Applied Linguistics Advance Access published November 20, 2009
Applied Linguistics: 1–25
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doi:10.1093/applin/amp041

The Effects of Content and Language Integrated Learning in European Education: Key Findings from the Andalusian Bilingual Sections Evaluation Project

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Content and Language Integrated Learning (CLIL) represents an increasingly popular pedagogic approach that has evolved in response to the recognised need for plurilingual competence in Europe. In this article, we present key findings from one of the first large-scale, multidimensional CLIL evaluation projects. We begin by outlining the emergence of European CLIL and by comparing it with other, non-European bilingual education initiatives and then we narrow the scope to Southern Spain, where the research was conducted. We outline the Andalusian Bilingual Sections programme, one of the cornerstones of the government's *Plurilingualism Promotion Plan* (2005), within which the research was conducted. In presenting results, we focus on specific areas that we believe make significant contributions to some of the key concerns in contemporary CLIL research including the linguistic competence of CLIL learners, the question of starting age, the distribution and functionalities of L2 use in CLIL classrooms, and the ways in which CLIL appears to be impacting on the educational system in general.

INTRODUCTION

The idea of teaching subject matters through more than one language is not new; indeed the very foundations of formal education in Europe were multilingual (Lewis 1976; Adams 2003; Braunmüller and Ferraresi 2003). For a variety of reasons, however, pragmatic as well as political, as general education spread to the masses it became increasingly monolingual. In the process bilingual education became a prerogative of the elite (de Mejía 2002). Recently, however, there has been a shift in attitudes towards the notion. The *1+2 principle*, encapsulated in the European Commission's *White Paper on Education and Training* (1995), idealises European citizens as having at least partial competences in two languages other than their first and argues that this goal needs to be incorporated into national curricula. As a consequence, most European states are currently implementing bilingual-type programmes in national education. The abundance of new initiatives

suggests that this represents more than just a quantitative increase of second language provision in schools. The change now is pervasive and the foundations appear to be set for European multilingualism—the social phenomenon of multiple languages in social groups, and European plurilingualism—an ample language repertoire amongst a majority of individuals, which should enable students not only to *savoir* but also to *savoir faire* and *savoir être* in a reconfigured continental environment.

The acronym CLIL, standing for Content and Language Integrated Learning, has been adopted to describe this new European trend. CLIL serves as an umbrella term embracing all scenarios and whatever combination of regional, heritage, minority, immigrant and/or foreign languages they involve; providing for a highly diversified language curriculum. The origins of CLIL can be traced to the German-Franco programmes at the geographical core of Europe which have slowly spread out until now they are to be found in all but a few of the furthest reaches of the continent: Iceland on the far northwest, Portugal on the far southwest, Greece on the far southeast and Latvia on the far northeast (Eurydice 2006). Nonetheless, this extensive presence stands in contrast to the lack of a coherent conceptual framework which may be applied in all contexts. As Dalton-Puffer notes:

> Content and language integrated learning has happened at two curiously distant levels of action: on the level of local grassroots activity on the one hand and on the level of EU policy on the other leaving the intermediate level of national educational policies largely unaccounted for (2008: 139).

The study here presented comes from another of Europe's frontiers, Andalusia—the region which extends across the whole of Southern Spain and which, with some 8 million. inhabitants, may be compared with other European nations. In 2005 the Andalusian government launched the *Plan de Fomento del Plurilingüismo* (the Plurilingualism Promotion Plan; henceforth the Plan).[1] The Plan represents a concerted effort to adhere to European policy and is built around five programmes incorporating seventy-four distinct strategies to be implemented over the period 2005–9. Its ultimate aim is to engender a radical shift from social monolingualism to multilingualism through education, under the European ethos that 'Europe will be multilingual or Europe will not be'. In Andalusia, it should be pointed out, possibilities for extra-mural exposure to and use of educational L2s are scarce and this reinforces the need for multilingualism through schooling.

The overall scope of the initiative clearly distinguishes it from other similar ventures: the entire educational network, primary and secondary, some four thousand schools, is to incorporate up to two new foreign languages as media of instruction, and half of the network is imparting up to 40 per cent of the curriculum in more than one language, taught by teachers recruited on the basis of their language profiles. All in all, both in numbers and extent,

the venture resembles other national initiatives in language change through education such as the shift to bilingual teaching through Chinese and English in Hong Kong (Johnson 1997) or the language reversal move in Singapore (Pakir 1993) among others designed to promote multilingualism through schooling (for other examples, see Ager 2001 or Tollefson 2002).

As a route map for multilingual education the Plan gained institutional recognition through a European Language Label Award, to the satisfaction of local language planners who interpreted this concession as confirmation that the region, which has enjoyed significant subsidies from Europe, had invested wisely. More importantly, the Plan incorporates provision for monitoring and evaluation, which has shed light on a number of different aspects of CLIL implementation in formal settings. We believe that these are pertinent not only as a local example but to CLIL initiatives across the continent. Findings regarding language behaviour and competences in content-based settings; the discourse functions employed by content teachers as opposed to language teachers and native assistants in the programme; the impromptu incorporation of language across the curriculum and the effects on the education system are deemed particularly relevant.

METHODOLOGY AND RESEARCH QUESTIONS

Background: objectives and dimensions

This study is framed within the larger context of CLIL research, a brief review of which here follows. At the outset there was concern regarding the potential effects on content learning yet a series of studies focusing in particular on Mathematics (Jäppinen 2005; Seikkula-Leino 2007; Van de Craen *et al.* 2007) and the Social Sciences (Lamsfuß-Schenk 2002; Stohler 2006; Vollmer 2008) found that CLIL learners were at least matching, and at times even exceeding, monolingual peers. In general, these researchers have concluded that CLIL may hold the potential for positive cognitive gains. In tandem, both cross-section and longitudinal studies into CLIL learners' linguistic competences have suggested that not only do they demonstrate increased L2 proficiencies (Admiraal *et al.* 2006; Rodgers 2006; Ackerl 2007; Mewald 2007; Serra 2007) but that their L1 also appears to benefit from the bilingual experience (Nikolov and Mihaljević Djigunović 2006; Merisuo-Storm 2007). A parallel line of research has looked at bilingual education within the wider social context (see Housen on the European Schools network in Brussels, Italy and the UK (2002); Baetens Beardsmore on a selection of key bilingual case studies across Europe (1993) or Zydatiβ on the Berlin schools network (2007)). Results should also be interpreted alongside data coming from research on North American immersion (Johnson and Swain 1997; Arnau and Artigal 1998; Wesche 2002) and content-based teaching (Mohan 1986; Stryker and Leaver 1997; Snow 1998).

Within this context, this study takes a novel approach to CLIL research as it encompasses both linguistic analysis and the implementation of language planning of supranational language policies. Four key metaconcerns served as the cornerstones for the evaluation project here reported, and might help shape future evaluation projects. The four, further broken down into component corollaries, are:

1. Competence development
   - (i) Linguistic Competences in accordance with the levels of the Common European Framework of Reference (henceforth CEFR) (2001)
   - (ii) Conceptual Competences relating to the successful integration of content and language
   - (iii) Procedural Competences as demonstrated by the use of communicative, cognitive and meta-cognitive strategies
   - (iv) Attitudinal Competences combining both intercultural awareness and motivational factors
2. Curricular organisation
   - (i) The Model of Bilingual Education favoured—CLIL encompasses a wide range of potential models: single or dual, semi or complete immersion, translanguaging, modular thematic blocks and language showers
   - (ii) The Characteristics of the Bilingual Sections—incorporating the content subjects involved, the L2s and L3s most frequently chosen and the composition of the groups: what proportion of the school body is involved; how the groups are formed and whether they represent any particular social classes
   - (iii) The Coordination of Language and Content Integration—both the actors: administrators; language specialists, who may be teachers (L1 as well as L2s and L3s) or native-speaker/expert-user classroom assistants, and content specialists; and the methodologies and materials employed (both for teaching and testing)
3. Classroom praxis
   - (i) L2 use—incorporating both frequency and functions
   - (ii) Typology of Classroom Activities—including considerations relating to the pedagogic approach inherent therein and the classroom interaction patterns implied
   - (iii) Linguistic Approaches—sociolinguistic, discursive, functional, lexico-semantic, structural, etc.
   - (iv) Linguistic Range—academic and sociocultural themes and topics, metalanguage
   - (v) Skill and Competence Development—range, distribution and implementation
   - (vi) Materials—the mix of commercial and adapted materials involved, the use of authentic source materials, the development of material banks

(vii) The Design of Didactic Units—aligning conceptual and linguistic factors, thematic relevance, textual considerations, awareness-raising, etc.
(viii) Assessment Techniques—the objective/subjective mix, use of portfolios, self and collective evaluation, etc.

4. Levels of satisfaction

(i) Perceptions of usefulness and success of diverse aspects of the bilingual programme including the early introduction of an L2 in primary education, the increase in L2 provision via content-integrated learning and the scope of the programme from the perspective of numbers involved.

Participants

Participant selection was organised in line with three major variables: urban/rural; primary/secondary education; and L2 (English, French and German). In the academic year 2007–2008, when the fact-finding component of this research was conducted, there were 403 schools across the region running bilingual sections. A two-stage sampling was employed in data-gathering. In the first stage, a sample of sixty-one institutions was randomly chosen across the eight provinces of the area of the study ensuring that each particular zone was evenly represented through a stratified sample approach. In the second stage, fourth year primary (aged 9–10) and second year secondary (aged 13–14) students were identified as target respondents. This population was selected because, at the time in question, taking all three L2s into account, these were the learners who had had the longest possible experience of the bilingual programme within the Andalusian project.

Control groups were evaluated alongside bilingual sections. This was facilitated by the school organization system itself, as all the participating secondary and most of the primary schools involve parallel bilingual and mainstream (monolingual) peer group streams. A few of the (smaller) primary schools using English as an L2 had implemented institution-wide programmes, however, and so the total number of English bilingual section learners outnumbered that of the control groups. As French and German projects, which were set up experimentally prior to the publication of the Plan, involve whole schools rather than bilingual sections within otherwise monolingual institutions, it was only possible to include Control groups for English L2.

It should be pointed out at this stage that one of the ways in which the Andalusian project differs from many of its European counterparts is that admission to bilingual sections is open to everyone—there is no pre-testing or screening. When mooted, the idea of testing for admission to bilingual sections was roundly rejected on the grounds of potential elitism. In practical terms, petitions frequently outnumber places and random selection systems are employed. The formation of bilingual section groups is monitored and approved in the Community School Council, a joint parent-teacher-student

Table 1: Number of questionnaires analysed

	Learners				Teachers	Coordinators	Parents
	English	French	German	Total	Total	Total	Total
Primary	389	221	83	693	155	32	531
Secondary	373	201	62	636	243	29	441
TOTAL	762	422	145	1329	398	61	972

Table 2: Breakdown of linguistic evaluation: student numbers

	Linguistic evaluation				
	English		French	German	Total
	Control	Bilingual			Bilingual
Primary	145	380	221	83	684
Secondary	303	374	202	60	636
TOTAL	448	754	423	143	1320

body. Bilingual sections are, therefore, essentially egalitarian (although the possibility of corollaries between social class and parental choice cannot be ignored).

The organisation of classroom groups is also worth noting. In order to minimise the possibility of in-school schisms, legislation was enacted which obliged schools to preserve original classroom groups for everything but the three content subjects taught in the L2 (the choice of subjects varies, depending on teacher profiles). During bilingual section classes the students regroup into temporary bilingual and monolingual streams. This means that learners experience a wider variety of classmates.

Tables 1 and 2 show the final sample size and distribution (for more detailed information on the sample selection and data-gathering, see Casal and Moore 2009).

Instruments

In line with the objectives and scope of the evaluation, the desired degree of accuracy, the proposed timescale and the need to optimise financial resources, a variety of data collection methods were used:

— A set of categorical questionnaires was elaborated and administered to the teaching body, CLIL learners and their parents. These focused on

metaconcerns 2, 3 and 4 above: curricular organization, classroom praxis and levels of satisfaction.

— At each institution, the Bilingual programme coordinators were recorded in a structured interview designed to facilitate a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis. A SWOT analysis is applied in the assessment of complex strategic situations through the analysis of internal (strengths and weaknesses) and external (opportunities and threats) factors. It can serve as an interpretative filter to reduce the information to a selection of key issues relating to project implementation.

— A series of diagnostic tests was employed to assess language competences amongst bilingual and control learners. These tests were skills-based and conjointly designed by native speakers of the three L2s, each of whom is also an external examiner for an ALTE (Association of Language Testers of Europe) member organisation from her particular country. In essence the tests for the three different L2s were adaptations of a single model, elaborated in accordance with descriptors from the CEFR at A1 (primary) and A2 (secondary) levels in combination with national curricula. The tests incorporated a variety of text types (letters, articles, signs, etc.) with diverse functional goals (describing, classifying, informing, giving instructions, etc.) and featuring typical content-related skills such as numeracy and orientation (map-reading) in accordance with the developmental levels of the learners.

Data collection and analysis

The nine-member research team comprised linguists, native-speaker assessors, interviewers and a statistician. After initial piloting and assessor benchmarking, data collection was conducted over a three-month period in the Spring of 2008. In the first instance, teacher, language assistant and parent questionnaires and parental letters of consent for audio-visual recording were sent to all participating schools. A paired team of one assessor and one interviewer then visited each of the schools. Together, they supervised the linguistic assessment and the learner questionnaires in classroom time. At primary level each activity took thirty minutes; at secondary level the linguistic assessment took one hour and the completion of questionnaires thirty minutes. Then, while the interviewer conducted the SWOT analysis with the coordinator, the assessor interviewed a random sub-sample of learners, in pairs, in order to evaluate their speaking skills. The team also collected the previously completed questionnaires. The Plan stipulates that institutions containing bilingual sections must participate in monitoring projects and questionnaire return was high.

The statistical analyses presented in this article are based on the main descriptive figures provided by the questionnaires, alongside the results obtained on the tests. Descriptive statistics were used throughout the data analysis in a number of different ways. First, descriptive statistics were important in data cleaning, ensuring the number of valid cases for each variable and

assuring that the 'N' differs slightly between variables. Secondly, descriptive analysis provides a panoramic view of the situation under study. Given the fact that questionnaire data were mainly categorical, frequency analysis was more appropriate for variable types, as this avoided the loss of information which might have resulted from collapsing it into categories. *T*-tests were used to compare means arising from the diagnostic test results.

Taking the above into consideration, we believe that this research meets the four absolute prerequisites for reliability which Cummins stipulated for research focusing on the linguistic assessment of content/immersion learners (1999: 27):

1. Studies must compare students in bilingual programmes to a control group of similar students.
2. The design must ensure that initial differences between treatment and control groups are controlled statistically or through random assignment.
3. Results must be based on standardised test scores.
4. Differences between the scores of treatment and control groups must be determined by means of appropriate statistical tests.

Research questions

This article focuses specifically on those findings which appear to offer significant contributions to key discussions within the contemporary field of European CLIL research. The results here presented address four of the core research questions:

1. *Linguistic outcomes and competence levels*: How do the language competences of CLIL students compare with those of their mainstream peers? If the CLIL learners do show increased gains, to what extent do these differences appear to be the result of language learning based on academic content processing?
2. *Acquisitional routes and individual differences in CLIL programmes*: How do entry points in CLIL programmes affect acquisition? Does CLIL affect conative factors? If so, how?
3. *L2 use in CLIL classrooms*: How can the CLIL language environment be characterised on the basis of different instructional actors' and practitioners' use of the L2 (content teachers, language teachers and native-speaker language assistants)?
4. *CLIL educational effects beyond the L2*: Is CLIL having any visible effect aside from that observed in L2 learning? To what extent is the integrative nature of CLIL impacting on L1 language education? How does a language component integrated in school subjects involve language sensitive organizational patterns in the wider school context?

In short, results from the evaluation project are narrowed down to questions pertaining to the overall results of the linguistic evaluation; the learning

process that may be envisaged from competence results; differences in language use among the teaching body in bilingual programmes and the ways in which CLIL impacts upon the educational process. The following four sections tally with the four research questions.

RESULTS AND DISCUSSION

Linguistic outcomes and competence levels

When the results of the linguistic evaluation had been compiled, it emerged that the CLIL learners were clearly outperforming their mainstream peers. Global average scores were 62.1 per cent for the bilingual groups in comparison with 38 per cent for the control groups. Figure 1 presents the results of the linguistic evaluation component incorporating both primary and secondary samples and all three languages. Given the disparity in numbers (see above), it also includes the results only for English L2 (see below for a breakdown of the results across the three L2s). It should here be pointed out that the evaluation procedure comprised four equally weighted tests, corresponding to the four basic skills, and results are therefore presented as marks out of 100. A mark of 50 was interpreted as A1 (primary)/A2 (secondary); 75 implied A1+/A2+ and full marks signalled that the learner was at the next level (A2/B1). (For example, 20.2% of the English L2 secondary CLIL contingent received 25/25 in the spoken component.) For full numerical, statistically confirmed, results see Tables A1 and A2 in the Appendix.

These results demonstrate a clear competence differential between bilingual and control groups, confirmed as significant in the statistical analysis.

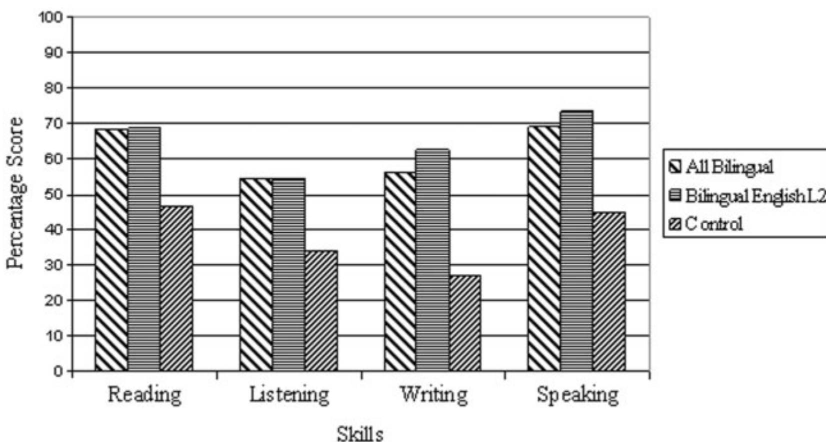

Figure 1: Linguistic evaluation: all bilingual, bilingual English L2 and control

Considering that the only feature which distinguishes these two groups is that the bilingual learners have had one and a half years of CLIL, the difference is striking. As in previous studies (e.g. Burmeister and Daniel 2002) results here demonstrate a non-linear correlation between exposure and competence.

In turn, this gives rise to a need for a closer examination of language competence levels in CLIL settings. It has already been suggested that CLIL engenders a greater lexical range (Dalton-Puffer 2007) and this study suggests that the advantage extends to structural variety and pragmatic efficiency, hence encompassing language growth at lexico-grammatical and discourse levels. To date there has been little comparative research focusing on discrete grammar in bilingual and mainstream language environments although one exception is Järvinen (2005), who explored the acquisition of relativization and found that it appeared to emerge earlier for CLIL students than for their peers in the control groups. Previous research has also demonstrated increased accuracy when production is focused on discourse topics which engage students' attention due to contextual significance, here content-based topics, thereby reflecting the authenticity of the academic domain (Clachar 1999; Butler and Hakuta 2004). This suggests that attention allocation can contribute to the acquisition of lexico-grammar while processing academic content in CLIL-type contexts.

The same proactive engagement with language is in evidence at the level of discourse pragmatics. CLIL learner L2 output features rhetorical moves and discourse patterns such as hedging and tentative language, hypothesising, impersonal structures and metaphorical grammar, typical of academic discourse but not addressed within primary or early secondary L2 syllabi. This suggests a considerable degree of positive transfer in the manipulation and maintenance of cohesion and coherence (Lorenzo and Moore, forthcoming). This is also consistent with studies in bilingual scenarios where academic functions such as formal definitions and picture descriptions have been found to lend themselves to cross-language transfer (Bialystok 2004).

The data and cross-references discussed above may contribute to preliminary steps towards the formation of a theory of learning in CLIL scenarios. Apart from increased exposure it is likely that other factors contribute, chief among them cognitive considerations surrounding cognitive inhibition (Bialystok 2005) and the in-depth processing of language stimuli which appears to result from attention to meaningful input (Lee and VanPatten 2003; Kroll and De Groot 2005; Wong 2005). In CLIL scenarios, this is facilitated through the embedding of target language in contextualised subject matter materials—thereby providing significant semantic scaffolding. A *primacy of meaning principle* operating in real and authentic L2 use would appear to be the norm in formal CLIL settings. This is likely bolstered by conative questions relating to the corollary effects of increases in motivation caused by significant learning environments like CLIL programmes (see below).

If a theory of learning is proposed, the I in CLIL—Integration—demands that the question of a theory of language also be addressed. In light of the degree of competence observed in the results, this paper holds that language theories

which favour the concept of language as semiosis may render a more adequate analysis of language integrated with content. Functional systemic principles examining the cognitive outcomes of content and language integration may be more explanatory of the true nature of the language, or to be more precise of the interlanguage, revealed in the linguistic evaluation (Mohan and Beckett 2003; Mohan and Slater 2005). Functional approaches would claim that what is required is a clear concept of semantics as a layer for language structuring in language education. This belief would appear to apply to CLIL and in turn may serve to strengthen it as a language approach. (See Halliday and Hasan (2006) for a recent discussion of the origins of functional systemics and Mohan and Slater (2005) for a review of controversy in content and language integrated models as opposed to focus on form models.)

Acquisitional routes and individual differences in CLIL programmes

Figure 2 sets out the results for the three L2s of the bilingual evaluation project (and see Table A3 in the Appendix). It shows that the French learners obtained marginally higher scores for receptive skills and the English learners for productive skills. Nonetheless, globally speaking, the average scores for the three languages are comparable within the diagnostic levels of the CEFR.

It should be borne in mind, however, that the English learners have had but one and a half years of CLIL instruction, while the French and German learners have been in bilingual programmes since the beginning of primary education. While it is possible that the English L2 sections have benefited from the insights obtained over the course of the earlier French and German

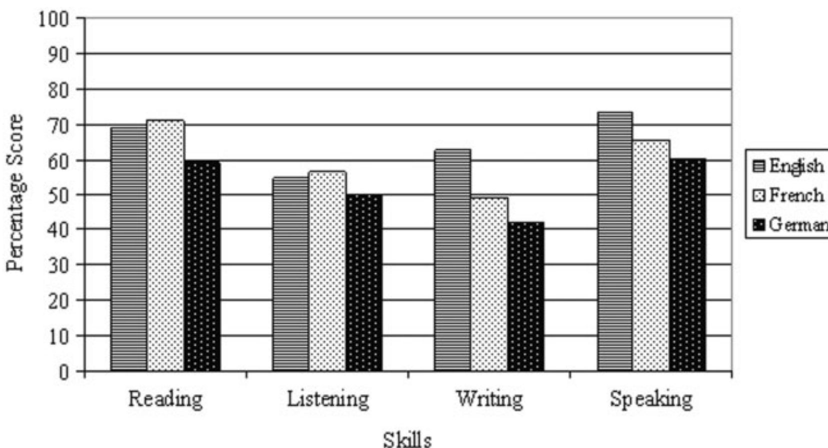

Figure 2: Comparison of average scores in the three L2 (English, French and German)

experimental schemes and/or that global English as a *lingua franca* inspires more productive attitudinal and motivational stances than its continental neighbours (see below), the parity in results also opens the door to the perennial 'age factor' debate.

Logistically speaking, bilingual education can be early, middle or late start and much research has been directed at comparative evaluations (for a useful overview, see Genesee 2004). There has been significant discussion, within psycholinguistic and second language acquisition fields regarding the advantages of early starts (Muñoz 2006, 2008; Nikolov and Mihaljević Djigunović 2006) and promising findings within neurologically-oriented research into cerebral development seem to imply cognitive benefits for early bilingualism (Van de Craen *et al*. 2007). Nonetheless, the results here presented appear to imply that, in CLIL programmes, middle or late introduction can result in competences similar to those obtained in early introduction. It is also worth pointing out here that other studies have found similar advantages for late and low frequency programmes (see Wesche 2002 on the former and Marsh 2002 on the latter). This may be attributable to the fact that increasing cognitive and meta-cognitive abilities and more advanced L1 academic proficiency—as typical of later primary or early secondary learners—can offset the neurologically psycholinguistic advantages of an early start. It also seems logical that the quality and quantity of input/exposure be just as important as age (Muñoz 2008), and CLIL implies both more and more meaningful L2. If subsequent research continues to demonstrate potential for later starts, it is likely to significantly aid the CLIL cause. Decisions regarding start points for bilingual programmes are ultimately framed by budgetary considerations and implementing full CLIL at early primary can be costly. The results here presented suggest that later starts, on condition that they are framed within a sound manipulation of exposure time, can optimise resources.

Results also indicate that CLIL may offer a solution to the long-standing problem of disaffection in foreign, particularly non-world, language learning in European secondary schools (Dörnyei and Csizer 2002). Attainment levels demonstrate that motivational processes in CLIL-type learning differ from mainstream foreign language learning. Research into motivation posits that, in instructed L2 learning, integrativeness—one of the key constructs in goal-oriented behaviour—has little to do with inter-ethnic contact. Nonetheless, the likelihood of exchanges with native speakers is considered key in communicative approaches to foreign language teaching. In CLIL scenarios, however, the identification process between students and the language rests upon the link between language and subject matter, rather than on some nebulous future need. In other words, when French is the language of the history lessons, this supersedes the view of it as the language of the French nation. Satisfaction and engagement levels, as reported in the learner opinion questionnaires, seem to support this interpretation (and see Merisuo-Storm 2007; Seikkula-Leino 2007). What the results obtained seem to imply is that when the learning situation inculcates an identification process between learner and

language, and this results in a revision of learner self-concept, both high motivation levels and successful competence outcomes can be achieved. It follows that a theoretical model of bilinguality for CLIL should be aligned with socio-educational models of bilingual acquisition (Masgoret and Gardner 2003) rather than with models where factors unrelated to the language learning situation (such as ethno-linguistic vitality) are highlighted (for a review of models of bilinguality, see Bourhis 1990).

L2 use in CLIL classrooms

This type of research needs to be wary of a tendency to over-rely on quantitatively formulated evaluations of bilingual education, frequently based on learner test scores, to the detriment of more qualitatively oriented explorations of praxis (Leung 2005). Regarding L2 use, the teacher questionnaires were interested not only in the amount of time spent using the L2 in CLIL classrooms but also in pedagogic questions concerning stages of the lesson and functional questions exploring the type of language employed. This section will briefly review findings relating to each of these concerns.

To begin with, Figure 3 presents the data relating to the quantitative use of the L2 in the classroom distinguishing between primary and secondary and between teachers and language assistants.

Regarding the pedagogic question of staging, the teacher questionnaires focused on six key stages in CLIL teaching: *Introducing the Topic, Conducting Activities, Clarifying and Dealing with Problems, Providing Feedback and Evaluation, Conducting Consolidation and Revision* and *Making Links to Other*

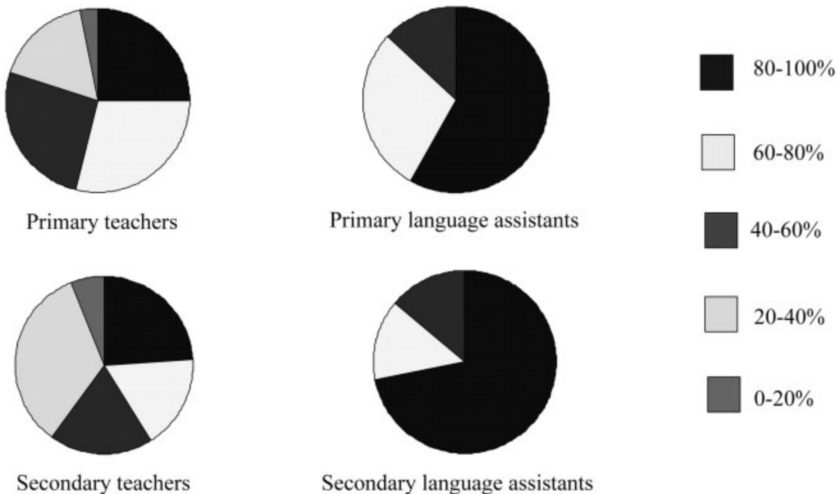

Figure 3: L2 use as percentage of classroom time

Table 3: L2 Use and classroom stages (secondary teachers) (figures in percentages)

	Frequency of L2 use	Topic introduction	During activities	Clarify and deal with problems	Feedback and evaluation	Consolidation and revision	Making links to other areas
Content teachers	Always	16.8	26.5	1.8	15.9	17.7	1.8
	Often	28.3	52.2	17.7	34.5	45.1	30.1
	Sometimes	38.1	20.4	52.2	42.5	32.7	52.2
	Never	15.0	0.0	26.5	5.3	2.7	12.4
L2 teachers	Always	53.7	50.0	7.4	40.7	31.5	20.4
	Often	27.8	42.6	33.3	38.9	50.0	55.6
	Sometimes	11.1	0.0	50.0	11.1	13.0	13.0
	Never	1.9	1.9	3.7	1.9	0.0	0.0
Language assistants	Always	76	73.3	43.3	53.5	60.0	53.5
	Often	13.3	20.0	23.3	20.0	26.7	20.0
	Sometimes	6.7	6.7	23.3	10.0	10.0	20.0
	Never	3.3	0.0	10.0	10.0	0.0	3.3

Areas and respondents were asked to signal the frequency of their L2 use in each case. Table 3 provides a breakdown of results for secondary teachers (figures for primary were comparable).

The results show that content teachers are more likely to employ the L2 in explicitly content-centred teaching: during activities, consolidation and revision and to a lesser degree topic introduction, an aspect which appears to be shared between content and language teachers. In general, language teachers are more likely to use the L2 for feedback and evaluation than their subject specialist counterparts. Overall the stage which is least likely to involve L2 usage is that of clarifying and dealing with problems; even language assistants, who otherwise prefer to maximise target language use, are less likely to use the L2 in this scenario.

The section dealing with functional aspects of use focused on five macro discourse areas: *Formulaic Language*; *Giving Instructions for Activities*; *Telling Anecdotes*; *Error Correction* and *Classroom Management*. Table 4 presents the results for primary teachers (again the figures for secondary were comparable).

As might be expected, all three teacher categories tend to use the L2 when it comes to formulaic language, the language specialists employing the L2 more than 70 per cent of the time. There is also an overall tendency to use the L2 for

Table 4: Functional aspects of L2 use (primary teachers) (figures in percentages)

	Frequency of L2 use	Formulaic language	Giving instructions for activities	Telling anecdotes	Error correction	Classroom management
Content teachers	Always	36.3	19.5	3.5	8.8	12.4
	Often	44.2	51.3	13.3	27.4	36.3
	Sometimes	15.9	29.2	42.5	48.7	44.2
	Never	2.7	0.0	38.9	14.2	7.1
L2 teachers	Always	79.6	50.0	16.7	18.5	40.7
	Often	13.0	40.7	31.5	48.1	40.7
	Sometimes	1.9	0.0	38.9	25.9	11.1
	Never	0.0	1.9	5.6	0.0	1.9
Language assistants	Always	73.3	56.7	50.0	46.7	46.7
	Often	23.3	33.3	16.7	36.7	20.0
	Sometimes	3.3	10.0	20.0	13.3	23.3
	Never	0.0	0.0	10.0	3.3	6.7

classroom management and setting up activities, although the content teachers seem to alternate more frequently. Overall, respondents report that they use the L2 in error correction around half of the time. When it comes to the recounting of anecdotes, however, teachers report less L2 use. Regarding the use of more colloquial language, as implicit in the telling of anecdotes, it is interesting that a Dutch survey into CLIL content teacher attitudes also found that they were least comfortable in this domain (Wilkinson 2005). It has been suggested that native-speaker language specialists engage in more conversational face-to-face exchanges than non-native content teachers (Dalton-Puffer and Nikula 2006) and this would seem to be one of the areas where the language assistants of the Andalusian programme are proving their worth.

Discourse analysis has repeatedly demonstrated the rigid hierarchy typical of classroom discourse and its roles (Sinclair and Coulthard 1975; Markee 2000). CLIL teaching, however, does not conform to the stereotypical educational scenario: while the latter is monolingual, focused on one subject at a time and fronted by a sole teacher, CLIL is bilingual, intertwines subjects and is co-taught. Taking a sociolinguistic stance, and positing CLIL as a

community of practice, the question of teacher classroom roles can be perceived as a triadic symbiosis. Regarding the L1/L2 mix from a more quantitatively inclined perspective, the three instructional actors of the CLIL classroom appear to be providing a range of bilingual experiences: the language assistants come close to providing full immersion, the language teachers represent semi-immersion and the content teachers apply judicious code-switching. In tandem, and further evidenced by results detailing the types of materials and activities that the content and language teachers each use more frequently, it seems that each is dealing with a specific area of language expertise: the language assistants foster conversational style language, the language teachers focus on sentence-level grammar and the content teachers work at the textual level. If this observation holds, it means that CLIL has the potential to provide an extremely rich language learning environment.

CLIL educational effects beyond the L2

There is widespread agreement among bilingual section teaching staff (including L1 teachers and coordinators) that CLIL is beneficial to the educational process in general, an opinion echoed by parents and learners alike. Teacher questionnaires examined this aspect in more detail and demonstrate that the consensus appears to be that some aspects benefit more than others. Tables 5 and 6 provide a more detailed breakdown of attitudes in primary and secondary sectors.

As can be seen above, there is a general consensus that CLIL enhances cohesion within schools. One of the greatest challenges for bilingual education undoubtedly lies in the successful integration of language and content. In order for such a venture to succeed, it is vital that it be operating at both curricular planning (top-down) and classroom praxis (bottom-up) levels. It is therefore significant that the teaching body as a whole considers that interdepartmental cooperation and cohesion is improved in bilingual sections. Coordinator interviews and teacher questionnaires revealed that teacher involvement in CLIL planning is high and characterised by engaged collaboration between content and L2 teachers and language assistants. Aside from European models designed specifically for CLIL (Coyle 1999; Lorenzo 2007) teachers have looked to North American and Australian experiences with minority language learners and sheltered instruction for insights (see for example, Short 1993; Brisk 1998; Swain 2000; Carder 2008).

Turning to the question of content, we find it promising that CLIL appears to be contributing to new forms of language awareness among both content and language teachers. The fact that CLIL involves content and language teachers working together to design and plan integrated lessons has led to a heightened appreciation of the interface between content and language. This appears to be leading content teachers to an acknowledgement both of the ubiquitous nature of language and to the fact that the successful transmission of subject matter content relies heavily on its linguistic selection and grading.

Table 5: The degree and nature of change implied in CLIL on a series of educational aspects—results from primary institutes (figures in percentages)

Educational aspect	Degree of change					Nature of change				
	None	Minimal	Moderate	Significant	No reply	Much worse	Worse	Better	Much better	No reply
Subject area objectives	11	14	42	12	22	1	0	53	8	38
Methodologies	4	8	39	28	20	0	1	49	19	31
Content focus	5	18	45	12	21	0	1	52	14	34
L1 learning	12	21	29	11	28	0	2	45	9	43
L2 learning	1	3	23	48	25	0	0	35	35	29
Content learning	2	8	45	24	20	0	1	51	18	31
Classroom (peer) cohesion	7	25	22	22	25	2	2	41	14	42
Interdepartmental cohesion	3	14	33	30	20	1	2	48	20	29

Table 6: The degree and nature of change implied in CLIL on a series of educational aspects—results from secondary institutes (figures in percentages)

Educational aspect	Degree of change					Nature of change				
	None	Minimal	Moderate	Significant	No reply	Much worse	Worse	Better	Much better	No reply
Subject area objectives	6	24	48	11	11	0	1	66	5	28
Methodologies	1	12	52	26	8	0	1	68	14	16
Content focus	6	24	50	11	10	0	3	62	8	26
L1 learning	6	18	35	15	26	0	1	46	11	41
L2 learning	0	2	25	52	20	0	0	39	36	25
Content learning	3	13	35	29	20	0	4	47	17	32
Classroom (peer) cohesion	2	10	37	39	12	0	4	49	25	21
Interdepartmental cohesion	1	8	41	42	8	0	2	55	28	15

In turn, language teachers are becoming aware that planning for advanced literacy is just as important as basic communicative L2. The gains reported in content focus, content learning and subject area objectives can be attributed to this increase in coherence. Nevertheless, it became apparent that many language teachers are still attempting to align language structures with content in a somewhat erratic manner (no doubt a legacy of their structurally biased professional development) and this area remains fuzzy.

From a language learning perspective, the tables above demonstrate that there is wide consensus regarding the benefits which CLIL implies for L2 learning. When it comes to the L1, however, both coordinator interviews and questionnaires administered to the L1 teachers suggest that CLIL tends to be regarded primarily as a means to improve second (foreign) language development. L1 teachers appear reluctant to participate in integration; some even considered CLIL a competitor to L1 learning, in the belief—nourished by a pedestrian view of bilingualism—that different languages represent opposing forces, growing at each other's expense. Not only does such a view pose risks to the entire education system, partisan attitudes amongst language departments also pose a serious hurdle to successful CLIL implementation, as they represent an overly narrow interpretation of an approach which offers much wider potential.

In the situated context of this research, CLIL implies a new language model and it both coincides with and has contributed to a move away from the *ars gramatica* and towards a genre-based approach to language study—all language study, be it first or subsequent languages—which is not restricted to Andalusia (Bhatia 2004; Martin 2004; Hyland 2008). This conflates with the concept of *Language Across the Curriculum* (LAC) a movement which, although quashed by political opposition in the 1970s when it first emerged (Stubbs 2000), has recently been enjoying something of a renaissance and is currently being actively promoted by European language planning agencies (Vollmer 2006; Beacco and Byram 2007).

CONCLUSION

This article began by outlining the renaissance of European educational bilingualism under the contemporary banner of CLIL (Content and Language Integrated Learning). It then introduced the Andalusian *Plan to Promote Plurilingualism*, within which the research here presented and discussed was conducted. A brief review of European CLIL research helped to position the research project within a wider continental ambit. The four primary meta-concerns which shaped the research—competence development; curricular organisation; classroom praxis and levels of satisfaction—were then outlined and clarified. The section dealing with methodological questions covered participants, instruments and data collection and analysis. The results here presented narrow the focus to four key research questions which we believe are of significant import in current European CLIL-related research: Linguistic

outcomes and competence levels; acquisitional routes and individual differences; L2 use in CLIL classrooms; and educational effects beyond the L2. Findings relating to each of these areas were presented and discussed.

In isolation, several of the questions addressed above offer significant contributions to current Applied Linguistics research: confirmation that CLIL learners show greater gains than their monolingual peers; the evidence regarding incidental learning and positive transfer through content-focused instruction; the fact that later start learners are demonstrating competences comparable with early start learners and the observation that team teaching between content and language specialists is providing for a wider range of discourse input are all relevant in the contemporary arena. In conjunction, however, these results suggest that CLIL is an approach which may hold significant potential for European education planning. Not only does it promote the integration of content and language, CLIL also fosters greater interdepartmental collaboration and conflates with other language development initiatives such as Language Across the Curriculum, the genre-based approach and multi-disciplinary curricula.

In essence CLIL has evolved as, and still remains, a grassroots initiative: *A European solution to a European need*. This has, however, left it bereft of sound supporting theory regarding the nature of language and the nature of its acquisition. On the basis of empirical results, this article has attempted to establish some primary connections between observed CLIL learning outcomes and existing and robust linguistic and learning theories. This should be interpreted as a work-in-progress and future descriptive research will contribute to this task.

As a final point it should be noted that while some of the results obtained in the research here discussed coincide with claims made for CLIL at other latitudes in the continent, it is still too early to infer any generalised outcomes for European CLIL. It is possible that, in the long term, CLIL-type initiatives might contribute to the formulation of a common European ideology of language. Such a paradigm would, of necessity, be rooted in the historical tradition of educational multilingualism in the continent. Where it was once believed that the quintessential cultural endeavour of Europe across time lay in the search for the perfect language (Eco 1995), this quest is now considered utopian and dated; nowadays the goal has become the propagation of plurilingual competences and multicultural values and CLIL may well have a significant contribution to make in this endeavour.

ACKNOWLEDGEMENTS

We would like to thank Leticia Rodríguez for her invaluable help in the statistical analysis of this research. We would also like to thank the three anonymous reviewers for their insightful feedback on our first version of this article.

APPENDIX

Table A1: The overall results of the linguistic evaluation

Skill	Group	Number of cases	Mean	Standard deviation	Significance value *t*-test	95% confidence interval of the mean	
Reading	Bilingual	1320	68.50	17.17			
	Control	448	46.26	22.14	0.00***	19.98	24.49
Listening	Bilingual	1274	54.71	16.37			
	Control	421	33.94	17.77	0.00***	18.93	22.61
Writing	Bilingual	1295	56.24	26.70			
	Control	446	26.82	29.99	0.00***	26.27	32.57
Speaking	Bilingual	348	69.07	20.25			
	Control	119	45.04	20.92	0.00***	19.77	28.29

$^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$.

Table A2: Results of the English L2 evaluation

Skill	Group	Number of cases	Mean	Standard deviation	Significance value *t*-test	95% confidence interval of the mean	
Reading	Bilingual	754	68.90	16.99			
	Control	448	46.26	22.14	0.00***	20.25	25.02
Listening	Bilingual	731	54.59	17.03			
	Control	421	33.94	17.77	0.00***	18.58	22.73
Writing	Bilingual	752	62.71	26.82			
	Control	446	26.82	29.99	0.00***	32.51	39.28
Speaking	Bilingual	186	73.46	21.11			
	Control	119	45.04	20.92	0.00***	23.56	33.28

$^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$.

Table A3: Comparative results for English, French and German bilingual sections in the three L2

Skill	Group	Number of cases	Mean	Standard deviation	Significance value *t*-test	95% confidence interval of the mean	
Reading	English	754	68.90	16.99			
	French	423	70.90	15.93	0.05*	−3.98	−0.02
Listening	English	731	54.59	17.03			
	French	400	56.53	14.45	0.04*	−3.82	−0.06
Writing	English	752	62.71	26.82			
	French	400	49.13	23.43	0.00***	10.59	16.59
Speaking	English	186	73.46	21.11			
	French	120	65.40	16.52	0.00***	3.81	12.31
Reading	English	754	68.90	16.99			
	German	143	59.32	18.68	0.00***	6.48	12.67
Listening	English	731	54.59	17.03			
	German	143	50.20	17.17	0.00**	1.34	7.46
Writing	English	752	62.71	26.82			
	German	143	42.13	24.10	0.00***	15.86	25.32
Speaking	English	186	73.46	21.11			
	German	42	60.10	21.43	0.00***	6.24	20.49
Reading	French	423	70.90	15.93			
	German	143	59.32	18.68	0.00***	8.14	15.01
Listening	French	400	56.53	14.45			
	German	143	50.20	17.17	0.00***	3.17	9.50
Writing	French	400	49.13	23.43			
	German	143	42.13	24.10	0.00**	2.48	11.52
Speaking	French	120	65.40	16.52			
	German	42	60.10	21.43	0.15	−1.97	12.58

*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

NOTES

1 An English version of the Plan is available at: http://www.juntadeandalucia.es/averroes/html/portal/com/bin/contenidos/B/InnovacionEInvestigacion/ProyectosInnovadores/Plurilinguismo/Portada/1182945265640_wysiwyg_planing.pdf

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