, which would distort the results of the whole analysis.

The students of both groups have German as a mother tongue, were at the age of eighteen, visited the same institution – a Viennese secondary school – and produced their essays under exam conditions (limited time, pressure, no external help). However, it has to be taken into consideration that the essays

themselves differed according to genre, length and topic due to different tasks and options for choice. The VBS students chosen had four years of CLIL education, whereas the regular students were educated according to the standard Austrian curriculum, confronted with English mainly during their weekly English lessons.

The underlying method of my research is error analysis: an approach which was very popular among linguists during the 1980s (Ellis & Barkhuizen 2005), involving the "detailed description and analysis of the kinds of errors second language learners make" (Lightbown & Spada 1999: 73). It has been pointed out by many researchers in the field of SLA that errors are a "virtual inevitability" (Norrish 1983: 113). Corder (1967: 23f.), also referring to first language acquisition, considers errors as the evidence that the learner's "transitional competence" or "interlanguage", a term coined by Selinker (1972), is in fact rule-governed and not simply mere imitation. In this sense the analysis of errors can be viewed as the description and analysis of the interlanguage of learners at a certain stage in their SLA process.

My results below are based on a differentiation of errors according to linguistic category. This type of taxonomy focuses first on the level at which the error occurs. This leads to a differentiation between substance, text and discourse level errors. Regarding written production, each level can be further subdivided: misspellings, punctuation as well as dyslexic errors belong to the category of substance errors, whereas lexical and grammatical errors are acknowledged as errors on the text level. Discourse level errors are strongly related to content and refer to all instances where coherence is failed to establish. Further, the class of error is specified indicating which word class (e.g. noun, verb, adjective) is affected by the error. Finally, rank and system (tense, number, voice) are assigned to the error. (James 1998: 105-162; Dulay, Burt & Krashen 1982: 138-198). The advantage of this classification is that it is based on well established categories and thus easily accessible. In my thesis, however, this classification scheme will be supported by an analysis of errors from other perspectives, such as surface structure or comparative taxonomy.

4. Findings

The first step was to determine the overall number of errors in the student papers. Bearing in mind that error identification is sometimes rather subjective and results in diverse judgements even among native speakers of the target language, this was quite a challenging undertaking and not always

clear-cut. This subjective component of error analysis has been discussed by many authors, for example Lennon (1991: 183), in greater detail.

Table 1. First results

	CLIL students	Non-CLIL students
Erroneous	4 %	5 %
Error-free	96 %	95 %
Text level	67 %	90 %
Substance Level	32 %	9 %
Errors in VP	25 %	38 %
Other errors	75 %	62 %
Tense errors	31 %	63 %
Other VP errors	69 %	37 %

From the table above, presenting the first results, the comparably high percentage of errors on the substance level in the papers of VBS students is rather striking. It has to be pointed out that it was found that VBS students produce longer sentences than non-VBS students and as a logical consequence there is a higher potential for punctuation mistakes. Furthermore, the use of a wider range of vocabulary, including technical terms or foreign words, would account for the greater number of spelling errors in comparison to their non-VBS counterparts. For illustration, some examples of spelling errors detected in the works of VBS students are porcelaine, incompitence or priviledge, whereas non-VBS students displayed difficulties with rather common words such as agree.

On the text level, errors within the verb phrase are particularly interesting. Of all text level errors 38% and 25% affect verbs in the exams of non-VBS students and VBS students respectively. The amount of tense errors is quite different between VBS students (31%) and non-VBS students (63%). Thence I would argue that a greater range of tenses is apparent in the works of VBS students and that non-VBS students have not yet acquired the use of the most common tenses. For example, particularly striking was the wrong use of the present progressive, which was used in many cases instead of the present simple.

By simply reading through the papers, it became obvious that there is a great difference concerning the vocabulary used. In the works of non-VBS students a lot of repetition was found. In order to document this claim, all the

occurrences of verbs were counted for both groups. It has to be mentioned that only main verbs were counted and all instances of *to be* in passive constructions or the progressive form were neglected. As a next step, the number of different verbs was determined. To get comparative values, the ratio of verbs relative to the number of different verbs was calculated and it turned out that the percentage of varied vocabulary for CLIL students (57%) was significantly higher than for non-CLIL students (29%). I would argue that this definitely supports the claim that CLIL students acquired a greater range of vocabulary, which they also make use of in written production.

5. Conclusion

This study in-progress has so far explored and compared the most noticeable features in the interlanguage of CLIL and non-CLIL L2 learners by analysing the errors located in ten essays. All in all, my main findings so far exhibit that CLIL students do not necessarily make fewer mistakes, but that these affect different categories in contrast to regular students. For both groups most errors that could be identified by far belong to the text level. Although VBS students construct more complex sentences, incorporate a greater variety of tenses and integrate more diversified vocabulary, the percentage of errors on the text level is considerably higher for non-VBS students. The data further reveal that errors affecting verbs hold a very high presence in the essays analysed in general. In particular, the misuse of tenses constitutes by far the most dominant source of errors with regard to the verb. The difference, however, is that non-VBS students hardly go beyond the use of the present (simple/progressive) and past tense (simple), while VBS students use a wide variety of these forms. Moreover, a wider range of vocabulary has been found in the papers of CLIL students.

In sum, the findings suggest that, although from the number of mistakes it cannot be induced that CLIL students are more proficient than regular students, the closer investigation of the types of errors supports the claim that CLIL has a positive impact on the productive skill of writing.

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Identifying Effective L2 Pedagogy in Content and Language Integrated Learning (CLIL)[1]

Rick de Graaff*, Gerrit Jan Koopman and Gerard Westhoff, Utrecht

1. Introduction

In Europe, Content and Language Integrated Learning (CLIL) is becoming a popular and widespread practice of immersion education. In the Netherlands, for example, over 90 schools for secondary education offer a CLIL strand. Most CLIL teachers, however, are non-native speakers of the target language, and do not have a professional background in language pedagogy. How, then, can these teachers effectively contribute to the target language development and proficiency of their students?

In this paper, we will discuss the findings of a study carried out in three schools for secondary education offering CLIL. The purpose of the study was to observe and analyze effective CLIL teaching performance facilitating language development and proficiency. The analysis was carried out by means of an observation tool for effective CLIL teaching performance, based on the following principles from second language pedagogy: (1) exposure to input; (2) content-oriented processing; (3) form-oriented processing; (4) (pushed) output; and (5) strategic language use. We will discuss how the observed CLIL pedagogy is related to content-based teaching and task-based language teaching, and provide recommendations for effective language pedagogy in CLIL. We will argue that not only CLIL-teachers can benefit from effective language-pedagogical approaches, but that language teachers can benefit from effective CLIL approaches and experiences as well.

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[1] This paper was based on the article 'An Observation Tool for Effective L2 Pedagogy in Content and Language Integrated Learning (CLIL)' by de Graaff, Koopman, Anikina and Westhoff, published in the *International Journal of Bilingual Education and Bilingualism* (2007) volume 10/5, 603-624.

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2. Research questions

Although much attention has been paid to the proficiency level in English of CLIL teachers in the Netherlands and to the selection and adaptation of subject matter textbooks for CLIL, national CLIL evaluations indicate that little attention is paid to the pedagogic repertoire of CLIL teachers and to how it contributes to the pupils' target language proficiency (see Maljers & Wooning 2003). Therefore, in this paper we aim to investigate characteristics of effective CLIL teaching performance and relate these to theoretical principles in second language acquisition. The specific research questions are:

1. What CLIL teaching performance indicators can be derived from theoretical assumptions about effective language teaching and learning?
2. What instances of effective teaching performance in CLIL lessons can be identified by means of an observation tool based on assumptions of effective language teaching performance?
3. What practical recommendations can be provided to both CLIL and FL teachers concerning effective language pedagogy?

The aim of the study reported here, in other words, is not to quantitatively analyze or qualitatively evaluate CLIL practice, but to detect and describe instances of effective CLIL teaching performance based on language teaching performance indicators.

3. CLIL teaching performance indicators

Our conceptualization of effective teaching performance for language acquisition in CLIL includes attention to such features as functional communication, simultaneous attention to form and meaning, and type of corrective feedback, within a broader framework of three essential conditions for language acquisition – *exposure, use, and motivation* (Willis 1996: 11). Those essential conditions have been further elaborated in an observation tool for this study according to five basic assumptions related to effective language teaching performance.

Teacher facilitates exposure to input at a (just) challenging level

In correspondence to this assumption, before a lesson a CLIL teacher is expected to select and tailor input material in order to have it challenging but comprehensible for learners. Two types of scaffolding can be distinguished

during the lesson, namely on content and/or language of the input material, and content and/or language of teacher talk.

In the observation tool, this category consists of the following indicators for effective teaching performance:

1. text selection in advance
2. text adaptation in advance
3. adaptation of teacher talk in advance
4. text adaptation during teaching
5. tuning of teacher talk

Teacher facilitates meaning-focused processing

In correspondence to this assumption, a teacher can be expected to stimulate content-processing of oral or written input by giving special tasks that involve learners in grappling meaning (trying to make sense of whatever they hear or read). The teacher should check whether the meaning of the input has been comprehended sufficiently. If meaning is processed insufficiently or erroneously, the teacher might give some kind of support. Supplementary exercising of the related content features of input can be performed in this category as well.

In the observation tool, this category consists of the following indicators for effective teaching performance:

1. stimulating meaning identification
2. checking meaning identification
3. emphasizing correct and relevant identifications of meaning
4. exercising on correct and relevant identifications of meaning

Teacher facilitates form-focused processing

In correspondence to this assumption, a CLIL teacher can employ activities aimed at awareness-raising of language form, thus making learners conscious of specific language features. The teacher might indicate and direct learners' attention to correct and incorrect uses of form, give examples of such uses, thus facilitating implicit or explicit noticing of language form. In giving corrective feedback the teacher might employ implicit techniques (e.g. clarification requests, recasts) or explicit techniques (e.g. explicit correction, metalinguistic comment, query, advice) for focusing on form, as well as nonverbal reactions.

In the observation tool, this category consists of the following indicators for effective teaching performance:

1. facilitating noticing of problematic and relevant language forms
2. providing examples of correct and relevant language forms
3. correcting use of problematic and relevant language forms
4. explaining problematic and relevant language forms, e.g. by giving rules
5. having pupils giving peer feedback

Teacher facilitates opportunities for output production

In correspondence to this assumption, in promoting output production in the target language a CLIL teacher can encourage learners to react, ask questions aimed at functional output as well as stimulate interaction between learners in the target language. Different interactive formats (e.g. group, pair work) might be implemented to facilitate meaningful communication in English. Through instructions and/or corrections the teacher can guide learners to use English exclusively in the lesson. Corrective feedback by teachers or peer-students might stimulate the use of correct form/meaning connections by learners. The teacher can use a diverse range of activities for further exercising essential aspects of form/meaning use.

In the observation tool, this category consists of the following indicators for effective teaching performance:

1. asking for reactions
2. asking for interaction
3. letting students communicate
4. stimulating the use of the target language
5. providing feedback, focusing on corrected output
6. organizing written practice

Teacher facilitates the use of strategies

In correspondence to this assumption, a CLIL teacher should be able to assist learners to overcome their language and content comprehension and communication problems, by developing a repertoire of receptive and productive compensatory and communication strategies. Scaffolding and reflection on-the-spot is considered of great importance, when the teacher should be able to suggest to the learners an effective path (use of strategies)

for resolving comprehension or language use problems they have encountered.

In the observation tool, this category consists of the following indicators for effective teaching performance:

1. eliciting receptive compensation strategies
2. eliciting productive compensation strategies
3. eliciting reflection on strategy use
4. scaffolding strategy use

According to Westhoff (2004), these five assumptions can be considered as the basic ingredients for effective language learning and teaching activities. Westhoff's "SLA penta-pie" (named after a five section pie chart) is illustrated in Figure 1 and forms the theoretical basis for the observation tool in this study. For a more detailed description and justification of the observation tool, see de Graaff *et al.* (2007).

Figure 1. The "SLA penta pie", adapted from Westhoff (2004)
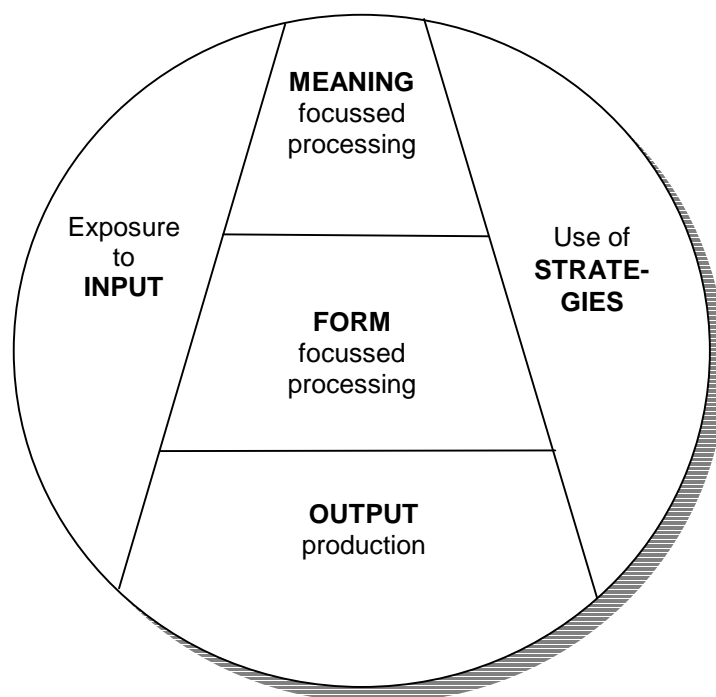
4. Effective teaching performance in CLIL lessons

In order to find practical evidence for teaching performance promoting learner language acquisition within CLIL contexts, a research instrument in the form of an observation tool was constructed according to the basic assumptions of the "SLA penta-pie". The observation tool was piloted on seven CLIL lessons

by CLIL teacher trainees in order to validate its usability and coverage. Subsequently, the observation tool was used to analyze a set of CLIL lessons from a variety of school subjects in three Dutch CLIL schools.

4.1 Procedure

Nine lessons from three Dutch CLIL schools for secondary education were observed, videotaped and analyzed by means of the observation instrument for effective pedagogy. The three schools belong to the same consortium of schools and are medium sized Dutch schools of about 1,200 students each. Each school has a CLIL-stream of about 300 students per school. The schools implemented a CLIL program about six years ago. The sample for this study consisted of nine lessons from the following subjects: History (three male teachers), Geography (one male teacher), Biology (one female teacher), Maths (one female teacher), Arts & Crafts (one female teacher) and English (two female teachers). We observed one lesson per teacher.

All videotaped lessons were observed and analyzed by at least two researchers. Any doubts concerning the qualification of specific excerpts were discussed and agreed upon in the research team, consisting of four researchers.

4.2 Results

In general it was found that, over all observed lessons, teachers used almost the whole range of effective teaching performance indicators. Although not every teacher used all performance subcategories in all the observed lessons, consistent and useful examples were found for almost every subcategory. As the aim of this research was to detect examples of effective CLIL pedagogy and to validate the instrument, the observations were not used to provide a quantitative analysis of the school, a department or individual teachers, neither to evaluate the quality of those. For a more detailed description and discussion of the results, see de Graaff *et al.* (2007).

5. Conclusions and practical recommendations for CLIL teaching

This research has aimed at finding practical evidence for theoretical assumptions on effective teaching performance directed at language acquisition in CLIL contexts. For this purpose, teaching performance indicators have been formulated, derived from assumptions about effective

language teaching. Those performance indicators have been integrated in an observation tool for effective CLIL teaching practice.

In the CLIL lessons analyzed in this study, sufficient evidence was found for most subcategories of the five main indicators for effective language teaching performance, as in:

1. *Teachers facilitate exposure to input at a (just) challenging level* by selecting attractive authentic materials, adapting texts up to the level of the learners and scaffolding on the content and language level by active use of body language and visual aids.

2. *Teachers facilitate meaning-focused processing* by stimulating the learners to request new vocabulary items, check their meaning, use explicit and implicit types of corrective feedback on incorrect meaning identification, and practice through relevant speaking and writing assignments.

3. *Teachers facilitate form-focused processing* by giving examples, using recasts and confirmation checks, making clarification requests and giving feedback (sometimes including peer feedback). No evidence was found of CLIL teachers providing explicit form-focused instruction, e.g. by explaining rules.

4. *Teachers facilitate output production* by encouraging learners' reactions, working in different interactive formats and practicing creative forms of oral (presentations, round tables, debates) and written (letters, surveys, articles, manuals) output production, suggesting communicatively feasible tasks, which give the learners enough time for task completion, encouraging learners to speak only in English, providing feedback on students' incorrect language use and stimulating peer feedback.

5. *Teachers facilitate the use of compensation strategies* by stimulating students to overcome problems in language comprehension and language production, reflecting on the use of compensation strategies, and scaffolding on-the-spot strategy use.

We can conclude, then, that the CLIL lessons observed in this study show instances of effective language teaching performance. That is, the subject teachers in the study perform at least incidentally as effective language teachers.

6. Further developments and implementation of the observation tool

The results of the study and teachers' reactions in the interviews related to this study indicate that teachers appreciate the tool as useful for expanding their teaching repertoire in a CLIL context. The tool might be further developed and implemented as a practical instrument in CLIL teacher training (e.g. pre-service/in-service, peer-coaching) and self-reflection of individual CLIL teachers (e.g. in professional development plans and performance reviews). For that purpose, a CD-ROM has been edited and produced containing video-clips that show examples of effective CLIL teaching performance in all subcategories found. The examples are accompanied by explicit 'do-statements' for all subcategories and suggestions for classroom activities. The CD-ROM and the observation instrument have been distributed among all CLIL schools in the Netherlands, and are used in pre-service training, in-service training and peer coaching sessions in our Institute for Teacher Training.

Although the observation tool was developed for effective language teaching performance in CLIL, a wider usage can be conceived. The tool, the observations made, and its application in CLIL teacher training and professional development might be of importance to *foreign* language teachers as well. It may serve as an example of how content and language integrating principles can facilitate language learning, and of how teachers can stimulate content-based language learning activities in foreign language curricula. Both content and language teachers can learn a lot from each other, and trainers and researchers, in turn, can learn a lot from both.

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The Effect of CLIL Instruction on Children's Narrative Competence

Julia Hüttner and Angelika Rieder-Bünemann, Vienna

1. Introduction

Given the increased acceptance of CLIL at schools, this paper sets out to address the overarching question of the *effects of CLIL instruction* by presenting part of an investigation of the language proficiency achieved by children in year 7 of Austrian schools, comparing CLIL groups with standard groups of learners. The specific aspect of language competence we are concerned with here is narrative competence, specified as the ability to tell a picture story in the foreign language English. This focus results in the need to analyse the *developmental stages of narrative competence in oral L2 production* as relevant background information.

While the ability to 'tell stories' is clearly not all that is involved in language proficiency, a focus on one genre that is familiar to children in both their L1 and their L2 is an efficient way of gaining rich, yet comparable, foreign language data from a group of learners. For the purposes of this project, a story will be considered generically well-formed if the action described is cohesive and coherent, addressing so both competences at the macro- and micro-level of language and genre proficiency (cf. Berman & Slobin 1994: 40) In this study, the elements of narrative competence were classified following these two layers, i.e. macro-level ('thematic') and micro-level ('linguistic'). To be more precise, the macro-level includes the explicit mentioning of the elements of the story (i.e. complication, unfolding of plot, solution), the framing of the story, and any evidence of schematic expectations, e.g. regarding an 'ideal' ending. The micro-level includes the adherence to conventionalised tense forms for the narrative, the use of appropriate connectors indicating relationships between events (causal, temporal, etc.), and the use of appropriate lexis.

As far as the L1 is concerned, the development of narrative competence can be seen to consist of four stages (cf. Boueke & Schülein 1991):

1. Individual pictures are described as isolated events and so the story does not show either local or global connections.
1. The individual sequences are connected by creating linear and causal sequences. The most typical connector is *and then*.
2. At the third level, narratives are structured locally and episodes are structured hierarchically (e.g. clause subordination).
3. Finally, stories are globally structured and features of thematic coherence linked to causal structure (reportedly this stage is reached when children are 9 years old).

Research on narrative development in an L2 is not unanimous in suggesting clear stages, and the contrast seems to lie in diverse degrees of importance attached to overall foreign language proficiency as an indicator of narrative competence versus more general issues of a maturational effect. Schmidlin (1999) suggests that there is a delay in the acquisition of narrative competence in the L2, arguably most decidedly on the lexical level, rather than the structural one. Kupersmitt & Berman (2001: 308), in line with most of the contributors in Verhoeven & Strömqvist (2001), however, view the development of narrative competence in the L1 and L2 as parallel, stating that

> [o]verall narrative construction appears to be affected by level of overall development and maturation, less so by level of language mastery.

2. Method

Picture stories have been used as a means of establishing the levels of narrative competence of children both for the L1 and the L2 (cf. e.g. Berman & Slobin 1994; Kang 2003). Although (similarly to all other types of narratives) picture stories do not imply one fully 'correct' version of the story, as the narrators can still choose their focus and their additions, there is the advantage of one clearly identified string of events that serves as a basis for all narratives.

In the context of this study, we used the story *Frog, where are you?* by Mercer Mayer. This story has also been used in Berman & Slobin (1994) and Kang (2003) and is especially suitable for children. It tells the story of a boy, who loses his pet frog, searches for it, and finally finds it in a swamp.

The informants of this study were 44 children (age 12) at two secondary schools in Vienna. Both schools offered strands using CLIL instruction and strands following the standard curriculum. The CLIL project involved was VBS (Vienna Bilingual Schooling), which offers instruction in English from primary level to school-leaving exams. At the time of the investigation, the

children were in their 7th year of school, which for the CLIL group also meant the 7th year of – at least partial – CLIL instruction. Groups were of equal size, i.e. 22 pupils of CLIL groups and 22 pupils of standard groups. The participants were individually given the picture story and had some time to familiarise themselves with the story and were then asked to tell the story first in their L1 German to one researcher and then to the other researcher in English. Students were led to believe that the second researcher spoke only English, and were asked to stick to English even if they did not know a particular word. The average length of individual narratives was 285 words in the CLIL group and 288 for the standard group. There were considerable variations in the length of the narratives, ranging from 110–434 words in the CLIL group to 143–521 words in the standard group.[1]

3. Findings: macro-level

With regard to the macro-level of narrative competence, the following features will be discussed here: the explicit reference made to core plot elements of the story, including the solution variants to the story, and the description of conceptually complex elements, i.e. the ability of the story tellers to make a shift in perspective explicit.

3.1 Plot elements

The following three components can be considered as core elements of the story (cf. Berman & Slobin 1994):

1. onset/problem (boy realizes that his frog has disappeared)
2. unfolding (boy looks for his missing frog)
3. resolution (boy finds the frog he has lost)

The results indicate that children in the CLIL group show higher levels of realisation of all three plot elements, which can be read as evidence of a closer approximation to the generic requirements of explicitly mentioning these three elements. All children of both groups mentioned plot element 2; however, 4.6% of the CLIL group as opposed to 13.6% of the standard group failed to mention the resolution of the story, and while all members of the CLIL group explicitly mentioned the problem at the onset of the story, 9.1% of the standard group did not.

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[1] The analysis is restricted to the L2 narratives here, with L1 narratives being used for selective comparison only.

As far as the final plot element is concerned, four variants were realised by the story tellers:

a) boy takes frog home
b) boy takes another frog home (one of the baby frogs)
c) boy leaves frogs in forest
d) no solution

Figure 1. Variants to plot element 3: standard vs. CLIL group
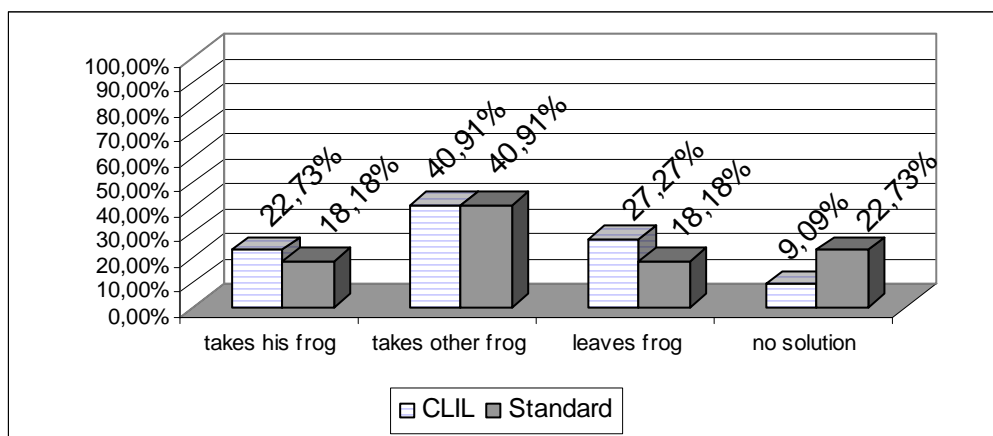
The results show that fewer children in the CLIL group (9.1%) compared to the standard group (22.7%) leave the story without a resolution, i.e. without mentioning either the boy taking a/his frog back home or explicitly mentioning that the boy leaves the frogs in the forest.

Additionally, more children in the CLIL group (27.3%) than in the standard group (18.2%) adapt the story to fit their expectations of an ideal story ending where animals are left to live free in nature. Apart from these alterations, i.e. leaving the frog to live in the swamp, one CLIL student included an explicit morale framing the story and another one commented on the meanness of the boy in taking the frog back home with him. If we assume that the children of both groups have similar ideas about ideal endings of children's stories, then we might consider the CLIL group as more competent in textualising their expectations.

3.2 Description of conceptually complex elements

There is one instance in the story where the perspective of the omniscient narrator clashes with that of the protagonist, who does not see 'the whole picture'. In the relevant instance, the boy tries to climb up the branches of a bush, which turn out to be the antlers of a deer (cf. Figure 2). A fully

competent story-teller would be expected to make this misperception on the part of the boy explicit.

Figure 2. Bush vs. antlers or 'ignorant view'/'omniscient view' episode (Mayer 1969: 14-15)

The overall results suggest that this episode poses serious difficulties to most children and that, interestingly, also in the L1 German the contrast in this episode was frequently not related. However, there is a clear advantage on the part of the CLIL group where 27% described this contrast in their English narratives (e.g. *then he runs away and climbs on a s- rock and he ho- hel- holds himself on a tree and then he sees that the tree is not a tree but erm it's the horns of a deer*) compared to 18% of the standard group. Another noticeable factor is that in the standard group 50% of all children related this shift of perspective in their German stories, but only 18% did so in their English narratives. These data lead to the assumption that if children are cognitively mature enough to perceive this change in perspective, their lack of doing so in the L2 stems from limitations in foreign language competence.

While in general the findings that at most 50% of the children were able to textualise this contrast in their L1 contradicts Berman & Slobin's (1994) assumption that full narrative competence in the L1 is achieved by age 9, the more specific correlations of pupils relating this episode correctly in their L1 and their L2 do point towards an advantage of the CLIL group.

4. Findings: micro-level

Our focus regarding the micro-level will be the competence in the L2 verb system of the narrators. Two issues will be dealt with, firstly, the use of an anchor tense in narratives, i.e. the tense form used predominantly, i.e. in about 80%-90% (cf. Bamberg 1987: 123), and secondly, the verb form errors in both groups.

4.1 Anchor tense

With regard to anchor tense consistency, it is important to note that this does not indicate whether present or past tense were used, but simply whether the narrator was consistent in his/her tense use. In this case, the CLIL narrators had the advantage over the standard group narrators with 95.1% vs. 81.3% average tense consistency.

An analysis of the individual narratives showed that while in the CLIL group tense switches usually involved switching from past to present during the narrative, which might be considered to some extent expected in this genre, the standard group's tense variations within and between narrations frequently made tense choice appear arbitrary.

4.2 Verb errors

A rather clear picture emerges when we compare the two groups with regard to the errors produced in verb forms. The standard group produced 19.1% verb errors, mostly, i.e. in 72% of all instances, involving the use of the base form instead of either 3rd person present tense or a past form. The origin of these mistakes might lie in problems with the –s marker of the present tense or in a more general strategy of using base forms only; with the homoforms in English of the base form and all present tense forms except the 3rd person, this cannot be decided unambiguously. In this regard, we can see that the CLIL group with only 3.6% verb form errors does seem to have the clear advantage and seems competent in verb formation and use.

5. Conclusions

The results presented here and some further preliminary results of our study suggest several conclusions. Firstly, with regard to the general features of children's narrative competence there are considerable variations in both groups, indicating a range of both narrative and L2 competences. Secondly, the overall findings from both groups suggest an overall awareness as to the requirements of the narrative genre, including reference to core plot elements, and tense consistency.

If we consider the possible effects of CLIL instruction on children's narrative competence, we can see that the CLIL group have a noticeably more advanced command over the micro-level features of the narrative, including anchor tense consistency and use of correct verb forms. The CLIL group is also more competent in some of the macro-level features, such as referring to all plot elements and textualising conceptually complex elements, but in this level the difference between the two groups is far less pronounced, indicating possibly that some of the elements of narrative competence are governed by general cognitive skills that mature independently of increased L2 input, whereas the micro-level skills are more heavily affected by CLIL programmes.

Overall, these results indicate an advantage of the CLIL group over the standard group. However, some factors remain to be considered: firstly, in all these CLIL programmes, children (or their parents) could choose to be part of the programme and thus, a higher level of motivation might be assumed to exist in the CLIL group children. Secondly, without any clear curricular guidelines it is hard to say to what extent the advantage, for instance in the verb system, is as pronounced as it is to be expected after seven years of additional L2 input, or whether it is higher or lower.

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Adapting Authentic Materials for CLIL Classrooms: an Empirical Study

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1. Introduction

European CLIL is largely still in an experimental phase – although most of the European nations have pilot projects underway, few have introduced it into mainstream general education (Eurydice, 2006). This means that there is a dearth of commercially produced CLIL course books, and teachers often have to prepare their own materials. In doing so, teachers have a basic choice between three options. They can:

  a) produce their own original materials from scratch;
  b) employ 'undiluted' authentic materials;
  c) adapt authentic materials in line with their teaching goals.

Each of these options offers advantages and disadvantages. If teachers produce their own materials, they can be reasonably sure that the focus will be exactly where they want it to be, yet the process can be extremely time-consuming and many teachers simply do not have the time to produce everything themselves. In addition, few teachers would advocate basing an entire course on materials from a single source. For this reason, many teachers look to authentic materials for inspiration.

At this point we should acknowledge that a definition of *authentic* in this case is far from consensual. Unfortunately, within the constraints of the current discussion we cannot spend too long on such a definition. For the purposes of the current study, in the CLIL context, we take authentic to imply both non-pedagogic materials from the general media and specifically didactic content materials produced for native-speakers of the target language. Widdowson observed that "attested" language is not the same as "authentic" language (Widdowson 2000) and that questions of authenticity rest more on audience engagement than they do with source (Widdowson 1990: 44). With this in mind we suggest that one of the prime requisites of authenticity is genuine communication: the text must convey a message. In the case of a CLIL text this will relate to the content and it will likely conform to one of Mohan's (1986) knowledge structures – describing, comparing, evaluating

etc. Simultaneously, it will exemplify a style or genre. As a caveat, we do not equate authentic with native-speaker (see Savignon 2007).

The primary linguistic attraction of authentic materials lies in their providing genuine models of the target language in use. Yet they are not without their potential drawbacks. One of the biggest challenges for the teacher lies in ensuring that the materials are linguistically accessible (for the level of their learners) and cognitively accessible (for the age of their learners). In tandem, there needs to be a balance between factual information and linguistic illustration. For these reasons it can be difficult to find authentic materials which do not require some form of treatment prior to use and it seems that of the three options above, the third – adapting authentic materials – might offer the most promise.

2. Research questions, methodology and participants

This article reports on a descriptive study into text adaptation[1] for the CLIL classroom. The research was based on two basic hypotheses: firstly, that different teachers would employ different strategies in adapting texts, and secondly, that it should be possible to delineate and describe these different strategies on the basis of empirical evidence. The first hypothesis rests on the fact that there is considerable scope for personal intervention in the treatment of a text, and the second assumes that, nonetheless, there are a fixed set of assumptions which are likely to affect a teacher's approach.

In order to test our hypotheses, we chose a short text from an on-line site which talks about medieval cathedrals.[2] From a content perspective the text would be suitable for a history or religious studies class (or particularly suitable in the case of an integrated curriculum) looking at the Middle Ages. We posited (in line with the curriculum in Andalusia) that content-wise this text would be suitable for students in lower to middle secondary education, but that linguistically and cognitively it would probably be too demanding for the learners, who at that level would likely be around a B1 level according to the Common European Framework of Reference for Languages (CEFR). It thus provided us with a very realistic task. The twenty three teachers (a mix of English and Spanish native speakers) who participated in our research were all practising Modern Foreign Language (MFL) teachers either in

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[1] We understand the term 'adaptation' to be loosely synonymous with adjustment, modification, grading and fine-tuning.

[2] http://www.themiddleages.net/life/cathedrals.html

postgraduate or INSET courses. Although not all were currently teaching on CLIL programmes, their courses all included a module on CLIL and so they were familiar with approaches to and the goals of Content and Language Integrated Learning.

They were given the source text and the following instructions:

> You are involved with history teaching in the bilingual section of a secondary school. This task envisages 3rd years (who after a couple of years in the bilingual section are around an average B1 level). You are going to give a class about cathedrals in the Middle Ages (as specified in the curriculum). You have found the (authentic) text below which from an academic and content perspective seems appropriate for your students. Nonetheless from a linguistic and conceptual perspective you think the text might be too difficult for them. Please make any adjustments you think appropriate.

3. Results

The resulting texts clearly validated our first hypothesis – different attitudes to adaptation were clearly recognisable. On examination we were able to group the texts into what appear to us to be three distinct approaches. The first two are well-documented in the literature: on the one hand a paring down of the text to its basic content, generally known as *simplification*, and on the other hand, an expansion of the text through the addition of paraphrase and explanation which is often referred to as *elaboration*. The third approach, which appears to involve a pedagogic redefinition of the textual message, we are tentatively calling *discursification*. The rest of this article will discuss and justify our groupings from both quantitative and qualitative perspectives.

3.1 The original text

The original text (see appendix) contains historical facts. As would be expected in a text dealing with historical information, it is built around a structured time frame. Many of the sentences include present and past references both in active and passive forms. There are also some modal chunks of considerable complexity, often indicating writerly stance (e.g. all that can be attempted is to give a general outline). The text includes both topic-specific technical and general academic lexis (e.g. clergy, cruciform, spire; development, outline, features). It is organised around primary ideas and supporting evidence which gives rise to co-ordination and sub-ordination. Quantitatively speaking

the original text is 274 words in length and the mean sentence length (MSL) is 30.

3.2 The simplified texts

The simplified texts tend to sacrifice linguistic complexity to factual content. In functional terms, the resulting text is purely ideational. From a quantitative perspective (taking an archetypical example of a simplified text) the resulting text is much shorter overall – just over half the length of the original – as sentences are much shorter (MSL = 14). Simplification appears to be a sentence-based procedure. This can create problems: the sentences come across as somewhat isolated and at times there is a lack of coherence as much of the linking information has been cut. In some cases supporting evidence has also been removed. This can result in reader expectations being frustrated. In one case, for example, readers are told that there are common characteristics to cathedrals but not what those characteristics are. The verbs in the simplified texts tend to be copulas, and lexical simplification is frequent: cruciform, for example, often becomes cross-shaped.

3.3 The elaborated texts

On a certain level, the elaborated texts appear to sacrifice cognitive complexity. Metaphorically speaking, the reader is taken by the hand and led through the text. The elaborated texts often favour increased personalisation (usually through the use of we). Elaborated texts provide rich L2 input. They tend to be highly redundant: important points are highlighted and often re-phrased for emphasis, and anaphoric and cataphoric referencing and ellipsis tend to be avoided – which leads to the repetition of key noun phrases. As could be expected, the resulting texts are longer than the original – our archetypical example comes in at 290 words, yet the MSL is shorter (21) which means considerably more sentences than in the source text.

3.4 The discursified texts

As noted above, both simplification and elaboration are 'known' tactics. Yet when we looked at our resulting texts, we identified a 'third way'. This approach involves a deep rather than surface approach to text adaptation. Rather than trying to adapt the students to the text, discursification implies adapting the text – from a global perspective – to the students. What was a scientific text becomes a pedagogic text, and an ideational text becomes

increasingly interpersonal. The discursified texts tended to feature the inclusion of overt interactional devices such as rhetorical questions, parenthetical information, statements of writerly attitude (stance), explicit evaluation and hedges. Participants who favoured this approach were far more likely to insert visuals, footnotes and glossaries. Several also commented on their search for L1 cognates. It is noteworthy that the MSL of the discursified texts is very close to the original (28) although the overall text has been shortened (197 words).

4. Discussion

We shall now compare our findings with previous research and consider the potential advantages and disadvantages of each approach.

4.1 Simplification

Although simplified texts appear to satisfy readability criteria for lower levels (shorter sentences, simplified vocabulary), they do not necessarily guarantee understanding (Adger *et al.* 2003: 30). For example, simplified lexis is not necessarily semantically 'easier'. Short, simple words tend to be highly poly-faceted[3] (Davies & Widdowson 1974). Thus, although simplification aims to make things clearer, this is not always the case and "[a] simplified text that is not understood is not simplified" (Lynch 1996: 29). In addition, and from a specifically CLIL perspective, simplified texts do not aid language learning. This is because simplification implies re-aligning the content of a text so that it is "within the area of language already assumed to be known to the proposed audience" (Bhatia 1983: 42) – so there is no new language. Furthermore, given their somewhat staccato nature, simplified texts appear unnatural – at least to the trained eye – so they do not provide a good linguistic example to learners (Adger *et al.* 2003: 30). This is not, however, to reject simplification outright. While we might not want learners to interpret simplified texts as a good model of academic language (something to emulate), we might, at times, want to encourage them to read target language texts purely for enjoyment, to boost motivation or self esteem, or to introduce classic literature or folk tales as a cultural element. In the cases of abridged

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[3] Consider, for example, *hit* which can be positive (= *success*) or negative (= *strike*). It can 'mean' *realise*, *reach* (a place or state) or *have an effect on*. It is also used in a wealth of idiomatic expressions (*hit the roof*, *the road*, *the sack* etc.) and many phrasal verbs.

readers, where the goal is "large quantities of pleasurable reading" (Nation 2001: 174), simplification appears to provide the most appropriate approach (cf. Nation 2001: 174).

4.2 Elaboration

Research into elaboration (eg. Chaudron 1982; Yano, Long & Ross 1994; Oh 2001) has shown that while it can lead to improved understanding in comparison to simplified or undiluted authentic texts, the fact that elaborated texts are longer can mean that they pose more difficulties for the reader (see also Lynch 1996). The question of learner levels comes into play regarding the choice of techniques which may be employed in elaboration. Elaborated texts rely heavily on paraphrase and synonyms yet lower level learners do not always recognise paraphrase as such and may have problems processing synonyms (Chaudron 1982, 1983). The additions may be interpreted as additional information. When this happens the text will become even more cognitively demanding. It seems probable, therefore, that elaboration should be employed with extreme care in the case of younger or lower level learners.

4.3 Discursification

Rather than adaptation of the text, discursification seems to imply adaptation of the message. The discursified texts displayed a switch from scientific to pedagogic discourse yet without sacrificing linguistic or cognitive complexity. The resulting texts tended to be highly reader-friendly, designed both to draw the reader into the text through engagement strategies and to ensure maximum comprehension with what Bhatia (1983) called "easification devices": the addition of visuals and glossaries and the redesigning of the text layout. When employing discursified texts, however, teachers should bear in mind that they are providing their learners with models of pedagogic discourse. If they later want their learners to produce other genres (e.g. newspaper or magazine type articles or creative writing), they should probably provide supplementary evidence regarding stylistic norms.

5. Conclusions

To reiterate, our research sampling of adapted texts backs up both of our initial hypotheses: teachers do employ distinct strategies when adapting texts and it does seem possible to loosely group those texts according to apparent philosophies. We should now emphasise that this is intended primarily as a

descriptive study, and also that it represents only the beginning of our research into the question of text adaptation. We would not argue that any one approach is inherently better than any of the others. Rather, it is likely that what teachers need is a range of techniques (Nation, 2001). They also need to know when each technique is likely to be more fruitful. The next step will thus be classroom-based research with learners of different ages and levels in order to explore their relationships with the texts.

Appendix

Source Text

One of the earliest instances of the term ecclesia cathedral is said to occur in the acts of the council of Tarragona in 516. Another name for a cathedral church is ecclesia mater, indicating that it is the mother church of a diocese. Also, as the supposed chief house of God in a region, the cathedral church was called the Domus Dei, and from this name the Germanic Dom- prefix for church is derived, and the Italian Duomo.

The history of the body of clergy attached to the cathedral church is obscure, and as in each case local considerations affected its development, all that can be attempted is to give a general outline of the main features which were more or less common to all. Originally the bishop and cathedral clergy formed a kind of religious community, which, in no true sense a monastery, was nevertheless often called a monasterium. During the 10th and 11th centuries, the cathedral clergy became definitely organized, and were divided into two classes. One was that of a monastic establishment of some recognized order of monks, often the Benedictines while the other class was that of a college of clergy, bound by no vows except those of their ordination, but governed by a code of statutes or canons.

Most cathedrals have a cruciform groundplan with a nave crossed by a transept with an aisle that is occasionally as high as the nave. The place where the nave and transept meet is called the crossing and is often surmounted by a small spire called a fleche, a dome or, particularly in England, a large tower, with or without a spire.

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Lecturing Through the Foreign Language in a CLIL University Context: Linguistic and Pragmatic Implications[1]

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1. Introduction

In recent years and all across Europe, English has become rapidly implemented as the medium of instruction at tertiary level. In Spain, the impact of the CLIL approach has been enormous, especially in primary and secondary education. In tertiary education, although universities are slowly incorporating English as a medium of instruction, mainly in postgraduate programmes, there still seems to be scant institutional provision for CLIL and few studies on the use of English as the language of instruction in the Spanish university context have been carried out (but see Price & Fonseca 2006; Dafouz *et al.* 2007; Dafouz, Núñez & Sancho 2007).

   This study, embedded in a larger research project on CLIL discursive features at tertiary level, aims at analysing the way Spanish university professors structure their lectures and the linguistic and pragmatic devices used in each of the different stages of the lectures. As a result, the analysis will consider the macro and micro levels of discourse (i.e. macrostructures or discourse moves and linguistic features contributing to each stage). Given the fact that these micro features are expected to be influenced by the situational context in which the lectures are delivered, the model adopted here is that of Systemic Functional Grammar (Halliday 2004). More specifically, it follows Young's (1994) systemic description of phases as applied to the analysis of the structure of lectures.

The next section describes the corpus and instrument of analysis. Section 3 discusses the results and, finally, section 4 offers the main conclusions derived from the study.

2. The study: data, instrument of analysis and methodology

2.1 Data

The data of this study comprises four Engineering lectures on the topic of Formula 1 cars (26,000 words approximately). Each lecture lasted around one hour and was delivered as part of a summer course held in July 2006 at the Faculty of Aeronautical Engineering (Universidad Politécnica de Madrid)[2]. A total of 26 students of different nationalities attended this course using English as their lingua franca.

The lecturers who volunteered to participate in our study are three male and one female native speakers of Spanish. As self-reported in a questionnaire distributed before recording the lectures, their levels of English ranged between intermediate and high intermediate and two of them had experience in lecturing in a foreign language.

2.2 Instrument of analysis

As outlined above, the instrument of analysis used is based on Young's (1994) systemic model of phasal analysis. In this model, phases are defined in the following terms:

> Strands of discourse that recur discontinuously throughout a particular language event, and, taken together, structure the event. These strands recur and are interspersed with others resulting in an interweaving of threads as the discourse progresses. (Young, 1994: 165)

Our choice of this model for the analysis of lectures was based on three main reasons. First, it is more detailed than previous models used in the analysis of lectures, such as Goffman's (1981) typology or Dudley-Evans & Johns's (1981) study of lecturing styles. Second, being more detailed, Young's (1994) model overcomes the inherent idiosyncrasy regarding lecturing styles and organisation. That is, it allows the analyst to explore

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[2] This course was organised by the BEST programme. BEST stands for Board of European Students of Technology and "aims to help European students to become more internationally minded, by reaching a better understanding of European cultures and developing capacities to work on an international basis" (www.BEST.eu.org).

lectures as a genre. Finally, it is flexible enough to be implemented in a non-native context and in other disciplines.

According to Young (1994), the macrostructure of university lectures consists of six types of phases, arranged into two categories: metadiscoursal phases, which comment on the discourse itself, and non-metadiscoursal phases. Among the metadiscoursal phases are the *Discourse Structuring phase*, in which the speaker announces the different parts or directions of the lecture; the *Conclusion phase*, where the speaker summarises the main points covered in the lecture; and, the *Evaluation phase*, in which the lecturer evaluates the information presented.

Non-metadiscoursal phases also include three types of phases: *Interaction phase*, which refers to the interpersonal strategies the lecturer implements to establish contact with the students and to ensure comprehensibility; *Theory or Content phase*, in which theories, models and definitions of the subject are presented to students; and *Exemplification phase*, where lecturers illustrate theoretical concepts through concrete examples.

These labels were used as the basis of the codification system devised for the phasal analysis of our corpus. The procedure of analysis and the coding system are described below.

2.3 Methodology

Each member of the research team was assigned the transcription and phasal analysis of a full lecture. Phases were coded according to the following system, the codes being inserted at the beginning and at the end of each phase:

DISCOURSE STRUCTURING PHASE <DS>	INTERACTION PHASE <INT>
CONCLUSION PHASE <C>	CONTENT PHASE <CT>
EVALUATION PHASE <E>	EXEMPLIFICATION PHASE <EX>

Once each lecture was coded, the analyses were discussed in group with the aim of checking reliability and achieving an agreement as to the classification of phases. This proved to be a hard task, as some classification problems arose. For instance, rhetorical questions were found to be used to structure discourse and also maintain contact with students. Besides, there were some linguistic devices, such as the expression for example, which were not employed to introduce an Exemplification phase, but rather were used inadequately. In the light of these findings, we decided to refine Young's

(1994) model and introduce two new codes in order to account for multifunctionality or overlapping of phases (e.g. <MULT/DS/INT>, <MULT/INT/C>) as well as for certain errors of a pragmatic nature that were found to be recurrent (e.g. <ERR>).

3. Results

The analysis of data reveals that the six phases identified by Young (1994) are included in all four lectures and, except for the Exemplification phase, they are evenly distributed. The Content phase stands out as the most frequent type of phase (3.19)[3], followed by the Discourse Structuring phase (2.76) and the Interaction phase (2.73). The least frequent phase was the Conclusion phase (1.07). The remaining phases (Evaluation, Exemplification and Multifunctional) showed similar results ranging from 1.57 (Exemplification) to 1.84 (Evaluation).

As far as the Content phase is concerned, two moves can be distinguished within this phase: Move 1, containing the presentation of the situation or definition of the element that is going to be explained; and Move 2, which describes the steps to follow in order to accomplish a task or solve a given problem. Linguistically, this phase is articulated by means of technical terms and sentences expressing material and relational processes (especially attributive), as in:

(1) <CT>This expression is the total displacement of the engine. It's the size, it's related with the mass of the engine too, multiplied by the rpm, the rotational crankshaft speed it's 10 revolutions per minute (. . .) <CT> (Lecture 1)

Regarding the Discourse Structuring phase, this phase normally precedes the Content phase and is used to introduce a new (sub)topic or a new direction within a problem-solving framework. These two functions are conveyed both by means of implicit and explicit markers, although the latter are not present in all the lectures. The following example illustrates an explicit statement of the direction that the lecturer is going to take. Note that the new lesson topic is introduced in the form of a 'textbook heading' (Microgravity):

(2) <DS> I would like to explain what we did in this project, in this, in this field, in the past—uhh space technology, and experimental Aerodynamics, which is the subject of this conference, this afternoon. Microgravity. <DS> (Lecture 3)

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3 Value per thousand words (‰).

The Interaction phase appears frequently embedded in the Content phase and is mainly used to maintain contact with the audience and check content comprehension. Imperative forms of verbs expressing mental processes (e.g. think, imagine), yes-no questions and wh-questions are common linguistic devices found in this phase and typical exponents of the interpersonal function (Morell 2004).

(3) <INT> Who knows what FIA means? (a pupil answers) <INT> (Lecture 4)

Other phases embedded within the Content phase are the Evaluation phase and the Exemplification phase. In the Evaluation phase the lecturer encourages students to tackle the study of a particular aspect, persuades them of the convenience to adopt a certain view or decides on the amount of information or level of detail, as example (4) illustrates. The most recurrent evaluative devices used are adjectives (e.g. problematic, important, the best, difficult, relevant, to name a few) and modal adjuncts (e.g. perhaps, more or less).

(4) <E> This is not enough to describe the phenomenon. We need to introduce some hypothesis
     (. . .) <E>. (Lecture 3)

The Exemplification phase is linguistically articulated by exemplification markers (e.g. for example, like) and conditional clauses (e.g. if you have an apple...). In some cases, practical tasks are also included to illustrate specific points, as in the following example:

(5) <EX> I propose you a simple experiment. Ok. Pick a sheet of paper. One-one piece of paper.
     Ok. This piece of paper is in equilibrium <EX> . (Lecture 3)

Finally, the Conclusion phase is used more as a micro-strategy to recapitulate certain parts of the lectures than as a macro-strategy to summarise and close the whole speech event. It is worth noting that the articulation of this phase lacks verbs such as *summarize*, *recapitulate*, *conclude…* or typical conclusion markers like *all in all*, *in brief/short*. Instead, other devices such as repetition of ideas or the conjunction so are used.

(6) <C> So if you can't reduce this weight you can use more ballast at…eh, without better
     distribution on the car. Consequently, the cars for Formula One are constructed for ultra light
     weight materials <C>. (Lecture 4)

As indicated in the previous section, our data also reveal the existence of considerable overlapping and multifunctionality of phases (see example 7), which evidences the different activities that can be performed during each phase of the lecturing event. By saying another important thing, the speaker announces a new point while concurrently evaluating its importance.

(7)   <MULT/DS/E> …another important thing was [that] fibres have a diameter typically of ten
        microns so it cannot be held individually. <MULT/DS/E> (Lecture 2)

Another interesting finding obtained from our analysis concerns the inadequate use of certain linguistic markers typically used to signal the aforementioned phases. The fact that items such as more or less or for example are used with meanings distinct from those of evaluation or exemplification, respectively, appears to underlie the cases of mismatch between linguistic choice and phase type, as in example (8) where the speaker uses more or less as a filler.

(8)   So, <ERR> more or less <ERR>, if we started with a design like this one, we finish element
        modelling and, with the freedom of putting layers as far as we need… (Lecture 2)

This type of pragmatic inadequacies has also been found with other items such as so that, used with the meaning of *thus/therefore* or *perhaps*, functioning as a filler. This means that the presence of these phase markers does not automatically ensure the existence of a particular phase. The function of the phase marker, and, consequently, the type of phase needs to be identified considering the whole discursive context.

4. Conclusion

This study has examined the organisational and discursive features of university lectures delivered in a CLIL context. Drawing on a corpus of four lectures given by Spanish speakers, this paper has revealed that the general patterns regarding the structure of the lectures match those found by Young (1994). However, differences are observed in the way phases are signalled. Strands of discourse cannot always be classified as isolated and clear-cut phases. In fact, phases (e.g. the Exemplification, Evaluation or Content phase) can interrelate among them and stand in a dependent relation so that different functions may coexist in one macro phase. In addition, the analysis has shown that, in many cases, phases are implicitly indicated and that certain explicit markers are not always used with their corresponding signalling meaning, as was the case with the expression for example. From a pragmatic point of view, such indicators may hinder the comprehension of the lectures.

It remains to be seen to what extent the lecturers' way of signalling the structure of their lectures (implicit or explicit) is an idiosyncratic element or is affected by the type of discipline taught or by their competence in the FL. It is our intention to include more disciplines in our study, as well as compare the present data with lectures on similar topics delivered by the same speakers in their L1 to cast light on these issues.

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Assessment Modes in CLIL to Enhance Language Proficiency and Interpersonal Skills

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1. Introduction

One of the major questions arising among teachers in the CLIL classroom has always been how to assess the students´ performance both with regard to subject knowledge as well as to their progress in English in a motivating, flexible way. A great deal of scepticism among subject teachers about teaching CLIL stems from their feeling that teaching CLIL automatically brings about a simplification, a general reduction in subject knowledge. In order to counterbalance this rather vague feeling, they often insist on summative assessment modes. Then, however, they argue that if they do so, they are not allowed to insist on an English answer in their tests. It is therefore necessary to find a method of assessment which takes both the increase in subject knowledge and linguistic progress into account. This has resulted in the adoption of a model which involves process writing and formative assessment, combined with portfolio work and peer tutoring.

2. Formative assessment in CLIL

Looking at the issue of assessment in CLIL from a broader perspective, it becomes evident that there are basically three considerations to be taken into account:

- First of all, there is the principal aim of CLIL to enhance the students' language proficiency as defined by the Common European Framework of Reference for Languages (CEFR), which provides descriptors for the individual levels ranging from A1 to C2 for all skills.
- Secondly, the students have to acquire the subject knowledge.

- Thirdly, there is an increasing demand in our society for flexibility, initiative and interpersonal skills (Morgan 2002). The last two in particular are embedded in conversational interaction. Interaction in the CLIL classroom, however, is often restricted to the pattern of question – answer – feedback, or initiation-response-feedback, between teacher and student (Dalton-Puffer 2007). In this context Morgan (2002: 40) demands a

> broader assessment framework … which would allow the abilities that can be developed within a bilingual context (meaning creativity, communicative competence and interpersonal skills) to be recognized more fully.

The question now is to determine in which way these three aspects can be combined successfully in the CLIL classroom. Instead of summative assessment, formative assessment, which "provides feedback which leads to students recognising their learning gap and closing it" (Harlen 1998: 79), may be the answer. According to Black & William (1998: 2), formative assessment

> refers to all those activities undertaken by teachers, and by the students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged … to meet the needs.

Indeed, a combination of self-centred learning for portfolio work, accompanied by formative assessment by the teacher and peer tutoring has proved highly efficient in the CLIL classroom.

As a first step, the teacher gives out clear instructions concerning what the students are expected to do for their portfolio work and their final presentations. Clarifying the learning outcome at this planning stage by giving them a list of *I/you can do…* statements for self assessment and peer tutoring, so that they know where they are heading, is extremely important. These statements should comprise all the skills they are expected to develop. In addition, the students get clear instructions for peer tutoring, most importantly on how to give encouraging quality feedback, describing rather than evaluating the product. Last, but not least, they get a definite time schedule for the completion of the entire work from beginning to end.

The second stage concerns the actual work process. It is student centred, accompanied by peer tutoring and descriptive quality feedback on part of the teacher.

> The students learn and share among themselves with the teacher as a facilitator who checks on the students' understanding and progress. The

tutors learn to explain and clarify concepts while the tutored students have the benefit of one-on-one interaction in a non-threatening manner. (Short 1991)

The students start their work by collecting information and sorting out what they can use for their topic. They are encouraged to use their sources with a critical mind, develop strategies to understand unfamiliar words, consult dictionaries where necessary and develop reading strategies. At that stage they also become familiar with the technical vocabulary and the subject knowledge. Then they have to set about their tasks whatever they may be: analysing, commenting on their findings, writing texts, etc. These products are then shown to their peers, their study buddies, who give them descriptive feedback. It has been observed that students see the faults of their peers' work more accurately than their own, are enthusiastic to help and are capable of giving useful suggestions. After the students have modified their drafts and processed their peers' suggestions, the teacher goes over them and gives her/his feedback. It is up to the students themselves to which degree they adjust their work to the teacher's feedback. This process can be repeated various times. Experience has shown that a repetition of more than two times is demotivating.

As a third step, the students have to present their final work to the class. Guidelines for a successful presentation have already been established in step one by the students themselves. Once again experience has shown that they tend to have a good idea of what a good presentation should be like and they are very critical of their peers.

As a fourth step, the teacher gives her/his final assessment, which is mainly based on the progress the individual students have made during their work, the quality of their final reports and presentations.

Based on extensive experience in applying this assessment mode in lower and upper secondary education for various years in CLIL, I can claim with some certainty that the students:

- use English naturally when they discuss each other's work, make helpful suggestions, ask when they do not understand the meaning of a statement and when they cannot make sense of some reasoning;
- are aware of the learning goals, both with regard to subject knowledge as well as language aspects;
- automatically enhance their language performance as the whole undertaking is done in English. They learn to distinguish between various registers; they become sensitive to subtle lexical and grammatical differences in meaning.

- use all five skills as listed in the CEFR;
- develop interpersonal skills and learn how to give descriptive feedback and to communicate successfully;
- discover their own resourcefulness in solving problems they encounter in the course of their work;
- are enthusiastic about active involvement in their own and in their peer's learning.

3. Conclusion

Self centred study for portfolio work combined with peer tutoring and the teacher as a facilitator has proved highly efficient in promoting major goals of CLIL. Further research, however, has to be carried out in order to evaluate this assessment mode on a quantitative basis.

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CLIL in a Bilingual Community: Similarities and Differences with the Learning of English as a Foreign Language[1]

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1. Introduction

Content and Language Integrated Learning (CLIL) is an approach to foreign language learning that requires the use of a foreign language to practise content. In the last decades, CLIL has begun to be used extensively in a variety of language learning contexts, notably in the past years, when increasing attention has been given to integrating language and content, partly due to the need of promoting language development in different language educational programmes. Within the framework of European multilingualism, CLIL can apply to different levels of educational systems and programmes, which can be pictured as a continuum (Brinton *et al.* 1989; Cenoz & Perales 2000; Met 1998), moving from total immersion programmes, through content-based instruction models, to the more conventional, formal language classes that incorporate content in order to afford language practice. Based on Met (1998), we can visualise the continuum as follows:

Content driven					Language driven
Total Immersion	Partial Immersion	Sheltered Courses	Adjunct Model	Theme-based Courses	Language Classes

As can be seen, the different CLIL programmes emphasize the link between content and language demands in a different way and can be placed along a line of language-driven or content-driven approaches. Nevertheless, despite the different approaches in relation to content and language, when we

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think of CLIL, we do not think of "immersion education (e.g. the Canadian model) but rather a flexible European approach which responds to a very wide range of situational and contextual demands" (Coyle 2005). Many studies on second language acquisition published in the last decade have originated in Canadian immersion instruction contexts which approximate naturalistic acquisition. As a consequence, they have been applied to formal instructional settings that very often bear little resemblance to the Canadian context. Despite this difference, advocates of CLIL (Snow & Brinton 1997, among others) suggest that a key concern of CLIL should be to create conditions for naturalistic language learning, contrary to more formal perspectives which start out with the assumption of a heavy grammar focus in instruction, at least in the Spanish context. In sum, CLIL must provide an integrative perspective such as "drawing topics, texts, and tasks from content or subject-matter classes, but focusing on the cognitive, academic language skills required to participate effectively in content instruction" (Crandall & Tucker 1990: 83).

The aim of this study is to analyse the effect of content-based instruction on the acquisition of oral competence in English as a foreign language. Specifically, it aims at examining the similarities and differences between content-based instruction and traditional instruction (language-driven instruction) in a Basque-Spanish community, where English is taught as a third language. The basic theoretical assumption behind this study is that through successful use of the language to learn new concepts, learners will develop their language proficiency more effectively; that is, students will learn the academic content specified in the curriculum and at the same time develop their second language proficiency (Genesee 1987; Lambert & Tucker 1972).

2. Methodology

2.1 Participants

The subjects in my study were 24 secondary students in a Basque school in the Basque Country. Basque was the language of instruction and the main language of communication at school. Spanish and English were taught as school subjects. Some subjects used only Basque at home but others used Spanish. Therefore, this Basque school serves as a total immersion programme for students whose mother tongue is Spanish and as a first language programme for those students whose first language is Basque. Nevertheless, all students were significantly exposed to Spanish as it is the majority language in the Basque Country.

The students in our study had begun learning English in kindergarten, when they were 4/5 years old. They had all learned English for 12 academic years, but the hours of exposure were different: 1,148 hours in the case of the traditional group and 1,358 hours in the case of the CLIL group. In that second group, apart from the English classes, they undertook two Science courses in the 3rd and 4th year of secondary education.

Table 1. Participants

|	TYPE OF INSTRUCTION	STARTING AGE	AGE WHEN DATA COLLECTION	HOURS OF INSTRUCTION
GROUP A	Traditional	4-5 years old	4° ESO (15-16 years old)	1148 hours (12 academic years)
GROUP B	CLIL	4-5 years old	4° ESO (15-16 years old)	1358 hours (12 academic years)

2.2 Task

Our subjects were asked to complete a speech production task that consisted of elicited narratives of the *Frog, where are you?* story, created by Mercer Mayer (1969), which has been used in a large amount of research and with a large variety of languages (Berman & Slobin 1994; Stromqvist & Verhoever 2004; Hüttner & Rieder-Bünemann, this issue). They were asked to narrate the frog story with the help of the 24 pictures that make up the story. The stories were recorded, transcribed and analysed using the Statistical Package for Social Sciences to examine oral production.

3. Results

3.1 The frog story

Figure 1 includes the results of the T-tests comparing the number of types, tokens, utterances and words per utterance.

Figure 1. The frog story
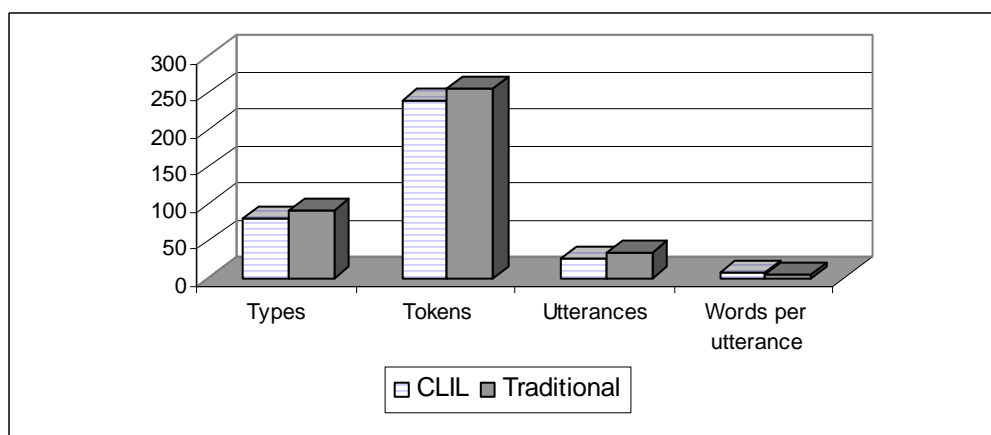
The T-tests indicate that there are no overall significant differences in relation to the mean number of tokens (t=-,446, p. ,660), types (t=-,795, p. ,435), and utterances (t=-1,549, p. ,136). Nevertheless, there are significant differences when the number of words per utterance is compared (F=2,802, p. ,010). The CLIL students obtained significantly higher scores than the traditional group.

3.2 Overall evaluation of oral proficiency

Figure 2 includes the results of the overall evaluation of oral proficiency:

Figure 2. Overall evaluation of oral proficiency
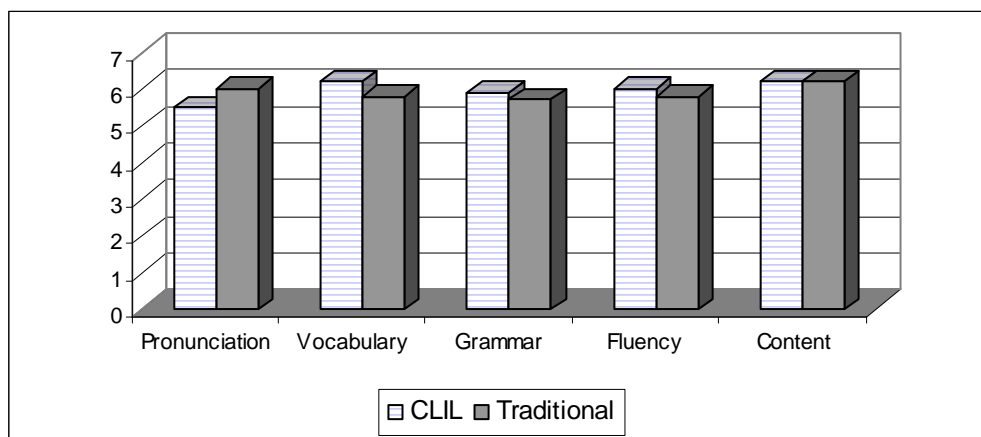
The five categories that have been analysed to carry out the overall evaluation of oral proficiency are: pronunciation (max=10), vocabulary (max=10), grammar (max=10), fluency (max=10) and content (max=10).

The T-tests comparing both groups show that there are no significant differences in any of the five scales: pronunciation (t=-,788, p. ,439), vocabulary (t=1,172, p. ,254), grammar (t=,254, p. ,802), fluency (t=,463, p. ,648), and content (t=,000, p. 1,000).

4. Discussion and conclusions

The results presented in this study indicate that, although the CLIL group performed better in most of the categories analysed, there are no overall significant differences between both groups (traditional versus CLIL) in relation to oral proficiency. This could be due to the fact that the difference in the amount of hours (210 hours) is not sufficient to obtain significantly better results. Ongoing research will shed light on whether the improvement is statistically significant after a longer period of instruction.

Another possible explanation of the results is linked to the type of task. The analyses performed in this study were mainly linguistic, and involving oral production data. Other studies (Jiménez Catalán & Ruiz de Zarobe 2007) have shown how CLIL students present significantly better results in receptive tasks (e.g. a reading comprehension task), as opposed to productive tasks, where the CLIL group does not perform significantly better than the traditional group. This situation is similar to that encountered in some Canadian immersion programmes, where there was a mismatch between productive and receptive tasks. While students were almost bilingual in relation to receptive tasks (reading and listening skills) by the end of secondary education in immersion programmes, that proficiency decreased significantly in productive tasks (see, for instance, Genesee 1987; Swain & Lapkin 1986 for a review). Furthermore, CLIL students seem to have advantages in more global tests (e.g. cloze tests) or more sophisticated analyses regarding lexical richness, variation and complexity (Agustín Llach & Jiménez Catalán (in press); Jiménez Catalán, Ruiz de Zarobe & Cenoz 2006). As mentioned before, this study is part of a longitudinal research project on CLIL in foreign language learning. Thus, further research will enable us to draw more definite conclusions on the effects of content-based instruction.

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Are The Simpsons *Welcome in the CLIL Classroom?*

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1. Introduction

Ever since I began to take an academic interest in CLIL more than 10 years ago, motivation has stood out as a decisive factor as regards student language improvement and results. This paper focuses on the relationship between motivation and the type of teaching material used in the CLIL classroom and is a preamble to a full report from an ongoing study. First, a brief background to the present study is given, second, some empirical data are introduced, third, motivation theory is presented and finally, the relationship between data and theory is discussed.

2. Background

Why *The Simpsons*? To go back to where it all began, we will have to look at the results obtained in Sylvén (2004) where the relationship between CLIL and incidental vocabulary acquisition was investigated. In that study, a background questionnaire was included where, among others, a question was asked about the students' reading habits of English texts. One of the conclusions reached in the study was that

> it is not necessarily the amount of input in the actual school setting that is of the greatest importance, but rather the total input. In other words, and as has been shown in this study, a traditional student who receives a great deal of English input outside of school may score above a CLIL student who mainly gets English input in the classroom. (Sylvén 2004: 225).

This interesting outcome led to a study whose main aim was to investigate in some detail the types and amount of extramural exposure to English among upper secondary students comparing CLIL and non-CLIL students. The study was conducted during one school year and consisted of three parts: a language diary, vocabulary tests and self assessment (for a detailed account, see Sylvén 2005, 2006, 2007). In analyzing the language diary it was evident that, among other types of English input, Swedish students watch a variety of American

TV-shows. The one that the majority watched, and a large number of students listed as their favourite one, was *The Simpsons*.

3. Some empirical data

As pointed out above, the present study includes a self assessment part. In that self assessment the question "Where have you learnt most of your English?" is included, with the following answer alternatives: (a) all of it in school, (b) most of it in school, (c) most of it outside school, and (d) all of it outside school. The results, graphically illustrated in Figure 1, show that 54 % of the CLIL students and 40% of the non-CLIL students are of the opinion that they have learnt all of or most of their English outside of school.

Figure 1. Results on the question where students have obtained their English proficiency
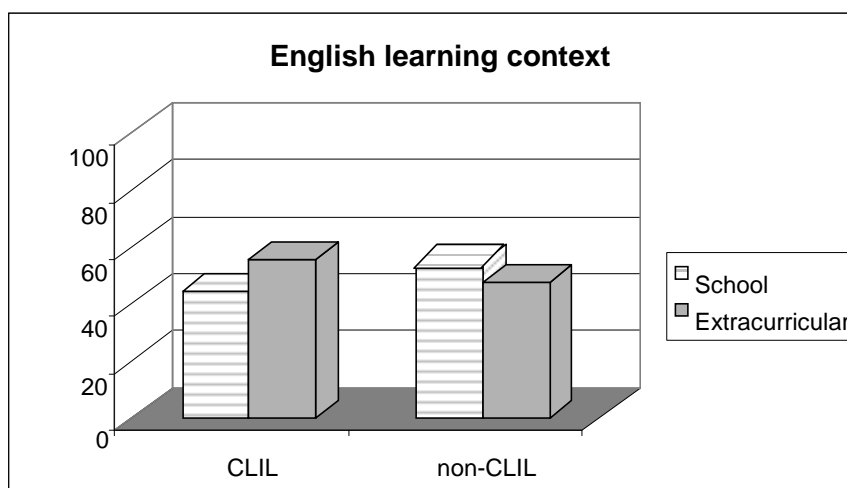
Why and how learning takes place is an ongoing debate, but in this case certainly motivation and relevance are key factors. Students watch TV-programs, read books, play computer games, listen to music, etc. of their own choice. They choose programs (books, games, music) because they are somehow relevant to the individual student. Therefore (drawing on Gass 1988: 200), they are motivated to transform the ambient language into apperceived input, via comprehended input to intake and then to integrate it into their own language proficiency and thereby they are able to produce automated output.

   Bearing in mind the supposed positive effect of the use of material relevant to the students in teaching, it is surprising to note that the amount of

authentic material[1] used in the classroom is very limited. According to what students themselves report in the language diary in the present study, less than 5% of the school day is devoted to some type of authentic material. To find out more about the actual situation, four teachers were interviewed about their views on the use of authentic material in the classroom.

Of the four teachers interviewed, two are involved in CLIL classes and two work only with non-CLIL classes. Two teachers are female and two male. The analysis of the interviews suggests that all four teachers agree that they would indeed like to use much more authentic material than what is presently the case. The question, then, is why is the use of such material so scarce?

The reasons stated by all four teachers are several. First of all, they say that such material is either too difficult or too easy. When the content of the material is at the right level, the language tends to be at a much too sophisticated level, and vice versa, when the language is at the right level, then the content is too simplified. Furthermore, authentic material is not adjusted to Swedish curricula, and in order to adjust any material, time and money is needed. It is a well established fact that being a CLIL teacher is usually more time consuming than being any other type of teacher, much due to the fact that a great deal of time has to be spent on adjusting and creating appropriate teaching material.

However, when authentic material is used, it is done so primarily in order to take advantage of the varied vocabulary encountered in present-day texts or programs. The teachers also use authentic material to show students examples of current and up-to-date language. So then, how can this be linked to the theory of motivation? Let us turn to some different definitions of such a theory.

4. Motivation theory

In 1967, Robert C. Bolles introduces incentive theories of motivation, where the two complementary concepts *drive* and *incentive* play an important role as "drives push and incentives pull; the two complement each other in providing a motivational explanation of behavior" (1967: 332). Transferred to the present context it can be argued that the extramural exposure of English that students are subjected to form one of the drives for many students to choose the CLIL class rather than a non-CLIL class, and that one of the incentives for

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[1] The term *authentic material* can be used in a variety of meanings. Here it is used in the sense "language produced by and for native speakers".

these students is to be able to use and understand authentic English in future studies and careers.

Another type of definition of motivation theory is the one suggested by Gardner (1985, in MacIntyre 2002: 48) which states four characteristics of a motivated person. In this definition, however, the motivated person is in focus, rather than motivation as such.

Pintrich & Schunk (2002: 5) suggest the following definition: "Motivation is the process whereby goal-directed activity is instigated and sustained". They emphasize that motivation is a process, and further that it is reciprocal, so that what is learnt and performed is influenced by motivation, and the other way around, what is done and learnt influences motivation. Also, they point out that "from a motivational perspective, the usual assumption is that authentic tasks will engage student interest, intrinsic motivation, or utility value, which will lead to better learning and achievement" (Pintrich & Schunk 2002: 348). Among other things, they discuss how interesting tasks are and the need to challenge students in order for them to be motivated and also to raise their level of learning. In other words, the fear expressed by many teachers of authentic material being too difficult for students to work with, may not be entirely justified. Pintrich & Schunk (2002) refer to several studies which highlight the importance of using authentic tasks in classrooms, both from a cognitive and a motivational point of view. Further, the use of such material "facilitate[s] transfer of learning outside the classroom context" (Pintrich & Schunk 2002: 348), which, ideally, should be the ultimate aim of any teaching effort. Other scholars (see, e.g. Blumenfeld *et al.* 2000; Singer *et al.* 2000) encourage the use of authentic tasks and meaningful activities that link the content of the curriculum to real-world problems and to the backgrounds and experiences of the students. From this theoretical standpoint, let us turn back to the CLIL reality.

## 5. Relationship between empirical data and theory

What is the relationship between the various theoretical definitions we have seen above and the empirical data found in the language diaries from students and the interviews with teachers? Unfortunately, it seems that practicalities such as time and money, for instance, stand in the way when trying to bring material into the classroom (regardless if it is CLIL or non-CLIL) that might be more motivating for students to work with. In the following, an attempt is being made at depicting first the CLIL reality (Figure 2) and then the CLIL vision (Figure 3).

Figure 2. CLIL reality in Sweden
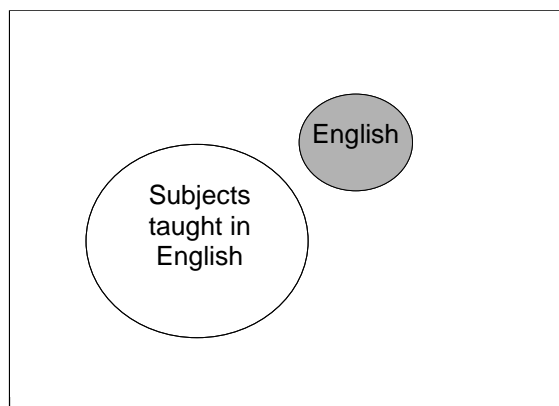
In Figure 2, the reality of many CLIL contexts in Sweden today is illustrated. The big circle represents content subjects taught with English as the medium of instruction. The small circle, hanging by itself on the side, represents the subject of English, which is not involved in the teaching of other subjects at all, or to a very small degree. The vision of what CLIL should be is, of course, slightly different.

Figure 3. The CLIL vision
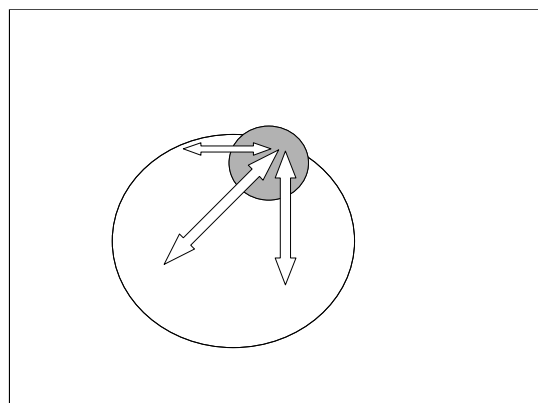
In Figure 3, the vision of what CLIL should look like is illustrated. There, the subject of English is closely related to all other subjects taught in English. An exchange of ideas, materials, problems, etc. is constantly taking place back and forth between subjects, teachers and students. However, the vision of CLIL is more fully depicted in Figure 4, where a close contact with the 'real world', i.e. the world outside of the school walls, is maintained.

Figure 4. The CLIL vision in connection with the real world
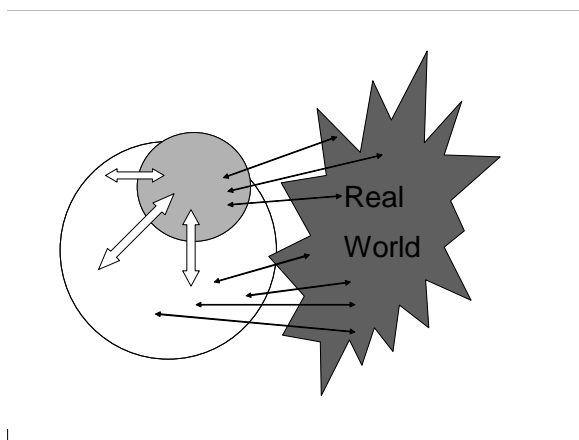

Figure 4 tries to illustrate how authentic material is brought into the school curriculum in several subjects. The content subjects are linguistically supported by the target language class, and the backbone of the teaching of the target language is made up of authentic material used in other subjects.

By working in this way, students, who are already quite used to being exposed to authentic language, are challenged and at the same time they get acquainted with real language and acquire techniques in how to deal with any difficulties. In the long run they will be better prepared to use their language skills for what they actually need them for, viz. to pursue an academic or a professional career in the target language. In passing, it can be noted that this is precisely what many of the CLIL students who participated in the present study state that they wish to do.

To sum up, the use of authentic material seems to be a win-win situation in a CLIL-context, not least from a motivation theory point of view. CLIL students are used to encountering authentic target language texts outside of school and are, therefore, in a good position and motivated to do so also within the school curriculum. As we have seen, motivation works reciprocally, so that if students are supported in how to tackle authentic language, then they become even more motivated to exposing themselves to such language in a number of other areas. To draw on Bolles' (1967) terminology, authentic material is one of the original drives behind many students' choice of CLIL, and the ability to use the language in the real world, one of their main incentives. It is thus hoped that in the future teachers, and in particular CLIL teachers, will have the motivation and possibility to use authentic texts to a much larger extent than what presently seems to be the case in their teaching. Why not start with *The Simpsons*?

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Insights from Italian CLIL-Science Classrooms: Refining Objectives, Constructing Knowledge and Transforming FL-Learners into FL-Users

Y.L. Teresa Ting

1. Introduction

In Italy, CLIL is clearly a grassroots movement of EFL teachers, appearing frequently on the agenda of national EFL teachers' conferences (e.g. TESOL-Italy; LEND[1]), and only recently receiving attention from non-EFL teachers (AND[1]; Ting & Parise 2007). Therefore, its implementation usually reflects the initiatives of eager FL teachers whose attempts are aggrevated by the lack of research and theories (Dalton-Puffer 2002; Van de Craen 2001) regarding how the 50:50/Content:FL CLIL-equilibrium can be established so that both subject and language acquisition are attended to (e.g. Marsh 2002, 2005). To date, commercial CLIL-Science materials which meet the CLIL-equilibrium are rare (e.g. Martelli 2002) with most being reading comprehension activities designed for use by EFL teachers (Soars *et al.* 2006; Fitzgerald *et al.* 2007) so that not only is the content knowledge far inferior to that of the L1-Science curriculum, the post-reading tasks fail to cognitively engage learners towards the formulation of *conditionalized* knowledge (see Simon 1980). Many CLIL teachers thus make their own materials (e.g. www.cilt.org.uk). However, with factual and objective subjects such as science which leave little room for speculative and personalised discourse (e.g. Dalton-Puffer 2004; Gassner & Maillat 2006), many EFL teachers find themselves outside their *comfort zone*, relying on science-specialists to validate the relevance of their efforts. The disproportionate amount of time dedicated to lesson preparations for the negligible amounts of content and language learning actually acquired

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[1] TESOL: Teachers of English to Speakers of Other Languages; LEND: Lingua e Nuova Didattica (Language and New Didactics); AND: Associazione Nazionale Docenti (National Teachers' Association)

through small e.g. 2h/week of 'science in English' initiatives discourages EFL teachers from broaching CLIL again (Ting *et al.* 2006).

This type of CLIL, while extremely limited, may reflect the more usual attempt at 'bilingual education' in most parts of the world where native-speaker subject-specialists are rare, truly bilingual schools are for the select few and team-teaching is economically unfeasible. Thus the importance of developing 'good CLIL-Science guidelines with cross-curricula relevance. This contribution is a step in this direction by providing a first-hand CLIL-Science teacher's perspective of how the 50:50/Content:Language CLIL-equilibrium can be achieved. Reflective teacher-led action research provides bottom-up field-based insights for informing both curricula development and classroom practice through experiential data (Stenhouse 1975; Elliot 1995; Schön 1983). The following discusses two CLIL-Science initiatives undertaken in quite different motivational and scholastic contexts and presents the materials and teaching approaches which aimed to achieve both the CLIL-equilibrium and a constructivistic learning paradigm. Despite the highly specialistic nature of scientific knowledge, science teaching may be that which lends itself best to hands-on experimentation and constructivistic learning which not only promotes deductive reasoning but heightens learners' affective as well as cognitive states (e.g. Hackling *et al.* 2007).

2. Contexts and objectives

Context 1. Curricular CLIL-Science

The *Liceo Europeo* context represents one of 22 such Lyceums in Italy where two non-lingua subjects are *veicolata*, partially or completely, in a FL. Here, the CLIL teacher team-teaches with the L1-Science teacher who is responsible for completing the curriculum. As the CLIL lessons must cover a part of the L1-Science curriculum that is not revisited in the L1, it was agreed that the ca. 18h of CLIL/year would be used to introduce more basic concepts (e.g. functional anatomy of the heart) while the L1 would be used to relay more technically challenging concepts (e.g. heart electrophysiology). Students were examined for CLIL-content knowledge but FL-competence was not evaluated. Finally, while CLIL usually assumes that learners are motivated to use the target language to access a subject of their interest, Science was not a favourite among these *Liceo Classico* students, and some even despised English. Appendix A shows the first two of seven input activities regarding the functional anatomy of the heart: the answers are actually embedded within

the exercises, obliging students to utilise their *knowledge of English grammar to construct content knowledge*.

Context 2. Extra-curricular CLIL-Science

A 100-h after-school Language Project at a Scientific Lyceum, of which 20h were devoted to CLIL in a module entitled "Physics in English" taught by only the CLIL-Science teacher. As the Project was extra-curricular, rather than covering scholastic content, the 20-h module aimed to impart students with some *core concepts* in Physics through hands-on experiments using everyday objects (Appendix B) and to familiarize students with *scientific methods* (observing, describing, reporting, convincing etc.). In addition to these *trade-skills*, informed by my experience with university students whose self-confidence as EFL-users is so weak they fail to deliver effective oral presentations and, worse yet, hesitate to socialise and network at international conferences, the Project worked to strengthen learners' *communicative courage*, which, borrowing loosely from Freud, I wish to call their 'FL-*id*'. Students were trained to deliver scientific presentations through familiar objects such as pastries and kitchenware before developing their final oral presentations of physics concepts. Such scaffolding made an otherwise high-stress situation (Bruce & Saeed 1999) approachable, transforming FL-learners into FL-*users* in a low anxiety context (Young 1991; Schumann 1998) and integrating conceptual understanding into communicative competence.

Students in both contexts ranged in age between 16-18.

3. Learning outcomes and implications for CLIL-science curricula

Context 1

Figure 1 shows the typology and distribution of the 98 instances of errors identified in the 1,158-word corpus of written answers to open-ended questions of the test examining knowledge acquired through CLIL.

Figure 1. Distribution of error typologies in students' written output (% of total errors)
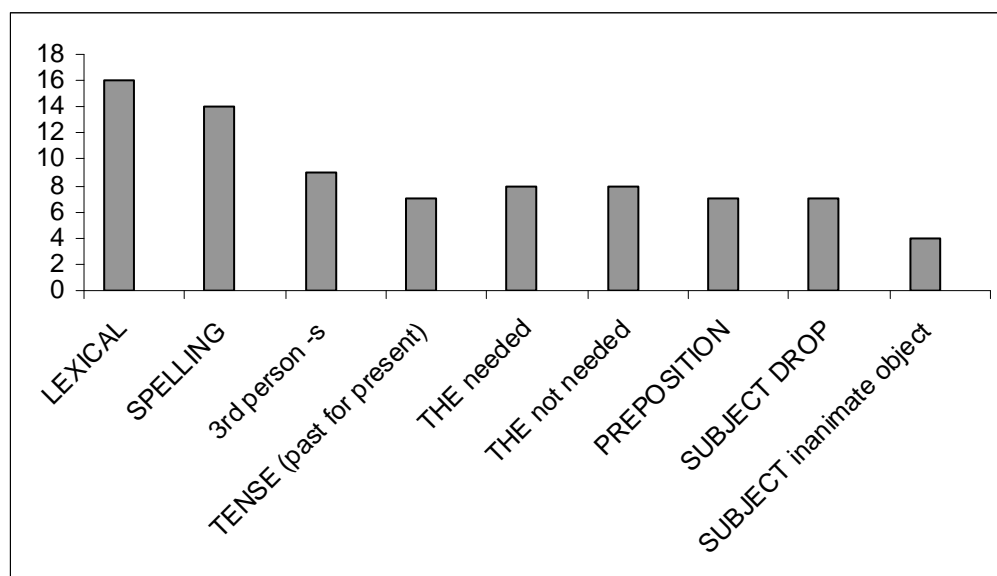
While errors related to lexis and spelling together accounted for nearly 30% of all errors (Figure 1) most represented misspelling or misuse of non-technical lexis:

Extract (1)

1> The pulmonary vein leaves [sic][1] oxygenated blood into heart [sic][2], in fact is [sic][3] a [sic][4] lung's vein [sic][5].

2> ...the production of "energy" that serve [sic][6] at [sic][7] the [sic][8] live [sic][9].

3> The aorta is the (mezzo) [sic][10] that (porta) [sic][11] the blood rich of [sic][12] oxygen to all body [sic][13].

4> The WBC defended [sic][14] the body from the [sic][15] strange element [sic][16], called the imunitary [sic][17] system and attachs [sic][18] directly [sic][19] the strange elements that are in the body.

5> ...it is an [sic][20] one-way valve for privends [sic][21] the goes back [sic][22] of the [sic][23] blood from the left ventricle to the left atrium.

6> The aorta is very important and very big, the pression [sic][24] of the blood is high because the aorta contains oxygenated blood. The aorta port [sic][25] the blood from the hart [sic][26] to the body. The aorta is caracterized [sic][27] by the short "artery" that at the end are called "capillares" [sic][28] because are [sic][29] very tiny.

These data clearly implicate lexical learning as a priority of CLIL-Science curricula. However, contrary to what one might expect for such a specialistic subject, it is not so much the teaching of technical lexis that needs attention but the securing of non-technical lexis. In fact, the mismanagement of very elementary non-technical lexis is seen in errors such as *leads* or *carries* rather

than leaves (1) and the verb-noun substitution of live for *life* (9) plus instances where non-technical lexis is misspelled (18, 21, 27, also throght, whit, thath) or used inappropriately (22). Likewise, the use of Italian (10, 11) or Italianized lexis (25) for elementary content words. In fact, 23% of the off-list words were classified as such because they were misspelled non-technical words (e.g. privends, n=8) or represented a gap in non-technical lexicon (n=6; e.g. cibi, food). On the other hand, instances where technical lexis were misspelled or substituted by Italian were rare (17, 24, 28; also diapham, involuntari, air sach, coagulazione), accounting for only 6% of the tokens of content-words. In fact, 77% of the off-list words were highly content-specific words which were both correctly spelled and used (e.g. alveoli, bicuspid, striated). It can thus be concluded that technical lexis can be acquired comparatively successfully when content knowledge is accessed *through* the FL, as done here.

Another important finding of this CLIL context regards students' willingness to use English. Being an added-value component of the Science curriculum, students were not obliged to respond in English when tested. In fact, of the 16 students who took the written test, eight answered in Italian, with only one considered an "excellent" student while the others were evaluated by teachers as "below-average/poor". However, of the eight who opted to answer in English, three were weak students with one judged by all nine teachers/instructors, including that of English, as a "poor" student. In fact, despite the admirable effort to write in English, the *content* knowledge of this student remained poor (Extract 2). Nonetheless, that even the weakest *chose* to use English during a high-risk test-taking situation reveals an invaluable 'fringe benefit' of CLIL – the strengthening of learners' FL-*id*.

Extract (2)

The pulmonary vein is the vein thath [sic] takes the deoxygenated blood.

The aorta is the principle vein for the passage of the [sic] blood.

The platelets is [sic] responsible of [sic] the (coagulazione) [sic]

Context 2

This 20-h CLIL-Project had two parallel "competence-building" (Marsh 2002) components: the Content component focussed on understanding core physics concepts while the Language component sought to empower students as FL-users. Transcript (1) illustrates a student's ability to develop a coherent discourse about a common item of Italian kitchens, and demonstrates how the cultivation of the trade-skills of describing and convincing can be used to reinforce learners' FL-*id*:

Transcript (1) (Video: 150 sec.)

Teacher:

So Daria, tell us what you've invented.

Student:

(smiling) The object I invented is very useful (laughter from
class) …it is *like similar* spoon but… it's different with the spoon
spoon because ….the end …of my object is longer than the end of *the*
spoon… and at the end we have a curving part… but with a flat
part …with a point at the end to have a more aerodynamic form
(laughter). This is *more* useful because it is made of …wood …so we
can stir …the food in a …*kettle* that is on a …kitchen range *without*
burn …our hand. In fact the wood doesn't absorb heat…so the *wood*
spoon is never *so hot to burn* our hand…eh…then it is important
because ….*the end* we have a hole that… *thanks to* the hole, for
example, the water in a kettle ….doesn't splash …out of the
kettle …and …*most important also* …the *end very* long *because* we
can also stir in a very high kettle - buy it! (laughter)

➢ holds spoon by handle with ladle pointing upward
➢ indicates handle and progresses down to ladle and indicates relevant parts
➢ holds spoon and makes stirring action

➢ indicates hole in centre of ladle

➢ stirring action

➢ emphatic gesture with spoon

While there were several pauses (…) and some identifiable errors (italics), the presentation was textually coherent. It was arguably students' comfort with the task of describing everyday objects for which no-one was 'expert' that accounted for students' discursive fluency in these tasks. While pragmatic competence sustaining an oral presentation does not guarantee the successful management of, for example, a dialogue, these learners were undoubtedly more courageous FL-*users* by the end of the 20-h Project. In fact, while some inaccuracies were persistent despite explicit grammar instruction, these did not detract from the efficacy of students' final oral presentations in which they successfully synthesised the physics experiments undertaken into 5-min. multimedia presentations: effectively animated slides were used to describe procedures and observations, deductions were presented logically and correct links made between physical concepts and everyday phenomena.

4. Conclusions

Given that public speaking is fear-evoking for many adults (Bruce & Saeed 1999), it is noteworthy that these high school students not only gave textually

coherent presentations before an audience of university science professors, they did so about indisputable physics concepts, in a FL. Therefore, even a 20-h CLIL-Science project can provide useful learning if the general goals of content and language are re-focused into the more immediate objectives of "competence building" (Marsh 2002): without leaving their professional comfort zones, language and science teachers can use constructivist paradigms to help learners develop trans-disciplinary trade-skills, rather than Science or Language *per se* (Huang & Morgan 2003). Likewise, where CLIL was part of the curriculum (Context 1), core concepts were constructed *through* the FL by obliging learners to utilise their knowledge of the FL to gain content knowledge and master technical lexis. Surprisingly, despite the highly specialist nature of Science, students had no problems with subject-specific lexis but rather non-technical content words, contrary to findings when more humanistic subjects are taught in a FL (Morris 1993). Whether this is because scientific lexis and Italian often share a similar Latin root will require further research but the findings here indicate that a successful CLIL-Science curriculum must secure the learning of *non*-technical content words so these can be expanded into their technical-semantic functions (e.g. *carry a box* → *carry blood*; Nation 1990).

In both contexts, learners activated sociocognitive and sociolinguistic processes (e.g. Alanen *et al.* forthcoming) and learnt to learn (Claxton 2004) using deductive reasoning to construct, *through* the FL, deep-level conceptual understandings of scientific notions which are transferable (Byrnes 1996). Such understandings can be expected to outlive end-of-term quizzes. US Science-curricula have been criticised for being "a mile wide and an inch deep" (Schmidt *et al.* 1997), inundating learners with facts but doing little to secure conceptual understandings. This is unfortunately not only so in the US and not only with Science (e.g. Wineburg 1991). What I have described here are two CLIL-Science teaching methodologies which have arisen from what might be considered the poor man's version of 'bilingual education'. However, this less-than-ideal situation obliged me to consider whether there was something I, as a teacher, *could* do for the students in such pitiful little time that I *would not* otherwise do. By constructing CLIL-Science knowledge through materials/methods seeking cognitive engagement, it was possible to overcome contextual idiosyncrasies and empower students in both contexts with a stronger 'FL-*id*'. While CLIL did not improve weaker students' capacity to acquire technical details (Stohler 2006), learners were prone to employ their FL-discursive prowess to write about content which had been approached through the FL. Be it a stronger internal *id* or the donning of an

external mask (Gassner & Maillat 2006), CLIL pushes even weaker students to garner their linguistic resources to generate discursive output.

Although not exactly new (Räsänen & Marsh 1994), CLIL is "hot" (Dalton-Puffer & Nikula 2006). However, beyond being an approach to learn *both* subject and FL, CLIL-Science offers a prime context for implementing good science-teaching practice which seeks conceptual understanding over factual accumulation. Future research should identify the conceptual and linguistic requisites of an equilibrated 50:50 CLIL-Science curriculum.

Appendix

Appendix A. Activities used to teach the functional anatomy of the heart

I. Circle the correct word to complete the following questions (individual work)

1. How *many/much* chambers does the heart have?
2. What are the upper chambers *named/called*?
3. How are the ventricles, the lower chambers, different *from/by* the upper chambers?
4. Is it true *which/that* the heart shows left-right symmetry?

II. Now <u>write</u> the correct answer next to each of the questions above (there are two extras that you don't need)

a. yes it is.
b. yes there are.
c. "atrium" singular and "atria" plural.
d. too much.
e. four.
f. they are larger.

Appendix B. Experiments for cultivating corresponding core Physics concepts

Concept	Experiment used	Daily life
I. Heat capacity: water has a greater heat capacity than air	Matches were put to balloons blown up with air and balloons filled with water. Those with air exploded immediately, as expected, while those filled with water did not.	A metal pot becomes red-hot if we forget it and allow all the water to evaporate off.
II. Heat = Energy = Molecular Movement	Ink was dropped into a cup of cold water, a cup of warm water and a cup of hot water. Drops of ink in hot water dissipated immediately (a visual demonstration of the molecular motion of water) and the droplet in cold water remained compact for longer.	When we pour cold milk into cold coffee, it "stays together" longer than when we pour it into hot coffee.
	Brown sugar and water. Same as above but the demonstration visualises the dissolution of a solid as a function of increased motion of water molecules.	Sugar dissolves slower in cold tea than it does in hot tea.

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Why and How CLIL Works. An Outline for a CLIL Theory.

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1. Introduction

Content and Language Integrated Learning (CLIL) is a powerful and empowering way to learn languages. At the same time the approach is in line with European language policies on the promotion and implementation of multilingualism (Commission 2005; High Level Group 2007). As a result, most CLIL research is policy-driven research. While we do not want to question this, it is equally legitimate to look at CLIL from a completely different point of view, namely to consider CLIL as an innovative approach to language pedagogical practices in line with modern research about language learning and teaching as well as motivational aspects, cognitive development and learning and the brain. In this paper, an intricate approach towards CLIL is put forward, which – at the same time – is presented as a research paradigm for the future.

2. General aims of CLIL

Maljers *et al.* (2007) present an overview of European CLIL practices by having authors from twenty countries reflect on CLIL practices in their respective countries. One question presented to the authors was "Describe the aims of CLIL". It is striking to see that most authors consider as the primary aims of CLIL teaching and learning: (i) the promotion of linguistic diversity; (ii) promoting language learning; (iii) increasing the learner's proficiency; and (iv) internationalization. These are, of course, important goals but it seems to us that CLIL opens much more opportunities for learning than were hitherto put forward.

But before we explain this point of view, let us briefly discuss one rather unfortunate result of CLIL's success in Europe, namely the tacit conviction that CLIL is about promoting English only. In Maljers *et al.* (2007) learning regional languages as target languages is only mentioned in the sections

devoted to France, Italy and Estonia. The others seem to take for granted that English is the target language to such an extent that Norway states that one of the goals of CLIL is improving learners' proficiency in English. While the importance of English is not questioned as such, we strongly advise school authorities to consider the introduction of local languages on primary school level before the introduction of English takes place.

3. Approaches to CLIL research

Our approach to CLIL research is wide-ranging, addressing the learning of languages, as well as subject matter knowledge, attitudinal and motivational approaches, cognitive development and brain research. In doing so we would like to stress that CLIL is not only a powerful way to learn foreign languages, but that learning language and subject matter at the same time has important consequences for learning in general in the sense that the brain is fundamentally altered (Blakemore & Frith 2005). We feel that these aspects remain largely unattended in current CLIL research. The following presents six tenets or principled approaches towards CLIL research.

Tenet 1. Target or second language development. Main research question: does the CLIL approach lead to better language proficiency in the target language compared to traditional approaches?

A distinction is made between primary school and secondary school results. As for primary school results, the answer to the research question above is unequivocally: yes. But there are a number of factors that are as yet unknown because they have not or poorly been researched. The development across various forms of proficiencies seems unevenly spread with respect to listening, speaking, reading and writing. CLIL education leads to native-like listening comprehension and erratic results as far as speaking is concerned. With regard to reading a distinction has to be made: if reading in the target language precedes reading in the first language, until 9 to 10 years of age the target language prevails as the most important language for academic affairs. The same is true for writing. If, however, the learning of reading and writing takes place in the first language, the learner's most important language for academic achievement remains the first language (cf. Braun *et al.* 2001, 2002, 2003; Lecocq *et al.* 2004; De Groot 2005; Jiménez *et al.* 2006; De Vriese 2007; Slembrouck 2007). It goes without saying that this observation is influenced by the number of CLIL hours in the curriculum. As yet it is unknown in what way language development is influenced in later stages.

Secondary school results do not yield the same results as primary schools although, in general, the answer to the research question above is also yes. However, results seem less uniform. Sometimes better results are reported compared to traditional methods, but sometimes no significant differences are found. Results seem to depend much more on individual variation, teacher characteristics and intra- and interpersonal variation and abilities. Finally, some scholars recommend doing research on pragmatic aspects of language acquisition and development (Lyster 1998; Gajo 2001; Huibregtse 2001; Admiraal *et al.* 2006; Gassner & Maillat 2006; Mewald 2007; Smit 2007).

Tenet 2. First language or mother tongue development. Main research question: does CLIL lead to improved first language development compared to traditional approaches?

The research question is related to a more general problem about the simultaneous acquisition of two languages. Children can easily acquire two linguistic structures in a natural environment at the same time. After a study of 14 acquisition studies Genesee (2003) concludes that lexical, syntactic and phonological development in bilingual children is comparable to monolingual children. But this seems to contradict Cummins's (2003: 63) statement that "the level of development of children's mother tongue is a strong predictor of their second language development". Here, it is to be reminded that Cummins is referring to minority children in a context of migration. In general, it can be said that there is a difference between acquisition processes for majority language and minority language children. This is a complex discussion that cannot be addressed within the scope of this paper.

Results from a Dutch/French CLIL primary school in a French-speaking environment in Wallonia, i.e. French-speaking Belgium, indicate that despite the fact that the pupils received 75% of their instruction in Dutch they easily attained the final goals in the mother tongue (French). Moreover, they attained higher scores in calibrated tests than monolingual children (cf. Lecocq *et al.* 2004; De Samblanc 2006; De Vriese 2007; Van de Craen *et al.* 2007a and b).

There are no arguments supporting the view that CLIL be detrimental to the mother tongue. If anything, there are more positive than negative effects (Bialystok 2004; Van de Craen *et al.* 2007a and b). However, this might not always be the case with migrant workers' children (Cummins 1984, 2003). There is some evidence that in language areas where a majority and a minority language compete, fear for language loss is frequently expressed as an argument against CLIL education (Lochtman *et al.* 2007).

Tenet 3. Subject matter knowledge. Main research question: does CLIL lead to better subject matter knowledge than traditional learning?

In primary schools there are no indications that subject matter knowledge would be less good in CLIL classrooms than elsewhere. If anything, teachers report the opposite, especially related to Maths (Van de Craen *et al.* 2007a and and b). In secondary schools the results are more diverse. Some scholars argue that there are no differences in knowledge (Huibregtse 2001). Stohler (2006), for instance, reports "neither positive or negative consequences on the acquisition of knowledge" (Stohler 2006: 44) because language and knowledge are believed to be so intimately related that no distinction can be made between them. Other researchers suggest that the loss of implicit learning capacities through age might be of influence (Paradis 2004) while still others suggest inhibition as a determining factor (Bialystok 2005).

The state of the art with respect to subject matter knowledge suggests that: (i) In primary education subject matter knowledge seems to be boosted more than in secondary education. (ii) In secondary schools there seem to be few negative effects as a result of the CLIL approach. (iii) More research is needed to entangle the considerable number of context variables and their influence on older pupils' knowledge acquisition.

Tenet 4. Attitudes and motivation. Main research question: in what way does CLIL influence attitudes and motivation vis-à-vis languages and language learning?

There exist few large-scale studies on attitudes and motivation in bilingual learners in a CLIL context. In Brussels, bi/multilingual young learners and adolescents show the following: (i) Young learners are highly motivated to learn languages and not only English (cf. Allain 2004). (ii) Adolescents show positive attitudes, no loss of identity and they consider bilingualism as a core value; moreover, it enhances their self-esteem and motivation to learn languages (Ceuleers, in print). It is not too far-fetched to extrapolate these results to CLIL pupils.

Tenet 5. Cognitive aspects. Main research question: in what way does CLIL influence cognitive development as compared to traditional (language) learning?

CLIL induces the learner to be more cognitively active during the learning process (cf. Bamford & Mizokawa 1991; Bialystok *et al.* 2005; Bialystok 2004, 2005; Cook 1997; Jäppinen 2005; Van de Craen *et al.* 2007a). The

neural substrate of this (see tenet 6) is that more neural connections are being made (cf. Fabbro 1999; Edelman & Tononi 2000; Blakemore & Frith 2005) and this, naturally, advantages young learners over older ones.

Yet, it would be wrong to suppose that cognitive added values are solely dependent on the CLIL approach as such. Wilburn Robinson (1992) examined twelve dozen studies between 1960 and 1990 and found that young children who have studied a foreign language performed better on standardized tests and tests of basic skills in English, Maths and Social Studies. Young children who had four or more years of foreign language scored higher on verbal tests than those who had had four or more years in any other subject area (cf. Wilburn Robinson 1992; see also Cooper 1987; Webb 2000). Cognitive advantages seem related to early (foreign) language learning independent of the methodology. Hence, there is no doubt that young children exposed to CLIL cognitively benefit from this.

Tenet 6. Brain matters. Main research question: how does CLIL affect brain development as compared to traditional (foreign) language learning approaches?

The most general aspect related to brain workings in CLIL and/or immersion learning environments is that the bilingual brain needs less effort, i.e. less work load to perform specific tasks under scanning conditions (Blakemore & Frith 2005; Bialystok *et al.* 2005; Mondt 2007). Consider the following images issued from on-going research (see Mondt *et al.*, in preparation).

The first picture shows the average results of brain scans in monolingual children (age 8-9) carrying out a simple calculation task. Picture 2 shows the same in bilingual children. Picture 3 shows the result of children issued from multilingual education.

It is clear that the bilingual brain hardly has to work (Picture 2). No work load at all is shown. Monolinguals have to work much harder (Picture 1) whereas school bilinguals (Picture 3) show an intermediate position.

Picture 1. Monolinguals
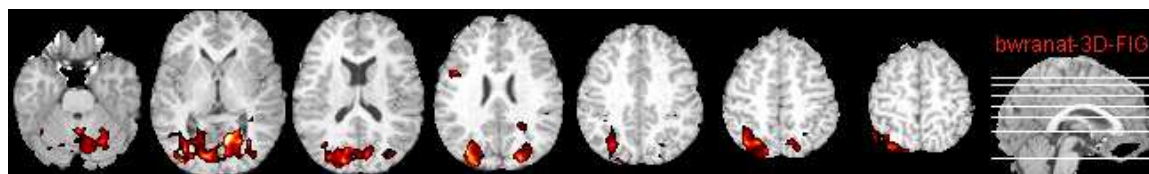
Picture 2. Bilinguals
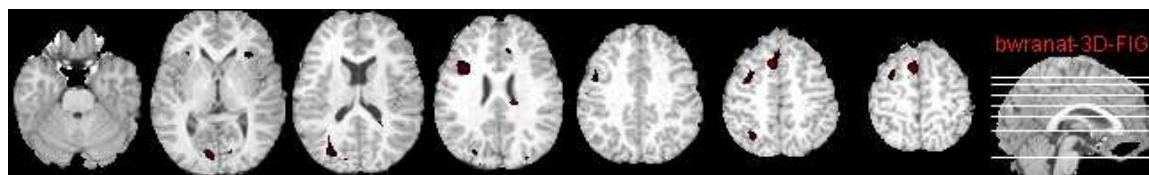
Picture 3. School Bilinguals

It is clear that learning in a CLIL environment results in discrete brain activity, which seems to echo the results of the cognitive aspects. These effects are the embodiment of brain plasticity in young learners and are as such not the results of CLIL itself. However, the aforementioned results show that CLIL exploits this plasticity and as such helps in creating 'better' brains (Blakemore & Frith 2005).

4. Conclusion

The six tenets that have been presented illustrate that CLIL is more than just another method of language learning. CLIL has implications for the learning process as a whole and is as such an innovative way of looking at (language) education. However, we also feel that the tenets could become the basis for a comprehensive CLIL theory.

The implicit language learning processes that CLIL entails in young learners shows transformations from lower order aspects (i.e. learning a language) to higher order ones (i.e. cognitive added values) and this is commonly called "emergence" (cf. Johnson 2001). As there is no pre-programmed plan, only self-organization processes seem to govern this transformation (cf. Oudeyer 2006). As a result, CLIL theory joins general learning theory and brain research.

A CLIL theory is then based on principles of self-organization (see also Van de Craen & Mondt 2007) and strongly resembles theories of emergence. It also takes into account cognitive and brain aspects as well as motivation theory. In this sense, CLIL is more than ever innovative and can contribute substantially to both linguistic and social theory.

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