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Assessing Content and Language Integrated Learning (CLIL) in the French-speaking Community of Belgium

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ASSESSING CONTENT AND LANGUAGE INTEGRATED LEARNING (CLIL) IN FRENCH-SPEAKING BELGIUM: LINGUISTIC, COGNITIVE, AND EDUCATIONAL PERSPECTIVES

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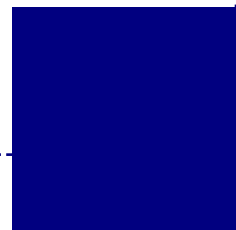
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ASSESSING CONTENT AND LANGUAGE INTEGRATED LEARNING (CLIL) IN FRENCH-SPEAKING BELGIUM: LINGUISTIC, COGNITIVE AND EDUCATIONAL PERSPECTIVES

Philippe Hilgsmann, Luk Van Mensel, Benoît Galand, Laurence Mettwie,
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In times of globalization, policies increasingly promote multilingualism as a strong social and economic asset. One way to foster multilingualism in education is Content and Language Integrated Learning (CLIL), a didactic method in which school subjects are taught in a different target language than the mainstream school language. In the French-speaking Community of Belgium, schools have been allowed to provide CLIL education in Dutch, English or German since 1998. To this day, however, we only have an incomplete and fragmented view on how CLIL differs from non-CLIL education and on how it impacts second/foreign language acquisition. The aim of this contribution is threefold: (a) to discuss the particularities of CLIL education in French-speaking Belgium, (b) to give an overview of the research conducted on CLIL education in French-speaking Belgium, and (c) to briefly present the goals of a large-scale longitudinal and interdisciplinary study currently being conducted at Université catholique de Louvain and Université de Namur. This interdisciplinary study aims to make a strong empirical and theoretical contribution to both the public debate and the ongoing international scientific discussions on multilingualism in general and CLIL in particular.

Évaluer l'enseignement en immersion en Belgique francophone : approches linguistique, cognitive et éducative.

En ces temps de mondialisation, les politiques favorisent de plus en plus le multilinguisme en tant que fort atout social et économique. L'enseignement d'une matière par l'intégration d'une langue étrangère (EMILE), une méthode didactique dans laquelle les matières scolaires sont enseignées dans une langue cible différente de celle de la langue de l'enseignement général – couramment appelée enseignement en immersion, est vu comme un moyen de promouvoir le multilinguisme dans l'enseignement. En Communauté française de Belgique, les écoles ont été autorisées à dispenser l'EMILE en néerlandais, en anglais ou en allemand depuis 1998. A ce jour, nous ne disposons cependant que d'une vision fragmentaire et incomplète de l'impact de l'EMILE sur l'acquisition d'une langue seconde/étrangère. Le but de cette contribution est triple: a) esquisser les particularités de l'EMILE en Belgique francophone; b) donner un aperçu des recherches menées sur l'EMILE en Belgique francophone; et c) présenter les objectifs d'une étude longitudinale et interdisciplinaire menée par l'Université catholique de Louvain et à l'Université de Namur. Cette étude interdisciplinaire vise à apporter une contribution empirique et théorique importante au débat public et aux discussions scientifiques internationales en cours sur le multilinguisme en général et l'enseignement en immersion en particulier.

1. Introduction

In times of globalization, policies increasingly promote multilingualism as an important social and economic asset. One way to foster multilingualism in education is Content and Language Integrated Learning (CLIL), a didactic method in which school subjects are taught in a different target language than the mainstream school language. In the French-speaking Community of Belgium (*Communauté française de Belgique*, henceforth CfB), schools have been allowed to provide CLIL education in Dutch, English or German since 1998. To this day, however, we only have an incomplete and fragmented

view on how CLIL differs from non-CLIL education and on how it impacts second/foreign language acquisition. The aim of this contribution is threefold: (a) to discuss the particularities of CLIL education in French-speaking Belgium, (b) to give an overview of the research conducted on CLIL education in the CfB, and (c) to briefly present the goals of a large-scale longitudinal and interdisciplinary study currently being conducted at the Université catholique de Louvain and the Université de Namur. In the next section we sketch out a brief description of the main tenets and goals of CLIL education.

2. Content and Language Integrated Learning

CLIL refers to *Content and Language Integrated Learning*¹, i.e. the teaching of some curricular subjects, such as history, geography, science, and mathematics, through the medium of a new target language (*TL*). In other words, ‘the non-language subject is not taught in a foreign language but with and through a foreign language’ (Eurydice 2006: 8). In his survey of language promotion by European supranational institutions, Baetens Beardsmore (2009: 208) points out that:

[t]here are at least thirty-three different designations for some type of “bilingual education”, which may be the term used in some countries but which tends

to be avoided at the European level, given that in certain countries it has a negative connotation (sic). The term “immersion”, though regularly used in some countries, is not favored either, given that this tends to be associated with the Canadian efforts, whereas many of the European initiatives either predated the immersion phenomena or were developed independently and with very different goals and methodologies.

In sum, language immersion first came to prominence in Canada in the 1960’s (Cummins & Hornberger 2008), while CLIL has become a popular and widespread practice (and term) in Europe, advocated by

¹ The acronym used in French is EMILE: *Enseignement de Matières par l’Intégration d’une Langue Étrangère*.

the European Union (Coyle, Hood & Marsh 2010).²

CLIL programs not only vary from one country/region to another (see for example Baetens Beardsmore 1993, Eurydice 2006, Marsh & Wolff 2007, Tedick e.a. 2011), but also within the same region (e.g. for French-speaking Belgium, see below). Due to space constraints, we cannot detail all the forms CLIL can take but comprehensive overviews can be found in Aronin & Singleton 2012, Baetens Beardsmore 1993, Baker 2011, Coyle e.a. 2010, Cummins & Hornberger 2008, Dalton Puffer e.a. 2010, Garcia 2009, Marsh & Wolff 2007, Ruiz de Zarobe e.a. 2011.

The main educational aim of CLIL is the fostering of bi-/multilingualism, i.e. the development of learners' communicative competence or language proficiency in the new target language. Next to this educational goal, the learning of a new target language is also encouraged for various societal reasons (see Garcia 2009, Baker 2011): to preserve a language that is slowly disappearing (for example the teaching of Basque to Spanish-speaking Basque children in the Basque Autonomous Region), to assimilate minority language groups into mainstream society (for example the teaching of Dutch as a second language in the Netherlands), to obtain increased harmony between language

groups (for example French-speaking learners of English and English-speaking learners of French in Canada), to enhance economic and employment opportunities. These reasons include extra-curricular goals (e.g. reading books in another language outside the classroom) and learner-centred goals (the learner's mental development as individual) (Cook 2002). Furthermore, recent studies have also shown that CLIL 'is an effective means of facilitating primary school students' second language acquisition without undermining their competence in their first language' (Cheng 2012: 379; see also Braun & Vergallo 2010 and Van de Craen e.a. 2010).

Recently published surveys (Admiraal e.a. 2006, Dalton Puffer 2011, Lasagabaster 2008, Lorenzo e.a. 2005, Ruiz de Zarobe 2008, 2010, Zydati 2007) have confirmed that CLIL learners outperform non-CLIL learners as far as target language test scores are concerned. Despite the very abundant literature on CLIL (see for example Aronin & Singleton 2012, Baetens Beardsmore 1993, Baker 2011, Coyle e.a. 2010, Cummins & Hornberger 2008, Dalton Puffer e.a. 2010, Garcia 2009, Marsh & Wolff 2007, Ruiz de Zarobe e.a. 2011), it nonetheless remains largely unclear how much, in what respect and thanks to which (internal and external) processes/factors CLIL students are better than traditional learners (cf. Dalton Puffer 2011). As stated by Dalton

² For an overview of the similarities and differences between language immersion and CLIL, see e.g. Lasagabaster & Sierra (2010: 369-373), Baker (2011), Garcia (2009: 111-136).

Puffer (2008: 139): 'CLIL is still far from being a consolidated and fully articulated educational model [...] A great deal more needs to be done, for instance, in order to consolidate the theoretical underpinnings of CLIL and create a conceptual framework that is both coherent and applicable to different local conditions' (see also Ruiz de Zarobe e.a. 2011, Van de Craen e.a. 2007a, 2010). In recent years, voices are also beginning to rise downplaying the conclusions drawn from CLIL research (see Bruton 2011, Ruiz de Zarobe 2011, Seikkula-Leino 2007). To this day, we only have an incomplete and fragmented view on whether and/or how CLIL differs from traditional second language education and

limited empirical research has thus far been conducted to evaluate CLIL effectiveness in relation to learners' linguistic achievement, their cognitive development and the teaching and learning processes with regard to teacher education (see Cheng 2012, Coyle 2007, Coyle e.a. 2010). Indeed, as De Graaff e.a. (2007: 605) states, 'little attention is paid to the pedagogic repertoire of CLIL teachers and how this contributes to the pupils' target language proficiency'.

As contextual elements play a crucial role when analyzing CLIL programs and their outcomes, we will now focus on the implementation of CLIL in French-speaking Belgium.

3. CLIL in French-speaking Belgium

Although Belgium can be considered a multilingual country on a societal and governmental level, comprising four official linguistic regions (the Dutch-speaking region, the French-speaking region, the bilingual region of Brussels-Capital and the German-speaking region, see *The Belgian Constitution*. Article 4), education is still largely set up as monolingual by each of the three "language community" governments, with languages traditionally being taught in foreign language classes. In recent decades, however, the growing perception of the importance of language skills on the job market (Mettewie & Van Mensel 2009) alongside the discontent with

'traditional' types of language education (see e.g. Ginsburgh & Weber 2007) have led to an increased number of educational stakeholders to call for bilingual education, resulting in the organization of CLIL-type bilingual education programs. As can be drawn from the overview in Table 1, Dutch-medium education only recently adopted a policy allowing for CLIL education, and only in secondary education³. The reasons for the reluctance in implementing such programs are mainly political and ideological in nature (Bollen & Baten 2010). An exception to this reluctance can be found in Dutch-medium education in Brussels, where a limited number of

¹ A maximum of 20% of the curriculum (not including the foreign language class) may be taught in the target language (French, English or German); CLIL subjects must be taught in Dutch as well (see onderwijs.vlaanderen.be).

schools have been participating in the STIMOB-project (Stimulerend meertalig onderwijs in Brussel), which was set up in 2001 to offer CLIL-type immersion (Dutch / French) to the linguistically highly diverse pupil population (see e.g. Van de Craen e.a. 2007b).

Table 1. Implementation of CLIL in different parts of Belgium

Part of Belgium		Official CLIL since	# CLIL-programs: Primary / secondary		
French-speaking	Wallonia + Brussels	1998	191	100	(1)
Dutch-speaking	Brussels (STIMOB)	2001	10	2	(2)
	Flanders	2014	/	60	(3)

- (1) Statistics for school year 2015-2016 (see *enseignement.be*)
 (2) Statistics for school year 2013-2014 (provided by *Scholengroep Brussel*)
 (3) Statistics for school year 2016-2017 (see *onderwijs.vlaanderen.be*)

The French-speaking community of Belgium, responsible for French-medium education in Brussels and Wallonia, has allowed bilingual education programs since 1998.⁴ The compulsory legal framework for this was scaffolded in the *Décret relatif à l'enseignement en immersion linguistique*⁵ in 2007 and has been regularly amended (2003, 2008, 2009, 2010 and 2011). The decree stipulates that schools can offer a CLIL program (often labelled 'immersion') from kindergarten onwards, under certain organizational and pedagogical conditions.⁶ These include (see *enseignement.be*):

- a) Schools (direction or organizing power) have to submit a proposal to the Ministry of Education of the CfB.
- b) Upon acceptance, the CLIL project should explicitly be mentioned as being part of the School Project ('projet d'établissement').
- c) No official selection procedure is allowed; pupils should be enrolled according to the chronological order of enrollment.⁷
- d) Normally, the authorization from the CfB is valid for three years, and can then be extended upon request.

⁴ See http://www.galilex.cfwb.be/document/pdf/22229_018.pdf (accessed 3 January 2017)

⁵ See http://www.galilex.cfwb.be/document/pdf/32365_003.pdf (accessed 3 January 2017)

⁶ Note that CLIL can be organized for all types of education (general, technical, vocational, artistic).

⁷ This is different from the situation in other countries, e.g. Germany (Rumlich 2016) or The Netherlands (Maljers 2007).

- e) Subjects in the target language are preferentially taught by a native speaker or by someone with a natively like level in the target language. In order to be allowed to teach in a CLIL track, teachers have to fulfill three requirements: they need to be in possession of a pedagogical degree, they need to have an advanced knowledge of the target language, and they need to have a 'functional' knowledge of French.

However, provided these conditions are met, schools are in fact relatively free in deciding which CLIL program they wish to provide, and this has led to a wide range of CLIL-formulas throughout the CfB. These may differ with respect to (see *enseignement.be*):

- a) The target language. Schools can offer a CLIL program in Dutch, English or German. An exception to this rule applies to the schools situated in the officially Dutch-French bilingual Region of Brussels, as well as those in a few communities along the language border (Comines-Warneton, Mouscron, Flobecq, and Enghien), where only Dutch is allowed as the target language.⁸ Furthermore, schools are allowed to offer up to two CLIL language tracks, but a pupil can only attend one CLIL program.
- b) The age of onset.
Early CLIL: 3rd year kindergarten, 1st year primary, 3rd year primary,
Late CLIL: 1st year secondary, or 3rd year secondary.

- c) The proportion of the curriculum provided in the target language. The number of weekly hours that the school may provide in the target language varies from 25% to 75% of the curriculum.
- a. Primary : between 8 and 21 hours per week (including the foreign language class),
- b. Secondary : between 8 and 13 hours per week (including the foreign language class).
- d) The subjects that are taught in the target language: with the exception of religion or ethics and the French language class, all subjects may be taught in the target language.
- e) The choice of the language for initial literacy instruction.
- f) Other curricular differences that are subject to the authority of the organizing body of the schools.

There are obvious advantages to the flexibility afforded by the official educational bodies. Schools can for instance easily adapt to local needs and demands from parents and other stakeholders, such as the implementation of a German CLIL program near the border with Germany or a Dutch CLIL program near Flanders or the Netherlands. They can equally adjust their program according to the availability of teachers that are adequately trained to teach both language and subject. On the downside, however, support from the Ministry of Education to address the

⁸ From Year 3 in secondary education onwards, the third language (English) may also be offered in the Brussels Capital Region.

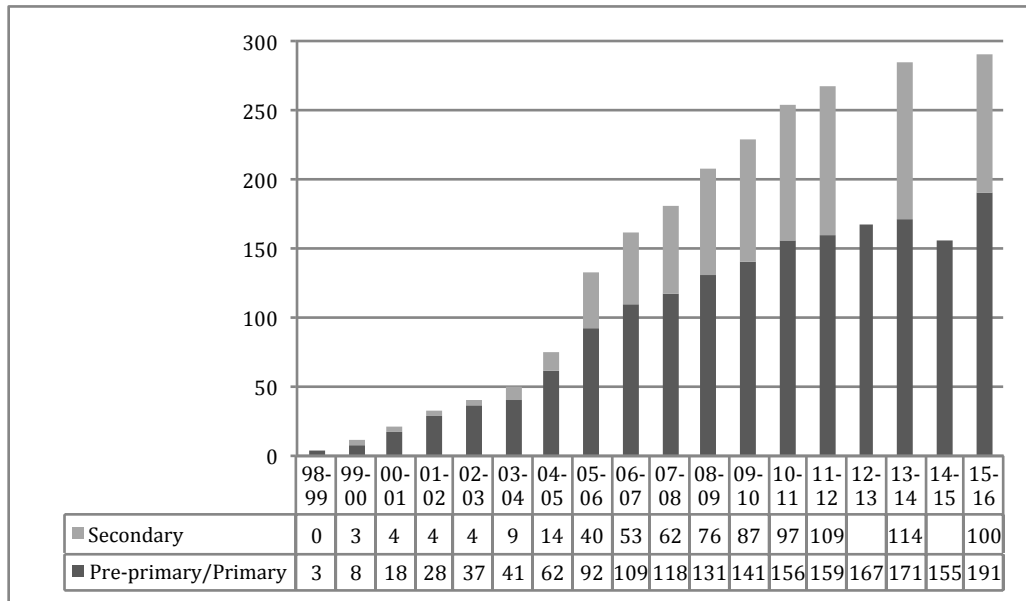
numerous challenges these schools have to cope with is limited. Specific teacher training, for instance, was until very recently non-existent.⁹ In the absence of any official guidelines for immersion teaching in the CfB, schools and teachers have worked with academics to compile their own pedagogical toolkits ('CLIL/EMILE Digest', Bya & Chohey-Pacquet 2005). Furthermore, teachers regret the paucity of adequate didactic materials available (Vandeputte 2011). Finally, many researchers attest to the organizational and logistical challenges that schools face when introducing a CLIL track in terms of classrooms and timetables, as well as regards finding (or substituting) adequate

teachers (Blondin & Straeten 2002; Bouillon & Descamps 2011; Buyl & Housen 2014; Chohey-Pacquet 2007, 2008).

The number of schools offering a CLIL program and pupils attending these programs have been steadily increasing since 1998 (see Figure 1). In 2015-2016, a total of 191 primary schools and 100 secondary schools offered a CLIL-program (see *enseignement.be*) to more than 32,000 pupils (figure for school year 2013-2014, see Chohey-Pacquet 2015). The proportion of CLIL pupils within the total pupil population of the CfB is around 6% for primary schools and 3.9% for secondary schools.

⁹ Since 2014, the Université catholique de Louvain has offered the possibility to obtain an 'immersion teaching certificate' (*Certificat didactique de l'enseignement en immersion*). See <https://www.uclouvain.be/469605.html> (accessed 30 November 2016). The Université de Mons offers a similar program (*Certificat d'Université de spécialisation en méthodologie de l'immersion linguistique*). See https://portail.umons.ac.be/FR/universite/admin/aff_academiques/formationcontinue/formation_par_domaine/langues_lettres/Pages/CU_special_methologie_immersion_linguistique.aspx (accessed 15 December 2016).

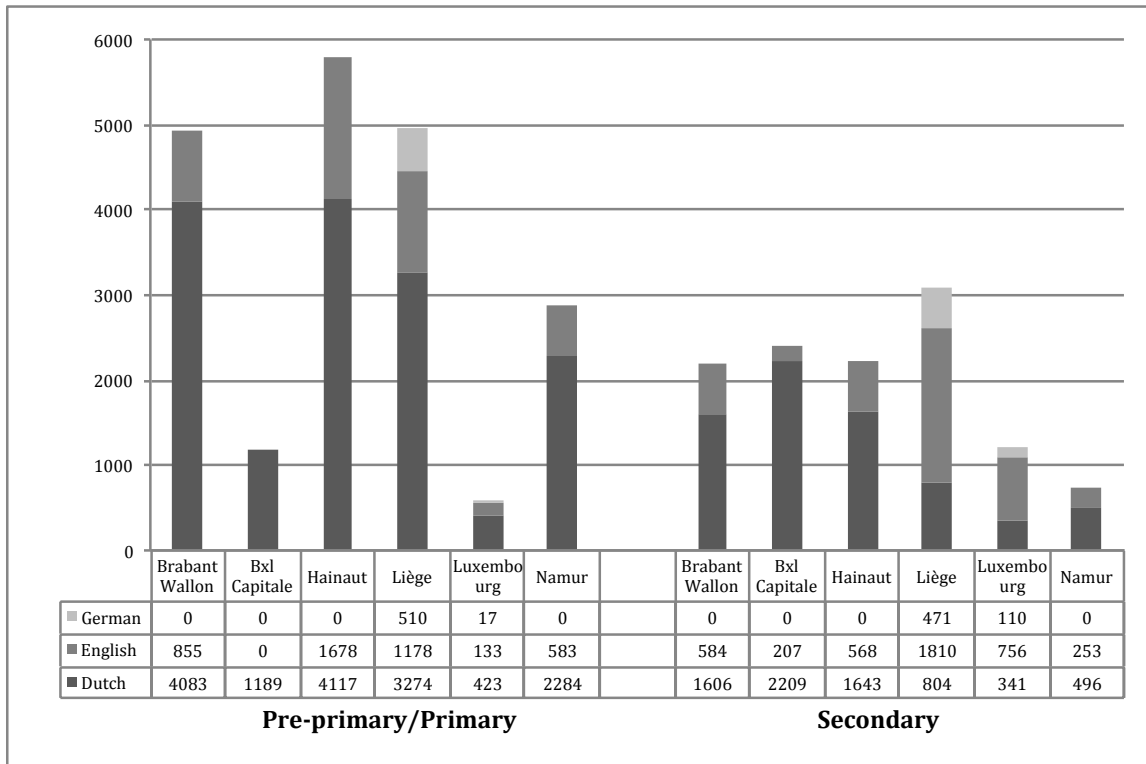
Figure 1. Evolution of number of schools providing a CLIL program in the CfB (our calculation, based on various documents from *enseignement.be*, no figures available for secondary 2012-2013/2014-2015)



As shown in Figure 2, the majority of pupils enrolled in CLIL schools follow a Dutch language track. CLIL in German is almost exclusively provided in the province of Liège, near the German border. CLIL in

the Brussels Capital Region is, as is to be expected (cf. the above-mentioned legal framework), almost exclusively provided in Dutch.

Figure 2. Number of pupils enrolled in CLIL programs in the CfB, per province and target language (our calculation, based on various documents from enseignement.be, figures for school year 2013-2014)



4. Research on CLIL in French-speaking Belgium

Although the first CLIL programs were set up almost two decades ago, research on CLIL in schools in the French-speaking Community in Belgium is relatively scarce, and not often published in peer-review journals. In what follows, we list the studies that looked at the topic at hand,¹⁰ ordering them according to their main focus: cognitive aspects, linguistic aspects,

content knowledge, socio-affective aspects, and research on the teachers themselves.

4.1. Cognitive aspects

Nicolay & Poncelet (2013a) looked at the possible effects of CLIL on pupils' cognitive development. They compared two groups of 8-year-old children (n = 53 x 2), one group that had been enrolled in

¹⁰ We are aware of a number of bachelor papers and master theses that were written on a topic related to CLIL in the CfB, but these will not be discussed here.

an English CLIL program for three years; another group in French-medium classes for the same amount of time. The data were collected via tests assessing the pupils' attentional and executive skills. The researchers concluded that the three year CLIL experience produced some of the cognitive benefits associated with early bilingualism, such as alerting, auditory selective attention, divided attention, and mental flexibility. It should be noted, however, that the cross-sectional design of the study does not allow us to verify whether these differences already existed before the CLIL experience or, in contrast, resulted from it, even if both groups were similar in terms of basic cognitive skills (verbal and nonverbal intelligence) at the time of testing.

In a second longitudinal study, Nicolay & Poncelet (2013b) investigated the impact of both phonological processing abilities and attentional and executive skills on the L2 vocabulary acquisition of 61 children enrolled in an English CLIL program. The same children were tested four times over a period of three years (last year kindergarten and first two years of primary school). The findings suggest that phonological short-term memory, speech perception, auditory selective attention and flexibility are important predictors for early L2 vocabulary learning in a CLIL setting.

4.2. Linguistic aspects

Comblain & Rondal (2001) investigated the impact of CLIL on a range of language

competences in children's first language (French). The researchers compared a group of 25 children who attended an English CLIL program and 25 children who were in the French-medium program. The tests, assessing lexical, phonological and morphosyntactic competences, were conducted at the end of kindergarten and at the end of the first year of primary school. The results indicate that the (early) CLIL children had the same lexical development profile as their counterparts. Moreover, the CLIL children's comprehension and production skills with regard to basic L1 structures (e.g. understanding complex phrases and statements) were comparable or even superior to those of the children in the regular French-medium program.

De Man-De Vriendt & De Vriendt (2006) followed a group of primary school children from the first CLIL cohort that started in 1998 all through primary school until 2005 (Dutch CLIL; initial sample $n = 23$, final sample = 18). On the basis of a range of language tasks (reading and listening comprehension, written and oral production, grammar tests), they argue that the pupils show high competence in their L2. This study did not include a comparison with a control group, however. The same children were tested for their L1 skills (Braun, De Man-De Vriendt & De Vriendt 2006), which appeared to be situated around the mean of the norms for their age group.

Braun (2007) presents the results of a study comparing four groups of children (all in Year 4 primary) from different schools: a

CLIL group (English or Dutch; n = 74), a 'late immersion' group (n = 13), a control group (n = 40), and a 'project' control group (which follows an enhanced ITC or sports program; n = 30). The goal of this study was to assess the children's reading comprehension in the L1 (French). The children were provided with a range of metalinguistic tests, as well as reading comprehension tests (involving both contextualized and non-contextualized texts). Some contextual data were also gathered by means of a parent questionnaire. It appears that when taking into account the contextual variables, the CLIL group outperformed the other pupils on most of the tasks, particularly the reading comprehension tasks that required divergent thinking and metalinguistic knowledge. Moreover, the 'late immersion' group obtained better results than the two control groups on some tasks. According to the author, these differences can be explained by the enhanced metalinguistic (metamorphological and metasyntactic) competences of the CLIL children as well as their greater capacity in divergent thinking.

In a series of publications (Lecocq e.a. 2007a, 2007b, 2009; a number of intermediate research rapports can be found on *enseignement.be*), a team from the Université Libre de Bruxelles presents the results from a longitudinal study with a group of children throughout their primary school trajectory. Two Dutch CLIL groups, a 'high intensity' group (75% of the

curriculum in the target language, initial literacy instruction in Dutch) and a 'low intensity' group (50% of the curriculum in the target language, initial literacy instruction in French), were compared with two control groups, a monolingual Dutch and a monolingual French group. Both L1 and L2 competences were assessed, and the number of children in the initial sample for each of the groups was 35, 30, 20, and 17 pupils, respectively. Over the years, the children were submitted to a range of tests: productive and receptive vocabulary tests, reading assignments, word and pseudo-word read-alouds, grammar exercises, and writing tasks. Overall, the results indicate similar levels of competence in the L1 among the CLIL pupils and their counterparts in the French-medium track. With regard to the target language, the high intensity CLIL group achieved mostly superior results to the low intensity group, and for some tasks, similar results to the Dutch control group.¹¹ According to the researchers, this last finding can probably be explained by the fact that the children from the high intensity CLIL group started learning how to write in the target language, Dutch.

Braun & Vergallo (2010) looked at the L1 writing (spelling) and reading comprehension skills of pupils who had been attending a Dutch CLIL track for eight years (n = 20) and compared the results with those of a group of non-CLIL counterparts

¹¹ Note that no comparisons were made with the French control group, since these pupils only started learning their L2 (Dutch or English) from Year 5 of primary school onwards.

from the same school (n = 21). All pupils were in Year 2 of secondary school at the time of testing. The researchers found no statistically significant differences between the groups, and therefore conclude that there is no negative influence of Dutch on both spelling skills and reading comprehension in the L1 (French).

Research conducted by Rasier *e.a.* (2014) indicates that positive results can be obtained regarding the acquisition of intonation patterns in the target language. The researchers presented a production test of 60 compounds to a group of Dutch CLIL pupils (n = 43) and a control group (n = 40) who were in their last year of secondary school. The CLIL group outperformed the non-CLIL pupils, yet they did not reach a nativelike level.

Castel *e.a.* (2015) investigated the acquisition of spoken language skills, and more in particular the formulation of requests in the target language (Dutch). They found that the performances of a group of Dutch CLIL learners (n = 24, last year of secondary school, enrolled in CLIL for at least six years) were very similar to those of a group of non-CLIL learners of Dutch (n = 24, Ma. university students), and were both still far removed from those of a control group of Dutch native speakers (n = 24, Ma. university students). The researchers conclude that the increased target language input in a CLIL program does not appear to enhance more

advanced spoken language skills, such as the pragmatic aspect of making requests.

Bouillon & Descamps (2011) report on the general outcomes of an English CLIL program in two implementations at the same Primary school. The CEB¹² results of the first cohort of CLIL pupils, when compared to the scores from the previous (and last non-CLIL) cohort, indicate no negative influence on the L1, and slightly lower scores for maths or sciences. Furthermore, according to the authors the pupils' productive proficiency in the target language is high, particularly with respect to fluency. However, no indication is given of how this is measured and no control group was used.

Buyl & Housen (2013) present longitudinal data on the L2 English grammar and vocabulary knowledge of 54 pupils in an early immersion school. Data were collected in the third year of preschool, and the first and second year of primary school, and were compared to similar data obtained in seven schools in Germany and one school in Sweden. Overall, the L2 outcomes of early English immersion were comparable to those of the other immersion preschools across Europe.

4.3. Content knowledge

The acquisition of content in CLIL programs in French-speaking Belgium has been under-researched so far. Blondin (2003)

¹² *Certificat d'études de base*. Standard achievement test used in grade 6 of primary school in the CFB.

reports similar mathematical skills of CLIL and non-CLIL pupils in the second, fourth and sixth years of primary school. Babault & Markey (2011) looked at the acquisition of content knowledge through the L2. The sample consisted of 27 5th year primary pupils who had been attending a Dutch CLIL track (50% L2 - 50% L1) since first year primary, and a control group of 19 5th year primary pupils in French-medium track from a school in the same village. All pupils took the same science class: a Dutch class for the CLIL pupils and a French class for the control group. Afterwards, assessment interviews in French were held with all pupils, and another one in Dutch with the CLIL pupils. In terms of general recollection of the topics raised during class, both groups obtained similar results. However, when the pupils were asked to describe a phenomenon related to the content of the class but one they had not directly experienced (i.e., one that necessarily involves linguistic mediation), the control group outperformed the CLIL pupils. The results also indicate that CLIL pupils make intensive use of their L1 knowledge as a resource for knowledge construction in the target language. The authors therefore plead for a better integration of language and content instruction in the curriculum. In the same vein, other scholars have called for a less strict separation of the first and target languages in the classroom (see e.g. García 2009; and for CLIL in the CfB: Beheydt 2005, 2008, 2011, 2014).

Rather than looking at the acquisition of L2 vocabulary as such, Babault & Markey (2016) investigated the link between lexical

units and conceptualization in the context of L2 learning, and they wished to gauge the role of the L1 in the development of pupils' lexico-conceptual resources. The sample for their study consisted of six classes of 5th year primary pupils, all in schools in the same district, with a total of 54 pupils in a Dutch CLIL track (50% L2 - 50% L1, enrolled in CLIL since first year primary), and 50 pupils enrolled in French-medium track. After having pretested the pupils for their initial knowledge of topic-related vocabulary, all groups received a science class on a similar topic (in Dutch for the CLIL pupils, in French for the control group). Subsequently, individual interviews with the pupils were conducted in order to assess their comprehension of some of the key notions presented in class. The authors conclude that the CLIL pupils, despite an initial disadvantage in terms of their knowledge of topic-related vocabulary in the L2 (Dutch), display similar levels of conceptualization abilities as their non-CLIL counterparts.

4.4. Socio-affective aspects

Despite the fact that advantages in terms of socio-affective factors are often mentioned as part and parcel of CLIL education (see e.g. Dalton-Puffer 2008, European Commission 2014), remarkably few studies have looked into these aspects.

Blondin & Straeten (2000, 2002) briefly mention a questionnaire on attitudes towards language learning that was submitted to two groups of CLIL pupils (n = 20, German CLIL, first year primary; n =

24, Dutch CLIL, third year primary). Pupils reported that they were happy to be in a CLIL class, and the majority did not want the teacher to use more French in the classroom, except when explaining difficult topics.

Mettewie & Lorette (2014) discuss research on the learners' attitudes toward the target language and their motivations for learning the L2. Results from a quantitative study (Year 5 secondary school; CLIL n = 70, non-CLIL n = 121) indicate that Dutch CLIL learners (a) have more positive attitudes toward Dutch, (b) have a higher learning motivation to learn the language, and (c) are overall more open toward the 'other' language and language community than their counterparts from the control group. However, the results also reveal even more positive attitudes toward English. In a qualitative follow-up study (see also Lorette & Mettewie 2013), focus group conversations were organized with 45 pupils selected from the same sample. The goal was to discuss the motivations of the pupils for having chosen a CLIL track as well as their experiences. The data show pupils reporting an overall positive experience, which suggests that the sociocultural goals which CLIL programs explicitly proclaim could indeed be attained.

4.5. Teachers

Chohey-Pacquet (2015) investigated the nature and processes of collaboration between CLIL teachers with a view to

the integration of content and language. Her concern was the alleged lack of collaboration between language teachers and content teachers in many CLIL schools in the CfB. Collaboration between teachers is often mentioned in the literature as one of the key conditions for the successful implementation of CLIL, i.e. the provision of a truly integrated approach of language and content. In reality, such collaboration remains a challenge in practice. Chohey-Pacquet conducted 26 semi-directed interviews with secondary school teachers. On the basis of her results, she calls for a (metaphorical) 'integration space', fostering a dialogic process between both content and language teachers that could potentially cultivate pedagogic understandings and would reinforce the effectiveness of the collaboration. Chohey-Pacquet also proposes that more supportive measures should be implemented to improve understanding about the integration of language and content among teachers, head teachers, and pedagogical counselors. In this way, a true integration can be established and harnessed (cf. our earlier comments).

4.6. Discussion

In conclusion, it can safely be argued that research on CLIL in the French-speaking Community in Belgium projects a rather positive image, even if some results are inconsistent. There appears to be no negative effects on the acquisition of the L1 (French)¹³, CLIL pupils' competences in the

¹³ Note that the pupils' final assessment in Year 6 of content matter taught in the L2 still happens solely in French (through Standard Achievement Tests: CEB for primary and CESS for secondary education in the CfB).

L2 seem higher than those of pupils in the French-medium track, although without attaining nativelike levels (particularly in terms of productive skills), and CLIL appears to be positively associated with the pupils' openness toward the other language and its community. However, we can also discern a number of shortcomings among these studies, mainly with regard to a lack of breadth and scope. All studies discussed involve a (very) small group of participants, mostly from one school (and/or one cohort). As mentioned above, schools are given much flexibility regarding the practical implementation of CLIL in the CfB. In order to make general statements about the outcome of CLIL, a larger sample comprising pupils from different schools is required, enabling the researcher to take into account the various contextual and pedagogical factors surrounding CLIL education. Furthermore, many of the studies discussed above solely focus on one specific – often linguistic – aspect of CLIL education, and an integrated approach (as strongly championed by CLIL scholars) is still lacking. Moreover, available studies usually did not include many covariates (e.g. SES, IQ, academic background ...) and have very low control on the equivalent of the samples in CLIL and non-CLIL. Consequently, one can not rule out the hypothesis that observed differences are due to unmeasured initial differences between students attending CLIL and non-CLIL classrooms. But perhaps the most important limitation of many of the studies conducted so far is the use of a cross-sectional study design to compare

CLIL and non-CLIL pupils. Whereas such an approach obviously provides us with valuable information on potential differences between both groups at the time of testing, the cross-sectional design precludes any strong inferences on the impact of the CLIL experience as such, i.e. we cannot verify whether these differences can be ascribed to the CLIL experience (as indirectly or directly suggested by some of the authors mentioned above) or perhaps to other factors. In order to state any claims on this issue, a longitudinal design would be more appropriate as only such designs allow for the analysis of “group progress, individual variation within groups and individual trajectories” (Meunier 2015: 382). Finally, and more generally, the studies conducted until now (with the exception of Chohey-Pacquet 2015) mainly focus on the outcomes of the CLIL programs. What happens within the classroom, for instance, remains largely unknown. This observation aligns with the misgivings voiced by, among others, De Graaff e.a. (2007) and Bruton (2011), with respect to research on CLIL in general (as mentioned earlier).

In order to tackle these shortcomings of research on CLIL in French-speaking Belgium, researchers from the Université catholique de Louvain and the Université de Namur have set up a joint integrated research project (2014-2019). In the next and final section of this paper, we will briefly present the design and the goals of this multidisciplinary and longitudinal study.

5. Research project “Assessing Content and Language Integrated Learning in French-speaking Belgium: an integrated approach” (2014-2019) ¹⁴

On the basis of a large-scale longitudinal study, the research project aims to gain insight into the linguistic, cognitive, socio-affective and educational aspects of CLIL and to understand how the interplay between these perspectives may underlie L2 acquisition processes. The data collected for the project involves French-speaking CLIL and non-CLIL learners (control group) with Dutch or English as a target language, at different times during their final two years of primary and secondary school education. The dominant language studied in CLIL research is English (cf. Dalton-Puffer 2011: 183). This project also includes Dutch in order to shed light on the actual L2 acquisition process in terms of developmental patterns and errors typologies, and to assess the potential impact of attitudinal, motivational and cognitive factors on the learning of the two languages. At the methodological level, a *longitudinal, contrastive and multidisciplinary* perspective is adopted, including the following types of data collection:

- a detailed sociolinguistic and attitudinal questionnaire that is administered to all the pupils, in order to shed light on socio-affective variables, learning trajectories as well as background and contextual information;
- a set of controlled tasks that tests both the linguistic and cognitive dimensions;
- (videotaped) classroom observations that provide materials for the linguistic and educational studies;
- focus-groups that support the socio-affective and educational facets of the project;
- parent and teacher questionnaires that provide background information on the home/classroom context.

The purpose is to build a complementary multi-layered database to be explored for the linguistic, cognitive and educative research lines in order to obtain a more comprehensive view on CLIL. A total of five groups of variables are measured: control, socio-affective, cognitive, instructional, and linguistic variables. We refer to Appendix 1 for more details on these variables. Table 2 provides an overview of the research procedure.

¹⁴ The coordinated research project (ARC 14/19-061) is funded by the *Fédération Wallonie-Bruxelles (CfB)*.

Table 2. Overview procedure CLIL project (UCL-UNamur)

YEAR 1 (2015-2016) 5 th primary / secondary school		YEAR 2 (2016-2017) 6 th primary / secondary school		
T1	T2	T3	T4	T5
Student questionnaires			Student questionnaires	
Corpus data			Corpus data	
Computerized tasks			Computerized tasks	
Parent questionnaires	Teacher questionnaires	Focus groups		
		Classroom observations		Standardized achievement tests (SATs)

More specifically, the research project involves five major research lines (work packages):

- three of these work packages deal with linguistic aspects (productive and receptive language skills; acquisition of nativelike lexical and morpho-syntactic use in the domain of intensification; acquisition of nativelike use in the domain of phraseology);
- one work package investigates and compares the cognitive abilities of the CLIL and non-CLIL pupils;
- one work package studies the various socio-affective conditions related to language learning (in both the CLIL and non-CLIL environments).

Furthermore, we will look at the interaction between the different research lines. At the time of writing, we have collected a first range of data series. For the first data collection, which took place between September and November 2015, data were collected among more than 900 pupils from thirteen primary and nine secondary schools (see Table 3). The participating schools have contrasted profiles, notably in terms of location (all provinces are covered), socio-economic level, CLIL type (early vs. late), and education authority (official education and publicly subsidized schools).

Table 3. *Initial sample CLIL project (UCL-UNamur): number of pupils in year 5 of primary/secondary education (n = 928)*

	CLIL Dutch (1)	CLIL English (2)	Non-CLIL English (3)	Non-CLIL Dutch (4)
Primary	175	103	106	71
Secondary	141	104	114	114

(1) CLIL with Dutch as the target language

(2) CLIL with English as the target language

(3) Non-CLIL with specific foreign languages curricular option in English (4 hours/week)

(4) Non-CLIL with specific foreign languages curricular option in Dutch (4 hours/week)

6. Conclusions

Almost two decades after its first implementation in French-speaking Belgium, the number of schools and pupils involved in CLIL programs continue to steadily increase. Research on CLIL in French-speaking Belgium is however still relatively scarce, mostly focused on (linguistic) outcomes, and, because of the cross-sectional designs often adopted, unable to isolate and assess the real impact of the CLIL experience on the pupils' acquisition of the L2. Such shortcomings are not unique to Belgium but representative of the issues voiced by researchers studying

CLIL internationally, viz. the fact that to this day, we only have an incomplete and fragmented view on how CLIL differs from non-CLIL education and on how it impacts second/foreign language acquisition. The large-scale and multidisciplinary research project presented above aims to fill some of these research gaps and, more generally, to make a strong empirical and theoretical contribution to both the public debate (in French-speaking Belgium) and the ongoing international scientific discussions on multilingualism in general and CLIL in particular.

References

- Admiraal, W., Westhoff, G. & K. de Bot (2006). Evaluation of bilingual secondary education in the Netherlands: Students' language proficiency in English. *Educational Research and Evaluation*, 12, 75–93.
- Aronin, L. & D. Singleton (2012), *Multilingualism*. Amsterdam/Philadelphia: John Benjamins Publishing.
- Babault, S. & M. Markey (2011). Des savoirs disciplinaires bilingues chez les élèves en immersion? In: L. Beheydt & Ph. Hiligsmann (eds.), *Met immersie aan de slag/ Au travail, en immersion*. Louvain-la-Neuve: Presses Universitaires de Louvain, 93-109.
- Babault, S. & M. Markey (2016). Articulation langue 1 - langue 2 dans le répertoire langagier des élèves inscrits en programme immersif : quelles ressources lexicales pour les cours de sciences ? *The Canadian Modern Language Review/La revue canadienne des langues vivantes*, 72(4), 454-479.
- Baetens Beardsmore, H. (2009). Language promotion by European supra-national Institutions. In: O. García, *Bilingual Education in the 21st Century. A Global Perspective*. Chichester: Wiley-Blackwell.
- Baetens Beardsmore, H. (ed.) (1993). *European models of bilingual education*. Clevedon: Multilingual Matters.
- Baker, C. (2011). *Foundations of Bilingual Education and Bilingualism*. Buffalo, N.Y.: Multilingual matters.
- Beheydt, L. (2005). Didactiek voor het immersieonderwijs. In: Ph. Hiligsmann, e.a. (eds.), *Neerlandistiek in Frankrijk en in Franstalig België*. Louvain-la-Neuve: Bruylant-Academia, 13-24.
- Beheydt, L. (2008). Immersie en contrastieve taalkunde. In: Ph. Hiligsmann, e.a. (eds.), *Recente ontwikkelingen in het contrastief taalonderzoek Nederlands-Frans. Verslagen en Mededelingen van de Koninklijke Academie voor Nederlandse Taal- en Letterkunde*, 118, 1, 87-105.
- Beheydt, L. (2011). Immersieonderwijs anno 2010: 'best practices'. In: L. Beheydt & Ph. Hiligsmann (eds.), *Met immersie aan de slag/ Au travail, en immersion*. Louvain-la-Neuve: Presses Universitaires de Louvain, 33-58.
- Beheydt, L. (2014). Immersieonderwijs en contrastieve taalkunde. In: L. Degand, Ph. Hiligsmann, L. Rasier, M. Sergier, S. Vanasten & K. Van Goethem (eds.), *In het teken van identiteit. Taal en cultuur van de Nederlanden*. Louvain-la-Neuve: Presses Universitaires de Louvain, 161-178.
- Blondin, C. (2003). L'immersion linguistique dans l'enseignement fondamental en communauté française de Belgique: l'état de la question. *Journal de l'immersion* 25 (2), 19-31.
- Blondin, C. & M.-H. Straeten (2000). *Généralisation de l'apprentissage d'une langue moderne à l'école primaire. Phase I*. Rapport de recherche non publié. Service de pédagogie expérimentale. Université de Liège.
- Blondin, C. & M.-H. Straeten (2002). A propos d'immersion linguistique dans l'enseignement fondamental: un état de la question. *Le point sur la Recherche en Education*, 25, 3-21.
- Bollen, K. & K. Baten (2010). *Bilingual Education in Flanders: Policy and Press*

- Debate (1999–2006). *The Modern Language Journal* 94 (3), 412–433. doi:10.1111/j.1540-4781.2010.01089.x.
- Bouillon, H. (2014). L'enseignement par immersion linguistique précoce: un enseignement sélectif? In: L. Degand, Ph. Hiligsmann, L. Rasier, M. Sergier, S. Vanasten, K. Van Goethem, *In het teken van identiteit. Taal en cultuur van de Nederlanden*. Louvain-la-Neuve: Presses Universitaires de Louvain. 179-193.
- Bouillon, H. & M. Descamps (2011). L'immersion linguistique par la pratique. Le cas de l'Ecole primaire de Court-Saint-Etienne. In: L. Beheydt & Ph. Hiligsmann (eds.), *Met immersie aan de slag / Au travail, en immersion*. Louvain-la-Neuve: Presses universitaires de Louvain, 9-31.
- Braun, A. (2007). Immersion et compréhension en lecture. In L. Puren & S. Babault (eds.), *L'éducation au-delà des frontières, Apprentissage précoce du néerlandais, apprentissage précoce en néerlandais dans la zone frontalière franco-belge*. Paris: L'Harmattan, 217-257.
- Braun, A. & E. Vergallo (2010). Influences de l'immersion linguistique sur la maîtrise du français. Influence d'une immersion linguistique de huit ans en néerlandais sur la maîtrise du français en orthographe et en compréhension à la lecture. *Education-Formation*, 292, 155-163.
- Braun, A., De Man-De Vriendt, M.-J. & S. De Vriendt (2006). Sept ans après ... *Éducation-Formation*, 275, 4-16.
- Bruton, A. (2011). Is CLIL so beneficial, or just selective? Re-evaluating some of the research. *System* 39, 523-532.
- Buyl, A. & A. Housen (2014). Factors, processes and outcomes of early immersion education in the Francophone Community in Belgium. *International Journal of Bilingual Education and Bilingualism*, 17:2, 178-196, DOI: 10.1080/13670050.2013.866627
- Bya, N. & M. Chohey-Paquet (eds.) (2005). *CLIL/EMILE: Digest préparé par le groupe d'accompagnement de l'immersion linguistique*. Brussels: FESeC.
- Castel, N., Hiligsmann, Ph. & A. L. Leloup (2015). Verzoeken in het Nederlands van Franstalige CLIL- en niet-CLIL-leerlingen: een verkennend onderzoek. In: S. Lestrade, P. de Swart & L. Hogeweg (eds.), *Addenda. Artikelen voor Ad Foolen*. Nijmegen: Radboud Universiteit, 49-68.
- Cheng, L. (2012). English immersion schools in china: Evidence from students and teachers. *Journal of Multilingual and Multicultural Development*, 33(4), 379-391.
- Chohey-Paquet, M. (2007). Belgium (French-Speaking). In: D. Marsh & D. Wolff (eds.), *Diverse Contexts – Converging Goals: CLIL in Europe*. Frankfurt: Peter Lang, 25-32.
- Chohey-Paquet, M. (2008). CLIL in French-Speaking Belgium: Transforming Paradox into Potential. In: C. M. Coonan (ed.), *CLIL e l'Apprendimento delle Lingue. Le Sfide del Nuovo Ambientato di Apprendimento*. Venezia: Libreria Editrice Cafoscarina, 239–250.
- Chohey-Paquet, M. (2015). *Investigating teacher partnerships for CLIL : Developing a model for subject-content and language teacher pedagogic collaboration towards integration*. Unpublished PhD. dissertation, Université de Namur & University of Aberdeen.

- Comblain, A. & J.A. Rondal (2001). *Apprendre les langues. Où, quand, comment ?* Sprimont, Belgique: Mardaga.
- Cook, V.J. (2002). Language teaching methodology and the L2 user perspective. In: V.J. Cook (ed.), *Portraits of the L2 User*. Clevedon: Multilingual Matters, 325-346.
- Coyle, D. (2007). Content and Language Integrated Learning: Towards a Connected Research Agenda for CLIL Pedagogies. *The International Journal of Bilingual Education and Bilingualism* 10(5), 543-562.
- Coyle, D., Hood, P., & D. Marsh (2010). *CLIL: Content and language integrated learning*. Cambridge: Cambridge University Press.
- Cummins, J. & N. Hornberger (eds.) (2008). *Encyclopedia of Language and Education*. Volume 5: Bilingual Education. New York: Springer Science.
- Dalton-Puffer, C. (2007). *Discourse in Content and Language Integrated (CLIL) Classrooms*. Amsterdam: John Benjamins.
- Dalton-Puffer, C. (2008). Outcomes and processes in Content and Language Integrated Learning (CLIL): current research from Europe. In: W. Delanoy & L. Volkmann (eds.), *Future Perspectives for English Language Teaching*. Heidelberg: Carl Winter, 139-157.
- Dalton-Puffer, C. (2011). Content-and-Language Integrated Learning: From Practice to Principles? *Annual Review of Applied Linguistics* 31, 182–204.
- Dalton-Puffer, C., Nikula, T. & U. Smit (eds.) (2010). *Language Use and Language Learning in CLIL Classrooms*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- de Graaff, R., Koopman, G.J., Anikina, Y. & G. Westhoff (2007). An Observation Tool for Effective L2 Pedagogy in Content and Language Integrated Learning (CLIL). *The International Journal of Bilingual Education and Bilingualism* 10(5), 603-624.
- De Man - De Vriendt, M.-J., & S. De Vriendt (2007). L'enseignement de type immersive dans les écoles de la Communauté française de Belgique. In: L. Puren & S. Babault (eds.), *L'éducation au-delà des frontières, Apprentissage précoce du néerlandais, apprentissage précoce en néerlandais dans la zone frontalière franco-belge*. Paris: L'Harmattan, 203-216.
- Eurydice (2006). *Content and language integrated learning (CLIL) at school in Europe*. (Retrieved from <http://bookshop.europa.eu/en/content-and-language-integrated-learning-clil-at-school-in-europe-pbNCX106001/> [1/03/2017])
- García, O. (2009). *Bilingual Education in the 21st Century. A Global Perspective*. Chichester: Wiley-Blackwell.
- Ginsburgh V. & S. Weber (2007). La connaissance des langues en Belgique. *Reflets et perspectives de la vie économique*, 1, 31-43.
- Lasagabaster D. & J.M. Sierra (2010). Immersion and CLIL in English: more differences than similarities. *ELT Journal* 64(4), 367-375.
- Lasagabaster, D. (2008). Foreign language competence in content and language integrated learning. *Open Applied Linguistics Journal*, 1, 31–42.
- Lecocq, K., Kolinsky, R., Goetry, V., Morais, J., Alegria, J., & P. Mousty (2009). Reading

- development in two alphabetic systems differing in orthographic consistency: a longitudinal study of French-speaking children enrolled in a Dutch immersion program. *Psychologica Belgica*, 49(2&3), 111-156.
- Lecocq, K., Mousty, P., Kolinsky, R., Goetry, V., Morais, J. & J. Alegria (2007a). Evaluation de programmes d'immersion en Communauté française: étude longitudinale du développement des habiletés écrites en L1 et L2. In L. Puren & S. Babault (eds.), *L'éducation au-delà des frontières, Apprentissage précoce du néerlandais, apprentissage précoce en néerlandais dans la zone frontalière franco-belge*. Paris: L'Harmattan, 259-293.
- Lecocq, K., Mousty, P., Kolinsky, R., Goetry, V., Morais, J. & J. Alegria (2007b). Évaluation de programmes d'immersion en Communauté française: une étude longitudinale comparative du développement de compétences linguistiques d'enfants francophones immergés en néerlandais. *Recherches en éducation*. URL: http://www.enseignement.be/download.php?do_id=5113&do_check=, (accessed 23 February 2017)
- Lorenzo, F., Casal, S., & P. Moore (2005). *Orientaciones para la elaboración del currículo integrado de las lenguas en los centros bilingües*. Sevilla, Spain: Consejería de Educación (Junta de Andalucía).
- Lorette, P. & L. Mettwie (2013). CLIL in Wallonië: leerlingen leren graag Nederlands. *Levende talen magazine*, 100(7), 26-29.
- Maljers, Anne (2007). The Netherlands. In: A. Maljers, D. Marsh & D. Wolff (eds). *Windows on CLIL. Content and Language Integrated Learning in the European Spotlight*. Graz : European Centre for Modern Languages, 130-137.
- Marsh, D. & D. Wolff (eds.) (2007). *Diverging contexts – Diverging goals. CLIL in Europe*. Frankfurt: Peter Lang.
- Mettwie, L. & L. Van Mensel (2009). Multilingualism at all costs: Language use and language needs in business in Brussels. *Sociolinguistica*, 23, 131-149.
- Mettwie, L. & P. Lorette (2014). Tweetalig onderwijs als Belgische «philtre d'amour». Attitudes van Franstalige CLIL-leerders van het Nederlands. In: L. Degand, Ph. Hilgsmann, L. Rasier, M. Sergier, S. Vanasten & K. Van Goethem (eds.), In *het teken van identiteit. Taal en cultuur van de Nederlanden*. Louvain-la-Neuve: Presses Universitaires de Louvain, 195-201.
- Meunier, F. (2015). Developmental patterns in learner corpora. In: S. Granger, G. Gilquin & F. Meunier (eds.), *The Cambridge Handbook of Learner Corpus Research*. Cambridge: Cambridge University Press, 379-400.
- Nicolay, A.C. & M. Poncelet (2013a). Cognitive advantage in children enrolled in a second-language immersion elementary school program for 3 years. *Bilingualism: Language and Cognition*, 16, 597-607.
- Nicolay, A.C. & M. Poncelet (2013b). Cognitive abilities underlying second-language vocabulary acquisition in an early second-language immersion education context: A longitudinal study. *Journal of Experimental Child Psychology*, 115, 655-671.

- Rasier, L., Bui, A.V., Jouniaux, A. & Ph. Hiligsmann (2014). Klemtoon in het Nederlands van Franstalige immersie- en niet-immersieerlingen. In: L. Degand, P. Hiligsmann, L. Rasier, M. Sergier, S. Vanasten & K. Van Goethem (eds.), *In het teken van identiteit. Taal en cultuur van de Nederlanden*. Louvain-la-Neuve: Presses Universitaires de Louvain, 203-220.
- Ruiz de Zarobe, Y. (2008). CLIL and foreign language learning: A longitudinal study in the Basque country. *International CLIL Research Journal* 1, 60–73.
- Ruiz de Zarobe, Y. (2010). Written production and CLIL: An empirical study. In: C. Dalton-Puffer, T. Nikula, & U. Smit (eds.), *Language use and language learning in CLIL classrooms*. Amsterdam, the Netherlands: John Benjamins, 191–212.
- Ruiz de Zarobe, Y. (2011). Which language competencies benefit from CLIL? An insight into applied linguistics research. In: Y. Ruiz de Zarobe, J. M. Sierra & F.G. del Puerto (eds.), *Content and Foreign Language Integrated Learning. Contributions to Multilingualism in European Contexts*. Bern: Peter Lang, 129-153.
- Ruiz de Zarobe, Y., Sierra, J. M. & F.G. del Puerto (eds.) (2011), *Content and Foreign Language Integrated Learning. Contributions to Multilingualism in European Contexts*. Bern: Peter Lang.
- Rumlich, D. (2016). *Evaluating bilingual education in Germany: CLIL students' general English proficiency, EFL self-concept and interest*. Frankfurt am Main: Lang.
- Seikkula-Leino, J. (2007). CLIL learning: achievement levels and affective factors. *Language and Education* 21 (4), 328-341.
- Tedick, D.J., Christian, D. & T. W. Fortune (2011). *Immersion Education. Practices, Policies, Possibilities*. Bristol/Buffalo/Toronto: Multilingual matters.
- Van de Craen, P., Lochtman, K., Ceuleers, E., Mondt, K. & L. Allain (2007b). An interdisciplinary approach to CLIL learning in primary schools in Brussels. In: C. Dalton-Puffer & U. Smit (eds.), *Empirical Perspectives on CLIL Classroom Discourse*. Frankfurt am Main: Peter Lang, 253-274.
- Van de Craen, P., Mondt, K., Allain, L. & Y. Gao (2007a). Why and How CLIL Works. An Outline for a CLIL Theory. *Vienna English Working Papers* 16(3), 70-78.
- Van de Craen, P., Mondt, K., Ceuleers, E. & E. Migom (2010). EMILE a douze ans. Douze ans d'enseignement immersif en Belgique. Résultats et perspectives. *Synergies-Monde* 7, 127-140.
- Vandeputte, K. (2011). Améliorer l'enseignement en immersion, cela passe aussi par un besoin urgent de matériel didactique. In: L. Beheydt & Ph. Hiligsmann, *Met immersie aan de slag / Au travail, en immersion*. Louvain-la-Neuve: Presses universitaires de Louvain, 111-118.
- Zydati, W. (2007). Deutsch-Englische Zge in Berlin (DEZIBEL). *Eine Evaluation des bilingualen Sachfachunterrichts in Gymnasien: Kontext, Kompetenzen, Konsequenzen*. Frankfurt am Main: Peter Lang.

Appendix 1

Control variables: gender, age, socio-economic background (parental educational level, cultural resources at home, household composition, household income), linguistic background (language(s) most frequently used, number of years in CLIL, optional L2 courses, other linguistic experiences as travels, internships, other language-medium education, etc.), academic background (previous achievement, grade retention, school exclusion, school change, diagnosed learning difficulties).

Socio-affective variables: perceived intergroup relationships and language contacts, attitudes towards target languages and communities, perceived parental attitude toward L2, language learning motivation (including self-efficacy, task value), attitudes towards language learning context.

Cognitive variables: implicit and explicit memory, semantic fluency and picture-naming performance, executive control performance, divided attention, metalinguistic awareness, inhibition, mental shifting and memory updating, results of the external evaluation of learning outcomes.

Instructional variables: frequency and intensity of foreign language input, level of interaction, quantity of pushed output, focus on form in language instruction, emphasis on content in language instruction, characteristics of teachers' language production.

Linguistic variables: general productive and receptive language skills, perception and production of vowel and word stress systems, target-like use of intensifying constructions, phraseological and target-like level of language output, correct generalizations in terms of semantic prosody.

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