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Abstract

This article presents a study of written development in English as a foreign language produced in a content and language integrated learning (CLIL) environment. The texts analysed, from history classes, were collected annually over the four-year obligatory junior secondary education program from the same students (aged 12 to 16), in two state schools in Madrid, Spain. The ability to produce coherent texts and the appropriate management of the nominal group, or noun phrase, to create disciplinary registers are key skills for academic writing. With the purpose of identifying the linguistic resources used to create coherence and appropriate register in the CLIL students' written texts, all the nominal groups in the corpus were analysed in terms of recoverability of the elements they referred to, further classifying the referential elements into different types. Finally, the structure of the nominal groups was analysed for pre- and post-modification. The results show development in the control of textual resources, as well as some increase in nominal group complexity, over the four years. The study suggests that CLIL settings, which focus primarily on the learning of content, provide suitable contexts in which to develop written discourse, since the students can draw on a solid knowledge base from which to create their text. Students need to be given the opportunity to construct scaffolded but longer and more autonomous texts in the required genres, an ability which is inextricably linked to academic success in the content area.

Keywords

content and language integrated learning (CLIL), second language writing, secondary school, development, register, nominal group structure, coherence

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I Written discourse development: A challenge for CLIL teaching

Being functional in two foreign languages – the 2+1 European policy – has led to increasing implementation of the teaching of content subjects in a foreign language in Europe. This is seen as a way to extend and enrich the input that students receive, and it places them in a situation in which the use of a foreign language for communication is necessary to achieve immediate goals. Although the European Commission defines CLIL as content teaching in a second language, including minority languages (Eurydice, 2006), most European research on CLIL focuses on teaching and learning content through a foreign language, with this language usually being English (e.g. Dalton-Puffer & Smit, 2007). A common feature in CLIL European contexts is that the use of the foreign language is mainly confined to the classroom (Lasagabaster & Sierra, 2010), and this is the case in the CLIL project described in this article. Although the teaching of content through second/foreign languages differs across contexts and countries, one objective that should be shared is that of finding ways of achieving better literacy levels (both in reading and writing), since these are key skills determining academic success in the L2.

In contrast to the situation of French immersion programs in Canada or content-based instruction in the USA, CLIL is a very recent teaching–learning scenario in Europe. In Spain, where this study was carried out, the number of bilingual schools has grown very rapidly. In Madrid, for example, in the last five years, about 250 primary schools have introduced CLIL through English in an ambitious bilingual program, and, as these students move into secondary school, new schools are incorporating CLIL into their curricula at this level (over 30 new schools in the academic year 2010–11). This new situation in Europe has already triggered a lot of research, focusing on different educational levels, from the language of early junior school children (5–6-years-old) (e.g. Llinares, 2007) to the training of future teachers (e.g. Escobar & Pérez-Vidal, 2004; Coyle, 2007).

While many studies analyse the CLIL classroom as a site of interaction and the language this produces (Dalton-Puffer & Smit, 2007), there has not been much work published to date on the written production of CLIL students. In fact, extensive classroom observations such as those reported by Dalton-Puffer (2007) show little focus on writing in these CLIL classes. What we do know is that CLIL students, when writing in English on a general topic, out-perform older pupils who have only followed EFL classes (Lasagabaster, 2008; Ruiz de Zarobe, 2010) on many of the measures found indicative of writing quality by Wolfe-Quintero et al. (1998). When it comes to discipline-specific writing, there is even less information available. A few cross-sectional studies (e.g. Llinares & Whittaker, 2006; Coetze-Lachmann, 2009) show early secondary CLIL students not producing the register of the discipline in their written texts, although Coetze-Lachmann reported the same to be true in her geography students' L1 written answers.

Understanding and participating in the genres and registers of the disciplines at secondary level is a challenge for many students, as linguists working in the Systemic Functional Linguistics model have shown (see, for example, chapters in Cope & Kalantzis, 1993; Halliday & Martin, 1993; Hasan & Williams, 1996; Christie & Martin, 1997; Martin & Veel, 1998; Unsworth, 2000; Whittaker et al., 2006). Some of these researchers, analysing different subject areas in both the L1 and the L2, have traced developmental

paths linking cognitive and linguistic demands, beginning in primary school and going through to pre-university level (see especially Schleppegrell, 2004; Coffin, 2006a; Christie & Derewianka, 2008). Matthiessen (2009, p. 224), in fact, identifies as key moments in language learning, on the one hand, early mastery of writing as a mode and, on the other, the transition into ‘the registers of uncommonsense, disciplinary knowledge’, which takes place when pupils start their secondary education. CLIL students, who are learning in a foreign language and thus developing ‘multilingual meaning potentials’ (p. 223), meet the same cognitive challenges as they work with the genres of their subjects. In addition, from a process and problem-solving approach to writing (Heine, 2010), it appears that the added difficulty of the search for form in another language can produce greater awareness of the meanings the writers create around the content. When her teenage writers from a CLIL geography class focused on formulation in the foreign language, Heine found deeper semantic processing of content taking place. There seems to be evidence, then, that the exercise of producing the written genres of school subjects, in which content and language are inextricably involved, can lead to development.

On a practical note, the written mode is the most widespread form of recording CLIL students’ knowledge for assessment, both at national and international levels, in for example, the examinations to obtain the International General Certificate of Secondary Education (IGCSE). While the evaluation of these examinations is based on content and the cognitive demands of the questions (see IGCSE mark schemes and examiner report, 2008), writing appropriately is inextricably part of the content. The ability to write coherent texts in CLIL contexts at the secondary level, then, must figure among the goals for those involved in this type of education.

When attempting to measure or explain what makes the texts they are studying more or less coherent, many researchers have turned to the seminal work of Halliday and Hasan (1976), in which context appropriateness and cohesion are presented as defining features of coherent text:

a passage of discourse ... is coherent in two regards: it is coherent with respect to the context of situation and therefore consistent in register; and it is coherent with respect to itself, and therefore cohesive. (p. 23)

Thus, coherence includes both appropriateness to register through the creation of the type of discourse a reader expects in the context of situation, including contextually appropriate reference, and cohesion, a surface phenomenon in which a network of contextually recoverable reference is built up.

In this article, we trace the ability of a set of learners to construct discourse that is both coherent to the register of an academic discipline and coherent in the context in which it is produced, by examining the deployment of cohesive devices. To this end, we have analysed a key linguistic element in a corpus of written texts, the noun phrase, or nominal group in Systemic Functional Linguistic terms, from two perspectives:

- from the point of view of information management, through the use of nominal groups to introduce and track discourse participants (people, objects, and entities) in a text; and

- from the point of view of register appropriateness, through the use of the nominal group to carry a large part of the information load of the text.

In this article, then, our longitudinal study reports on the development of these two key areas in written disciplinary discourse, and proposes to teachers a tested linguistic model that would allow them to integrate a focus on language form in content classrooms that is both meaning driven and discourse driven.

II Textual coherence and nominal groups in L2 writing

I Creating coherent text in a foreign language

A large part of creating coherent text depends on the writer's ability to provide clear and correct signals allowing readers to distinguish between new and already-introduced information, and to indicate when an already-mentioned participant can be recovered from the context or co-text. In a face-to-face conversation, reference can be negotiated, and problems can be solved. However, in written text, this is the writer's responsibility. A framework to analyse resources for reference in English has been provided by Halliday and Hasan's (1976) model of cohesion, which includes linguistic markers of reference, lexical ties, conjunction, ellipsis, and substitution. The model has been used in numerous cross-sectional and longitudinal studies in L1 and L2 writing. In this section, we make reference to those we have found most relevant to our study.

Control of reference is an important part of the cognitive challenge in learning to write. Favart (2005), after reviewing studies on the stages at which young L1 writers develop control of the expression of cohesion in writing, concludes that understanding of non-sharing of reference appears at around age nine and continues to develop until around age 11. Control of more complex reference (rather than just following protagonists in a narration) also improves through secondary school. Cognitively, then, the writers in our study are at the stage of controlling the production of coherent reference in their L1. There is agreement as to transfer of writing (and reading) ability from L1 to L2 (Cumming, 1994), but, as Manchón's studies have shown (e.g. Manchón et al., 2009), the process of formulation when writing in a foreign language text takes a lot of attention and the linguistic resources needed are often not readily available.

Turning to reference in the writing of young non-natives, in a study of elementary school L2 writing in an English-medium environment, Bae (2001) analysed compositions for their use of linguistic markers of reference, lexical ties, conjunction, ellipsis, and substitution. She found that the majority of errors in the children's essays involved problems of unclear reference and misuse or omission of determiners needed for reference clarification. From Bae's results it seems that the nominal group, especially pronouns and determiners, represents a difficult linguistic area for children to learn to use effectively in an L2.

With more mature writers, lack of linguistic proficiency has also been found to affect the texture of students' writing. Murphy's analysis of the role of nominal demonstratives in written texts by Japanese university students concluded that 'low-level interlanguage

texts are distinguished by their relative lack of cohesion' (Murphy, 2001, p. 156). In the same line, Fang et al. (2006, p. 257) pointed to the nominal group's role of introducing referents and signal co-reference as being 'crucial to constructing clear and coherent texts'. Statistical studies have confirmed this to be the case. Research by Chiang (2003) on the writing in English of 60 beginner to mid-intermediate Taiwanese university students found that – on a scale that rates cohesion, coherence, syntax and morphology – cohesion explained slightly over 90% of the variance in the quality ratings of the compositions. Interestingly, the key item on the cohesion scale contributing to quality was 'transition between sentences in the absence of junction words' (Chiang, 2003, p. 476). Transition without connectors would depend in large part on alternative cohesive devices, such as lexical ties and reference; in other words, on the ability to provide for the flow of information through skillful participant management via the use of the nominal group, including pronouns.

In sum, the nominal group represents a discourse semantic resource, which learners need to develop in order to create effective written text as they move through the stages of their schooling. Information management through this group plays a key role in creating text that is cohesive with its co-text and context, and that allows a reader to build a coherent model of its content. At the same time, the nominal group has been found to be central to the construction of academic register, as we explain in the next section.

2 The role of the nominal group in creating academic register

A great deal of research has been carried out in the framework of Systemic Functional Linguistics on the differences between spoken and written language described by Halliday (1985/89). Many analyses support his claim that '[t]he written language is organised around the nominal group' (Halliday 1996, p. 352). Fang et al. (2006, p. 268) explain that 'nominal structures of great complexity are a key and pervasive feature of academic language,' a point corroborated by other researchers (see, amongst others, Gallagher & McCabe, 2001; McCabe & Gallagher, 2008). Indeed, the nouns, prepositional phrases and attributive adjectives, found to be characteristic of formal written language in Biber's (1988) study, are elements making up highly modified nominal groups. One reason for the pervasiveness of this structure in academic writing is that through the build-up of complexity in the nominal group, a writer can freeze reality conceptually and analyse it, as well as move information to different positions in the clause. For example, expressing the meaning *Greek tribes migrated* in a nominal group, *the migration of Greek tribes*, allows a writer to turn the concept into a participant and use it as subject or object in a clause. This may then become the point of departure for further comment on the role of this migration in the development of civilization. Thus, by constructing the concept as an abstract entity, information flow can be controlled and an argument developed. Building complexity into the nominal group is an ability that is learned through contact with the written mode and so develops through schooling.

In her analyses of writing in schools, Christie (2010) finds that children writing in English as an L1 begin to learn to expand the nominal group structure at around the age of seven and, as they mature, they increase the resources available to them for nominal

group expansion. Christie explains that '[s]uch a facility assists in the building of the lexical density (Perera, 1984; Halliday, 1985/89) that marks mature written language' (2010, p. 149). Coffin (2006b) shows that texts produced by learners at later points in school differ considerably from those written earlier; the differences in their texts include increased nominalization and generalization/abstraction created through complexity within the nominal group. How this development of the nominal group occurs in the case of high school non-native writers is not so clear, although some studies have been carried out. Martín-Úriz et al. (2005), for example, found an increase in post-modification of nominal groups after pedagogical intervention focusing on meaning, while Marshall (2006) shows the role of nominalization in the development of the writing of an Australian secondary school ESL student after specific instruction.

For this feature of written register to develop, it seems there must be sufficient and appropriate input, as Martín-Úriz et al. (2005) argue in their study of the nominal group in L2 learner writing. It also seems that, with more cognitively demanding tasks, L2 learners produce more complex language (Cummins, 1984). History is a discipline that, with the need to express complex relations using abstract notions of time and cause, calls on students to gradually develop their ability to understand and produce more complex nominal groups (Egginis et al., 1993; Veel & Coffin, 1996; Unsworth, 1999; Coffin, 2000, 2006b). Thus, CLIL history classrooms would seem to offer an ideal context to trace the emergence of the ability to build complexity into the nominal group in a foreign/second language.

III The current study

The present study represents a snapshot of writing development in CLIL history classes. The corpus analysed was collected from two classes in two state secondary schools in Madrid, which offered 30% of their classes in English. Most of these students had followed a CLIL program of similar intensity in their primary schools. The data collected come from a number of tasks. Each year during the four years of obligatory secondary education (aged 12–13 to 15–16 years), a topic from the history syllabus was selected and an end-of-topic prompt was designed, in collaboration with the teachers, to summarize the content and the aims of that unit, as specified in the syllabus. The first task was a whole-class round-up discussion, preceded by preparatory oral group work. Writing was done a few days later, on the same topic and following the same prompt. It was done in class, with no material available, in order to capture the students' independent production. A time limit of 20 minutes was set. This recognized the fact that the input for the task had been thoroughly prepared, and responded to the need to accustom students to work under time constraints in both internal and external written examinations. Table 1 gives the details of the topics and data collected. We indicate the average text length to help readers get an impression of the type of texts we are dealing with.

The prompts were designed to give a lot of support to these students studying in a foreign language and not accustomed to writing more than very short answers to questions. They guided the students to cover all parts of the unit, and fulfill the curriculum requirements, which included learning historical facts, explaining cause/consequence, and relating knowledge of a historical period to students' experience.

Table 1 Data collection

Groups	April/May 2006: Ancient Civilizations (1st year 12–13)		April/May 2007: Feudal Europe (2nd year 13–14)		April/May 2008: Philip II and Modern State (3rd year 14–15)		March/April 2009: The First World War (4th year 15–16)	
	School A	School B	School A	School B	School A	School B	School A	School B
Number of texts	26	25	24	23	22	17	22	15
Total number of words	3,951	2,639	2,980	3,338	3,994	4,043	4,188	1,578*
Average number of words per text	151	105	124	145	181	238	190	105

Note: * The class in School B suffered a change of teacher in its fourth year, which affected the students' performance in fluency that year.

Here follows an example from Year 1:

We have been studying the origins of ancient civilizations. Explain why they started in the places where they did, and how they developed. Include information on the characteristics of ancient civilizations, why they were so important at that time and compare them with present day society.

IV Introducing and tracking participants in academic written discourse

1 Identification system

In this section, we provide the theoretical framework used to measure the ability of the learners to introduce participants (people, objects, concepts) into their texts, by signaling that they are not recoverable from an earlier mention, and to help the reader follow them once in the text, by using appropriate signals of reference to the co-text and/or the context. We chose to apply the classification of options proposed by Martin and Rose (2003; see also Martin, 1992; Eggins, 2004) for participant identification, since it provides a discourse–semantic approach to reference. This model goes beyond surface links, allowing analysis of the linguistic ways in which new participants are signaled as they enter a text, and of the ways readers are shown how to follow them through it. Martin and Rose define identification in the following way:

Identification is concerned with tracking participants: with introducing people and things into a discourse and keeping track of them once there. These are textual resources, concerned with how discourse makes sense to the reader, by keeping track of identities. (Martin & Rose, 2003, p. 145)

The main set of options within IDENTIFICATION (in Systemic Functional Linguistics, small caps are used to distinguish the technical use of a term as a system network from a non-technical use) is 'introduce' or 'track'. In every clause there are a number of options

open to speakers and writers with respect to how readers and listeners can be told whether the participant represented in the nominal group is being presented for the first time (introducing reference) or whether it is recoverable from the discourse (tracking reference). In order to introduce a new participant, a writer uses 'presenting reference'; that is, a nominal group with a non-specific determiner (null in the case of non-singular nouns). A nominal group serving as presenting reference is underlined in Excerpt 1 from our data (students' texts are reproduced with original spelling, syntax, lexis, etc.)

Excerpt 1

The consequences of the plague are that a lot of people and animals died, and the bodies stayed in the streets.

After a participant has already been introduced, its tracking through the discourse can be signaled via 'presuming reference' or via 'comparative reference'. Presuming reference can take the form of a pronoun or a nominal group. In the case of the latter, the participant may be either named (via a proper noun) or determined. The latter option uses a determiner, as in *the plague* and *the bodies* in Excerpt 1, or a demonstrative, as in Excerpt 2:

Excerpt 2

because new weapons and machines were used, like tanks or gas bombs ... These new weapons were invented ...

In addition to presuming reference, another option is to present a participant as recoverable from the discourse via comparison with an already introduced participant, as in Excerpt 3, where *other wars* refers back comparatively to *this war*, and *the first war* refers comparatively to *other wars*.

Excerpt 3

The difference of this war between other wars was that it was the first war in wich [sic] all the world was implicated.

Martin and Rose's (2003) taxonomy is summed up in Table 2, which includes further examples from our data. The application of the IDENTIFICATION taxonomy is shown in Excerpt 4, which is the beginning of a successful text in response to a prompt about feudal Europe (second year, students aged 13–14). The tagging indicates the choices made from the IDENTIFICATION system (i.e. Present = Presenting reference; PresumeNOM = Presuming reference via a nominal group; PresumePRO = Presuming reference via a pronoun)

Excerpt 4 (successful identification)

Feudalism in Europe<Present> was a very important historic moment<Present>. Europe<PresumeNOM> grew and new countries<Present> were found. Many people<Present>

Table 2 Identification system

A. Present	participant introduced as new (<i>a, an, one, some/ someone, anyone / plural and mass nouns with no determiner</i>)
B. Presume	ways of mentioning already introduced participants
1. Pronominal	1st, 2nd and 3rd person pronouns
2. Nominal	a) named (e.g. <i>Philip II, Europe, his wife, Mary Tudor</i>)
	b) determined
	(i) definite (<i>the soldiers, the empire</i>)
	(ii) demonstrative (<i>this title, these countries</i>)
C. Compare	reference by virtue of comparison with another discourse entity (<i>other, previous, different, same, etc.</i>)

lived in rural places<Present>. These people<PresumeNOM> worked the lands<PresumeNOM>. They<PresumePRO> lived ...

In analysing non-native student data, we found errors in the selection of signals; in some instances, new participants were encoded through choices from the language system, which suggested that they had already been introduced, and, in other instances, participants known to the reader were encoded as new. We analysed these cases as MISS (i.e. miscues), as in Excerpt 5, a not-so-successful composition written at the beginning of a first year (writer aged 12–12) on the origins of ancient civilizations:

Excerpt 5 (less successful identification)

They<MISS> start in that places<MISS> because the population grow.

In this case, while the reader, the teacher who set the task, can recover the reference and interpret ‘they’ and ‘that places’, a composition in academic register would not be expected to open with presuming referents.

Within the IDENTIFICATION system, Martin and Rose (2003) include another system, that of TRACKING, which displays the options available to a writer to indicate to the reader the source of the textual reference in the case of presuming and comparative reference. Participants in the text may be known for a variety of reasons, and their referents traceable in a number of ways. Choices of effective options within the TRACKING system explain both cohesion (the signal) and coherence (its fit with the situational context). Broadly, we can distinguish two types of references:

- those that refer to the surrounding context (homophoric and exophoric reference); and
- those that refer to previous mentions within the co-text itself (endophoric reference).

Homophoric references include those communal understandings in the context of culture, expressions referring to aspects of the world always available to readers, such as *the sun, the moon, the earth*. Exophoric reference refers to the specific context of situation,

as a participant can be encoded as recoverable from the current discourse situation that exists outside the text, using deictics such as *I, you, we, here, and now*.

In addition to these types of reference, our analysis distinguished another type of presuming reference, topic, to cover cases of shared knowledge of the topic under study. In the content classes we are focusing on, students write for their teachers, and so can assume knowledge of the history topics shared by the community formed by class and teacher. This type of reference, then, is not a part of general communal understandings, but rather understandings that had been built up through the readings and class discussions for the course. An example of this kind of reference can be seen in the first few lines of a student's essay:

Excerpt 6

1. I'm going to talk about Egypt and Mesopotamia:
2. In ancient Egypt the King called Pharaoh.
3. In Mesopotamia called King.

In this excerpt, the student introduces the notion of countries having a leader or monarch in the second line as *the King*, which suggests a recoverable discourse referent. This might be interpreted as homophoric reference (communal understanding); however, *the king* does not function in the same way as such unique entities as *the sun* or *the moon* in this particular classroom context, where the students are learning about the different types of monarchs in the period studied. With this category, we wanted to capture reference to the shared content knowledge being co-constructed.

Returning to Martin and Rose's (2003) systems, within the text itself, endophoric reference includes anaphoric reference, which is achieved through the use of pronouns or nominal groups to refer to participants previously and explicitly mentioned. Cataphoric reference points to a discourse participant that appears later in the text, as does *it* in *It is a good idea to carry an umbrella*. Another type of forward-looking reference, in which the referent is defined within the same nominal group, as in the case of *the reason* in *the reason for her reticence*, is known as esphora. These linguists include a further type of endophoric reference with an explicitly mentioned referent but involving inference, as in, for example, *the blade* in: *He picked up the knife. The blade was sharp*. (For a critique of inferencing, see Moore, 2008; Moore suggests that all references can be explained through semantic relations such as superordination and composition, which provides a more delicate network of choices of presuming reference.) Table 3 summarizes the TRACKING system, drawing on examples from our data; we include the tags used in our application of the system to the analysis.

We now present Excerpt 4 again (re-numbered as Excerpt 4a), with fuller tagging that includes the type of tracking that the writer uses in the case of presuming/comparative reference:

Excerpt 4a (successful identification and tracking)

Feudalism in Europe<Present> was a very important historic moment<Present>. Europe<PresumeNOM:DIR> grew and new countries<Present> were found. Many

Table 3 Tracking system

Tag	Description	Example
<i>Homophoric/exophoric/topic reference:</i>		
COMM	communal homophora	they started to move to <u>the north</u> .
CON	situational context (exophora)	<u>We</u> have pencil and pen.
TOP	topic knowledge based on what the students are studying in the course	In ancient Egypt, <u>the king</u> called Pharaoh
<i>Endophoric reference:</i>		
DIR	co-text: direct (preceding text)	and <u>its</u> Queen said 'no' to <u>his</u> proposition of marriage ['its' referring to England and 'his' to Philip II]
INF	co-text: inferred (bridging)	During the war it was a terrible situation. <u>The soldiers</u> ...
CAT	co-text: cataphora (following)	<u>It</u> happened that Britain had a huge navy.
ESP	co-text: esphora (same group)	This cities grow because of <u>the</u> increases of technology

Note: COMM = communal-homophora

people<Present> lived in rural places<Present>. These people<PresumeNOM:DIR> worked the lands<PresumeNOM:INF>. They<PresumePRO:DIR> lived ...

Using this system, the analysis of the students' texts was carried out for each nominal group. The analysts first decided whether the nominal group was functioning in the IDENTIFICATION system (Table 2) as introducing or tracking a participant. In the case of introducing, the nominal group was tagged as Present, and no further analysis done. If tracking, then the nominal group was labeled either Presume or Compare. Cases of faulty reference – as Piriyaasilpa (2009) terms it – were tagged as MISS and, again, not analysed further. The successful cases of presuming and comparative reference were then tagged for their reference type according to the TRACKING system, as explained in Table 3.

2 The nominal group: Types of modification

In order to capture the extent to which the students approximate register-appropriate nominal complexity, we chose to analyse the nominal group and its modification using de Haan's (1994) simple and clear taxonomy of nominal group modification, which has been used in other studies of writing in EFL by a similar population (Martín-Úriz et al., 2005). Table 4 shows the nominal group types, with examples from our data.

Applying these two taxonomies, then, the corpus of written texts was analysed for these important features of academic register: the ability to introduce and track participants coherently, along with the ability to exploit the flexibility and expandability of the

Table 4 Nominal group types (based on de Haan, 1994, p. 86)

Tag	Explanation	Examples
PRO	Pronoun	I, you, he, she, it, we, they, them
1	(DET) HEAD	cities; all the people; the war; their wage
2	(DET) PRE-MOD (+) HEAD	women's wage; a good monarch
3	(DET) HEAD POST-MOD (+)	lands near the river; an event such as the assassination of the Austro-Hungarian Archduke by a Serbian
4	(DET) PRE-MOD (+) HEAD POST-MOD (+)	a passenger ship with 100 American passengers on board; new technology that could kill a lot of people
COMP	Compound nominal group	more different classrooms and more subjects than in those times; a great power centered on a king, a very big hierarchical society, and a great artistic development
PN	Proper Noun	France; Germany; Philip II; the Treaty of Versailles
CL	Clause as participant	what time it was; how the countries bought or sold profits

nominal group as found in mature academic writing. We now turn to the results of the analysis.

V Development in CLIL students' written discourse: Results of the analysis

We first look at the types of identification that appeared in the students' texts over the four years. Figure 1, below, shows the distribution of these systems: introduction of new participants (presenting), mentioning already known participants (presuming) and comparison of discourse entities. The figure also shows the frequency of miscues (errors in the selection of signals, with new participants signaled as known, and vice versa). We present the results for each feature by year. Numbers in brackets beside each year refer to the total number of nominal groups in the texts collected that year. The percentages are based on the number of each of the IDENTIFICATION types in relation to the year totals.

The results show a slight drop in the nominal groups used for presenting and, especially, an increase in the use of presuming in the last two years. This indicates that the students are progressively introducing fewer participants, while providing more information about them. Text construction is then moving away from a simple listing of topics, a horizontal method of development, to greater depth of treatment of a topic. The figure also shows very limited use of comparison of discourse entities, which remains fairly unchanged throughout the four years, although the curriculum encouraged students to reflect on historical periods in relation to the present. The students also tended to use nominal groups other than pronouns for presuming reference (pronouns are not included on this graph, but are in Figure 3), thus turning to more sophisticated referring

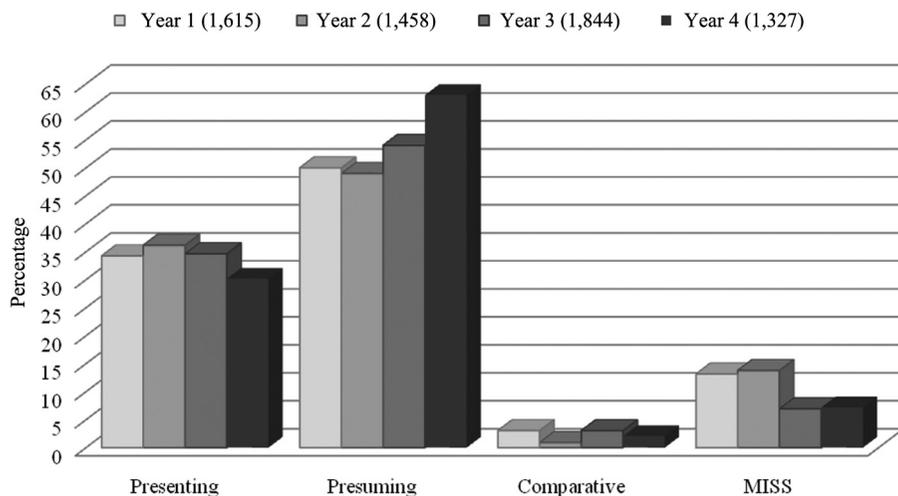


Figure 1 Identification types

devices, rather than relying on function words. Regarding miscues, the data show some improvement in the last two years, as illustrated in Excerpts 7a and 7b, written by the same student to begin his compositions in first and fourth years:

Excerpt 7a (first year, age 12–13)

They (MISS) were polyteistics [sic], they (MISS) live near rivers to had arid lands.

Excerpt 7b (fourth year, age 15–16)

World War One started because of the assesination [sic] of archduke Franz Ferdinan [sic] mainly ... During the war England made a blockade ...

Excerpt 7a shows the use of the personal pronoun ‘they’ referring to a participant that has not been introduced. However, in the fourth year, the same student uses appropriate introduction of participants into the text (*World War One, a blockade*) and tracking (*the war*). All in all, then, the data show development in the students’ identification systems throughout the four years of secondary school, when participating in the same type of writing task on different topics.

Figure 2 below presents the students’ choices within the TRACKING system, that is, the way in which participants are related to the rest of the discourse or to the external context. The number beside the year indicates the total number of tracking types included in the essays, which is lower than the total number of nominal groups, because presenting reference has no subsequent tracking type connected with it. The percentages are based on the number of the individual tracking types in relation to the total number of nominal groups involved in tracking.

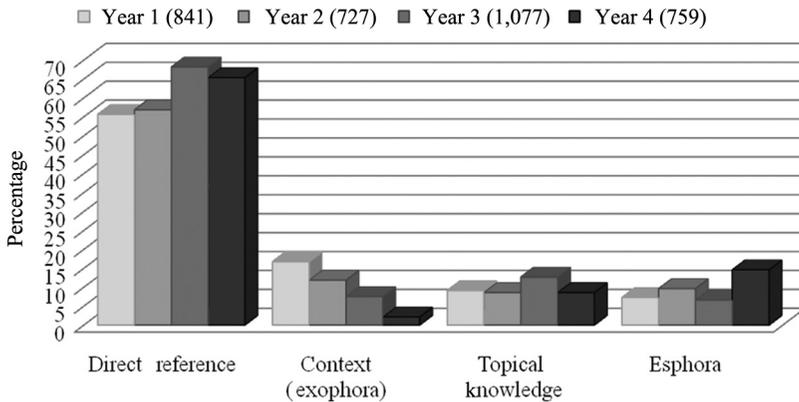


Figure 2 Tracking types

Only the categories with some presence in the data appear in the figure; inference, common knowledge and cataphoric reference are not included as their counts were very low; thus the percentages do not add up to 100 in each year. The figure, interestingly, shows that direct reference increases in the last two years, indicating that there is more textual cohesion. At the same time, exophora, in which the referent is recoverable from the context of situation, decreases. The students' use of exophora was usually reference to self, or to bring another (*you*) dialogically into the text. Decrease in this feature, then, would seem to indicate development towards more impersonal register. Excerpt 8 shows the beginning of a composition from two different students, the early text including reference to self, the later one focusing on the topic.

Excerpt 8a (first year, aged 12–13)

My idea of Mesopotamia and Egypt is that the people of there don't liked to be own and they became into civilizations and empires

Excerpt 8b (fourth year, aged 15–16)

The first world war broke out because the archiduct [sic] Ferdinand, the heir of the Austria-hungary [sic] empire, was killed and this caused the war.

Figure 2 also shows an increasing use of esphora in the fourth year. In this option, the referent is defined within the same nominal group, by means of post-modification. We will comment on this in relation to Figure 3, which shows the distribution of the nominal group types over the four years.

Figure 3 shows a strong dependence on pronouns and type 1 nominal groups in the first two years, which drops in years three and four. In year three, we find more pre-modification, while the fourth year texts increase somewhat their use of post-modification. Very few examples of type 4, with pre-and post-modification, were found in the data. The trend to greater use of post-modification can be linked to esphora, in which

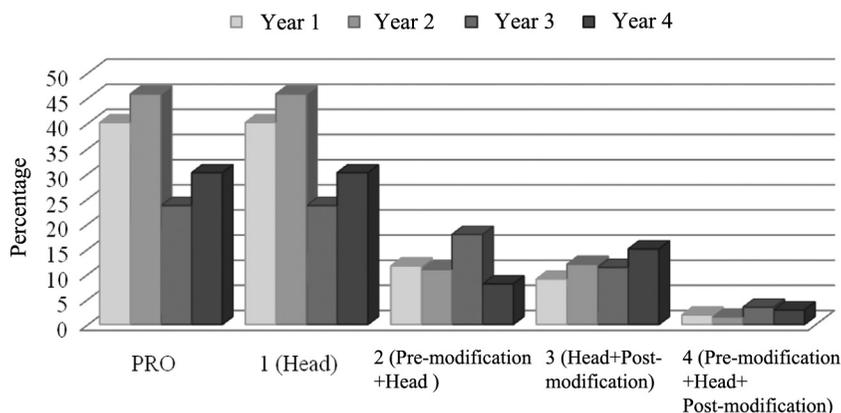


Figure 3 Nominal group type (PRO and types 1–4)

participants are identified within the same nominal group (Martin & Rose, 2003, p.161). Indeed, these young writers often omit information that would help the reader track the participant, as for example with *the houses* in Excerpt 9, below, where this is the first time in the text that houses are mentioned:

Excerpt 9

Also there were small land owners, they worked they lands. The houses were small, normaly [sic] of one room and a shed.

Had the student specified through esphora *The houses of these land owners* (or even *Their houses*, which would locate the referent via presuming reference), the text would have been more successful. Use of esphora would also solve the frequent introduction of *the people* into the texts, without specifying which people (*the people in Mesopotamia*, for example). In fact, there is a slight increase of esphora by post-modification throughout the four years. Excerpt 10 is from the second year (age 13–14):

Excerpt 10

The obligations and rights of the peasants in feudal system were worked [sic] in the fields.

This example shows the recursive use of post-modifying prepositional phrases, which become slightly more frequent in the data.

VI Discussion and conclusions

The longitudinal analysis of the CLIL students' writing reported in this study suggests that there is some development towards the academic register required for successful writing in the disciplines at school in the area of textual coherence. This can be seen in the

drop in miscues when students introduce and track participants, as well as in an increase in textual cohesion via direct reference to other elements in the text and a decrease in exophoric reference. The slightly higher frequency of esphora in tracking participants can be also considered a sign of development towards written academic register. This development indicates that, even without any focus on these text-creating resources, when CLIL students are given the opportunity to write short compositions on their subjects, they show that they are increasingly able to make choices in the foreign language that create more cohesive and coherent texts. We would argue then that Swain's (1995) output hypothesis also applies to discourse features of second language development.

As regards the development of the nominal group, the reduction in dependence on pronouns and unmodified nouns after year two is balanced by slight increases in the different types of modification including a small increase of pre- and post-modified nominal groups in the third and fourth years. This shows writing developing in the same direction as that of Christie's (2002, 2010) early secondary school pupils writing in L1, who, at age 12, were producing fairly simple nominal groups, although later, usually around the age of 14 or 15, they began using nominalization of processes and nominal groups including more defining relative clauses and prepositional phrases, features that are beginning to appear in this corpus of foreign language texts.

The writing task designed in our study, which was applied in the same way once a year over the four years of junior secondary education in CLIL classes, revealed some development in the features analysed. This development could be explained by these students' accumulated exposure to English, as well as by their cognitive maturity, or the demands of the task. At the same time, despite improvements in control of reference and some development in nominal group complexity, these students have been found to have more problems than their L1 counterparts in use of other features of the language of history, like abstractions (Llinares & Whittaker, 2010). Nevertheless, if some development took place without any work on textual coherence or nominal group building, we would expect an explicit focus on the features of academic written discourse and their functions to produce a much greater change. This has been shown in different studies by Ryshina-Pankova (e.g. 2006) and Byrnes (e.g. 2009) in which students writing in German as a foreign language, who were following a register and genre-based syllabus, were found to use more nominalizations and to increase the number of lexical items in nominal groups after relatively few hours of instruction. In the same way, explicit focus on language could improve students' use of identification systems, with awareness of the English system of determiners raised by working with text rather than taught out of context. The model we have applied here allows such explicit foci on language as a meaning-making resource, one that can easily be integrated into classes where the main objective is the learning of content.

Finally, we would like to emphasize the possible effect on the students' writing of the design and sequencing of tasks. The prompt was based on content studied in the previous weeks and recycled during small-group and whole-class oral activities a few days before writing. The role of talk as preparation for composing text has been defended by other researchers (Weissberg, 2006; Lyster, 2007). This oral work would have helped our learners create a stable knowledge base on which to draw during the writing of the text,

releasing attention for other parts of the complex and demanding task of formulating text in a foreign language (Manchón et al., 2009). At the same time, control of the conditions of writing makes these texts really representative of the students' meaning-making ability at this stage. The tasks supported the students by scaffolding content, but pushed them by demanding the construction of written text. We feel that specific work on coherence and register in writing, together with sequencing of tasks, are important methodological challenges for teachers of CLIL and other CBLT approaches.

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