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A penetrating Content and Language Integrated Learning (CLIL) *praxis* in Italian mainstream education: Stemming novelties and visions

Εξερεύνηση της εφαρμογής της Ολοκληρωμένης Εκμάθησης Περιεχομένου και Γλώσσας (ΟΕΠΓ/CLIL) στο γενικό Ιταλικό εκπαιδευτικό σύστημα: Απορρέουσες καινοτομίες και οπτικές

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This research purports to highlight Content and Language Integrated Learning (CLIL) effectiveness in Italian mainstream education, as to implementation format, competences and affective factors pinpointed. The crux of the study is closely related to any concurrent local, or global socio-cultural developments reflecting the necessity to conform pedagogical choices to imminent social trends. The research in an upper secondary school in Rome, Italy, demonstrates that learners embrace choices pertinent to their sphere of interest, which are tailor-made and carefully perceived. Italian learners seem to be ready to experience a full CLIL version, as juxtaposed to prevailing national hybrid CLIL forms. The study moreover endorses the view that CLIL is an intriguing learning experience, which offers opportunities for the cultivation of multiple competences by motivating learners and augmenting their volition and sense of self-efficacy creating integral learning personalities.

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Η παρούσα μελέτη αποσκοπεί να ερευνήσει την αποτελεσματικότητα της Ολοκληρωμένης Εκμάθησης Περιεχομένου και Γλώσσας (ΟΕΠΓ/Content and Language Integrated Learning/CLIL) στη δευτεροβάθμια ιταλική εκπαίδευση, ως προς τον τύπο εφαρμογής, τις δεξιότητες και τους απορρέοντες συναισθηματικούς παράγοντες. Η ουσία της μελέτης είναι άρρηκτα συνδεδεμένη με όποιες τοπικές ή παγκόσμιες κοινωνικοπολιτιστικές εξελίξεις αντικατοπτρίζοντας την αναγκαιότητα για συμμόρφωση των παιδαγωγικών επιλογών στις επικείμενες κοινωνικές τάσεις. Η έρευνα σε ένα Ιταλικό σχολείο δευτεροβάθμιας εκπαίδευσης έδειξε πως οι μαθητές υιοθετούν επιλογές σχετικές με τη σφαίρα του ενδιαφέροντός τους, οι οποίες έχουν συλληφθεί και προσαρμοστεί προσεχτικά. Οι Ιταλοί μαθητές δείχνουν έτοιμοι να βιώσουν μία πλήρη εκδοχή του CLIL, σε αντίθεση με την πλειονότητα των εθνικών υβριδίων τύπων του. Η μελέτη ενισχύει την επικρατούσα άποψη

πως το CLIL είναι μία ενδιαφέρουσα μαθησιακή εμπειρία, που προσφέρει ευκαιρίες για την καλλιέργεια πολυπληθών ικανοτήτων παρακινώντας τους μαθητές και αυξάνοντας την μαθησιακή βούληση και το αίσθημα αυτοεκπλήρωσης αυτών επισημαίνοντας την ακέραιη μαθησιακή προσωπικότητα που αναπτύσσεται.

Keywords: structural CLIL, deontic CLIL, epistemic CLIL, affective factors, CLIL competences, Content English Shared Learning (CESL) model, CLIL praxis, interthinking

0. Introduction

CLIL is an epitome of interrelated methodologies and enters the educational arena as a mode to enhance European policy on multilingualism (MT (Mother Tongue+2) by synthesising language competence and content knowledge. The research fosters an *ad hoc* twofold CLIL implementation trajectory (CLIL continuum) moving smoothly from the national symbiotic L1/ L2 CLIL model to the established international CLIL immersion format, aiming to facilitate a more gentle and gradual introduction. The foci of the research evolve around the scrutiny of three seminal features of CLIL implementation that for the purpose of this study are perceived as: structural, deontic and epistemic. Structural CLIL alludes to the implementation format (i.e., CLIL Continuum: pre-CLIL/full CLIL phase), deontic CLIL refers to the development of basic and generic competences, whilst epistemic CLIL pertains to the development of affective factors, such as learners' motivation, empathy, volition and their overall stance towards the CLIL learning practice (CEFR, 2001).

1. Content and Language Integrated Learning (CLIL) as a state-of-the-art approach

1.1. CLIL identity and functional philosophy

CLIL is a “a fusion of subject didactics, which has emerged as education for modern times” (Coyle *et al* 2010:1) approaching thus subject content through the target language and acting as a bridge that colligates learning aspects into a coherent whole, where interdisciplinary element pervades. It is a revolutionary learning approach that brings about beneficial change as being devoid of pseudo-realistic aspects, which learners may potentially face in a traditional foreign language learning locus (Ting, 2011). In this way, learners are granted the opportunity to experiment with foreign language learning in a process of exploring and processing content in authentic situations. During the CLIL process learners activate their content schemata (namely, background knowledge), in order to perceive the nature of subject content that in turn they elaborate and reproduce through an ameliorated L2 competence (Caplen-Spence, 2011). The starting point involves both L1 (first language), as to the content schemata and L2 (target language), as to the language medium. The final objective is to approach content both cognitively and linguistically in L2, which marks the passage from L1 semi- dependence to total independence boosting learner autonomy in a metamorphic process, as shown in Figure 1.1 (Agolli, 2012)

CLIL, despite a versatile identity, is heteroglossic as well (Lorenzo *et al*, 2009). The dominance of English as a CLIL medium is overwhelming and this naturally leads to a new acronym: CEIL (Content-and -English Integrated Learning), embraced by Dalton- Puffer reflecting the identity of CLIL even in this research (2011). English CLIL (CEIL) though, in many cases, has been considered an evidence of Linguistic Imperialism being in sharp

contrast to the notion of multilingual promotion (Dalton-Puffer, 2011). Indicative is the case of Malaysia where English CLIL introduction received a fierce social reaction being deemed a national threat, as it could acquire a hegemonic position (Mehisto *et al*, 2008). The Malaysian case, according to some researchers, mirrors the attitude of cynical Susans and doubting Thomases against this educational innovation (Mehisto *et al*, 2008).

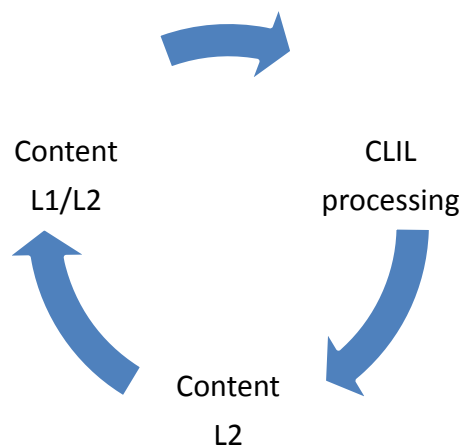


Figure 1.1 CLIL Metamorphic Process

1.2. CLIL as a medium of globalization and cosmopolitanism through international models

Despite the recent booming interest, CLIL is not a new mode of communicating content in a foreign language, as it makes its debut during the Roman Empire that by having conquered a large Greek territory, felt the necessity to provide an educational curriculum in the target language (Coyle *et al*, 2010). The Roman Empire conjures up the actual globalization process that views mobility as a pragmatic openness to diverse lifestyles and detachment from the nation state (Kumaravadivelu, 2011). A society deprived of a multilingual policy would result in being monochromatic in its language use and thought.

CLIL, as a fruit of globalization, is an episteme of Bilingual Education (BE) that evolved in Canada in the 1960s out of the need to teach the other official language (i.e. French) to the Canadian English-speaking majority population (Cummins, 1999; Lasagabaster and Sierra, 2010). Alternatively, Content-Based Instruction (CBI) that “changed the focus from teaching language in isolation to its integration with disciplinary content” in school contexts (Kaufman and Crandall, 2005:11) evolved in the USA. However, an incrementing demand for dual-language programs (i.e., bilingual programs), as compared to CLIL ones, has been recently evidenced as a path towards more promising careers (Crystal, 2012; Short, 2011). The international interest has brought in other acronyms compatible with CLIL, such as: EMILE (Enseignement d'une Matière par l'Intégration d'une Langue Étrangère) in French, or ALID (Apprendimento di Lingua Integrato nella Disciplina) in Italian and AICLE in Spanish (Aprendizaje Integrado de Contenidos y Lenguas Extranjeras) (Eurydice, 2006).

1.3. CLIL conceptual framework

Though proliferating the status of CLIL may be, there is a dearth of grounded methodology, so “combining different methodologies in a *mutualistic entente*¹” is ideal for CLIL contexts

(Llinares and Morton, 2010: 62). CLIL therefore espouses versatile values of EFL (English as a Foreign Language) methodologies blurring their boundaries. It functions on the basis of the 4Cs framework (i.e., Culture, Communication, Content and Cognition) (Coyle *et al* (2010) embedded in a relevant Context, which calls for an enriched framework (i.e., 5Cs).

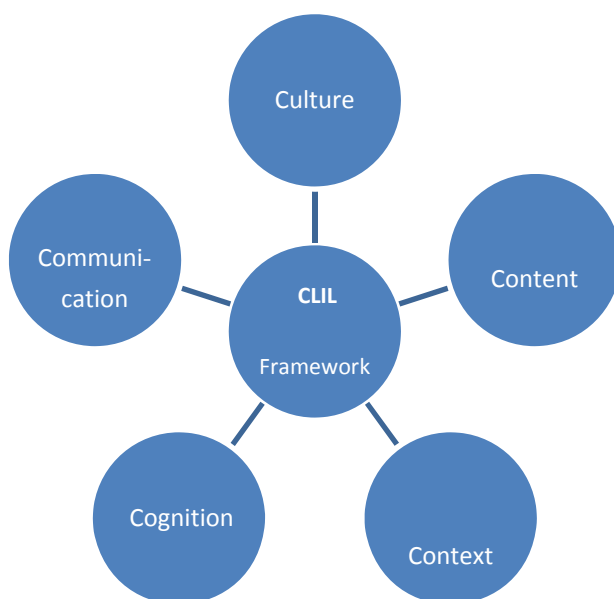


Figure 1.2 CLIL Conceptual Framework

1.3.1. Culture-oriented CLIL

The multicultural and intercultural aspects of CLIL education reside in the Theory of Identity and Second Language Learning that peruses the socially and constructed relationship of learners to the target language (Fay, 2008; Marginson *et al*, 2011). The cultural aspect of CLIL fosters learners' exposure into the target culture by enhancing intercultural competence, which seems to be the most neglected one (15%) in the majority of European ESL educational curricula (Table 1.1). CLIL can therefore act as a dynamic alternative to distil the intercultural aspect of learning process (European Commission, 2012).

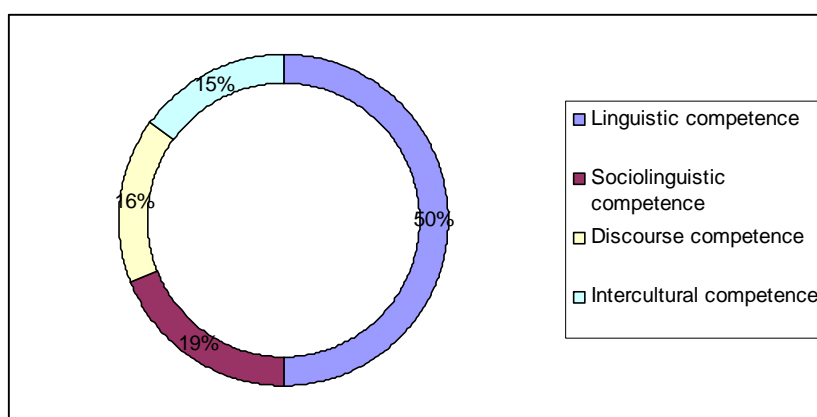


Table 1.1 Integration of ESL Competences in L 2 European Educational curricula (LACE, 2007)

1.3.2. Communication-oriented CLIL

Furthermore, communication is another CLIL variable inculcated into Krashen's Input Hypothesis conceptualizing learning as a feasible acquisition process, solely if the learner is exposed to comprehensible input and experiences positive emotions (Dalton- Puffer, 2011; Hunt, 2011). This is extended through Swain's Output Hypothesis, which stresses that learners can experiment and enrich their linguistic repertoire, only if they proceed into "self-regulated production of utterances that encode learners' intended meanings" (Dalton-Puffer, 2011: 194). This approach implies that learner's initiative and autonomy in experimenting and generating vivid parole in the learning context is of paramount importance. Both theories underscore the role of cohesive learning steps (i.e Input- Process-Output (I-P-O) in the communication spectrum. The linguistic competence and its entailing sub competences (e.g *grammatical competence, phonological competence, semantic competence, lexical competence*) can therefore be developed in CLIL through a process of I-P-O trajectory (CEFR, 2001). The communicative aspect of CLIL encompasses elements from Communicative Language Teaching (CLT) and Task Based Learning (TBL). The transcendence from CLT to TBL is pinpointed by Kumaravadivelu (2006) as a move from *awakening* to *awareness*. Through CLIL procedure it may be extended to *praxis*, as learning experience becomes more bountiful, leading to a transcendental language learning model (Agolli, 2012) (Figure 1.3).

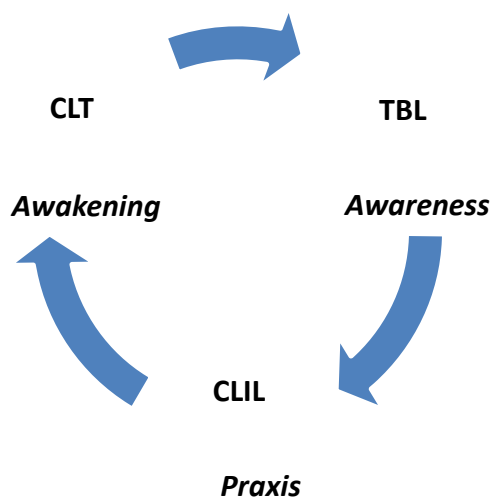


Figure 1.3 CLIL transcendental language learning model

For some researchers though, CLIL does not always successfully elicit communicative competence and relevant skills, as they are conditioned by some myopic pedagogical choices, which thwart in a way an active linguistic involvement of learners leading to a stilted language output (Dalton- Puffer, 2011).

1.3.3. Content - Cognition CLIL nexus

Additionally, cognition and content are interleaved in the CLIL process being slantingly linked to Vygotsky's Zone of Proximal Development (ZPD), accentuating the cognitive processing of language learning suited to each learner's comfort zone (Davies, 2011). CLIL, as an offspring of Bilingual Education (BE), illustrates two types of English proficiency: Basic Interpersonal

Conversational Skills (BICS) that are devoid of cognitive load, as they involve an everyday interaction type and Cognitive Academic Language Proficiency (CALP), which is characterized as context-reduced, as it is mainly traceable in content areas such as maths, science and social studies (Blasco, 2011; Dupuy, 2011). CALP English is reflected even in the *CDC (Construction- Deconstruction- Connectionist) model*² used in teaching science, as put forward by Pang and Ross, which constitutes a part and parcel of this CLIL paradigm (2010).

2. Contextual analysis of Content and Language Integrated Learning (CLIL) implementation

2.1. Socio-linguistic composite

CLIL implementation in Italy and worldwide springs from the necessity to link the microcosm of classroom with the real market world inspired by the Bologna Reform³. The latter has inspired even the recent education reforms of 2008 and 2010 in Italy, which set CLIL as a compulsory curricular subject from 2012-13 in the last three years of *licei linguistici* and from 2013-14 in the final year in all other secondary schools (Eurydice, 2010; MIUR, 2011; Ludbrook, 2011) aiming to promote multilingualism. Linguistic diversity is omnipresent in Italy with many minority languages (e.g. Greek, Albanian, Catalan, German, Croatian, Slovene, French, Sardinian etc) being officially recognized by *Law No 482 –art. 2 15/12/1999*, that has granted the opportunity to promote novel policies focusing on bilingualism in the region of Valle d' Aosta, Friuli Venezia Giulia and in the province of Bolzano (Eurydice, 2006; Langé, 2007; Lucietto, 2010).

2.2. CLIL profile as an educational innovation

CLIL, as a reform model, evolves and progresses in the course of two congruent factors: *education policy making* and *education politics* (Giroux, 2010). *Education policy making*, as an activity based on specialisation and expertise comes into conflict with *education politics*, that represents the activity of citizens- parents, teachers, academics, who set into question the content of any reform (Giroux, 2010). CLIL as a model of educational novelty is amenable to three phases: 1. *Initiation* 2. *Implementation* 3. *Institutionalization* (Fullan, 2001). CLIL in Italy, known even as *insegnamento veicolare (vehicular language)* seems to have been part of the second phase for a roughly 10 year period of implementation without having had a uniform pattern (Clegg, 2007; Marsh, 2002). Recently though the school reform has dictated an orientation towards institutionalization process by commencing with teacher education through blended training courses (MIUR, 2012).

From a cultural point of view, English CLIL enjoys a prestigious status over traditional English language learning and is embraced with enthusiasm, despite the chasm between target language and content area level (Eurydice, 2010; Coonan, 2011). It has become a sort of cult movement taking on many hybrid forms (Clegg, 2007). The lesson is mainly *a team-work CLIL (CLIL in compresenza/ codocenza)*, or teachers acquire split roles within the lesson by co-assessing the learning process and product (Coonan, 2011; Clegg, 2007). There has been though detected an EFL teacher intervention to correct content teacher's inaccuracies distorting in a way the normal sequence of the lesson, so *independent learning (monodocenza)* is considered indispensable (Ludbrook, 2011; Coonan, 2011; MIUR, 2011).

2.3. Embedded CLIL locus

It is vital to tackle the reform of the upper secondary school, known as *secondo ciclo di istruzione* (the second cycle of education), so as to better perceive the situated learning panorama in a *Liceo Scientifico* (Eurydice, 2010). The reform reinforces scientific subjects through a new study branch called *Scienze applicate* (Applied sciences) aiming to nurture life-long skills and competences introducing mandatory CLIL in the fifth grade. The upcoming *de jure* status of CLIL is a further impulse for the school authorities to launch a pilot CLIL project funded by the Ministry of Education, University and Research (MIUR). The initiative emanates from the autonomy status that Italian schools are granted (i.e. *School Autonomy Decree* (n. 275/1999) in experimenting novel, cutting-edge educational programmes and teaching methodologies (Langé, 2007; Magnani, 2009; Coonan, 2011). The aims of the actual CLIL project are as follows:

1. To create a new school ethos open to linguistic and cultural diversity
2. To set the ground for the second cycle education compulsory CLIL (2013- 2014)
3. To introduce and establish “independent learning” (monodocenza)
4. To promote positive experiential learning through cultivating multiple competences

The project’s aims along with CLIL retrospective and introspective analysis orientate the research questions towards the subsequent issues:

- Which is the most effective CLIL procedural implementation?
- What kind of competences do CLIL learners develop?
- What kind of affective factors do stakeholders develop?

3. Research design and components

3.1. Research framework

This paradigm is an action-research-oriented case study aiming to steer clear of the methodolatry, that is simply “a slavish attachment and devotion to methods”, as pointed out by Janesick (2007: 48). It is oriented towards a more eclectic approach consisting of a *macro* (i.e. research case study principles) and *micro level approach* (i.e. student questionnaire, classroom observation, a Science test and finally interviewing) (O’ Leary, 2010). Moreover, the *informed consent* (i.e., the process of informing all the involving parts about all aspects of the research procedure) and *positionality* (i.e., the stance of the researcher throughout the researching process) through *reciprocal communicative stance* (i.e., the sharing of views with the Science teacher) and *non reciprocal communicative stance* (i.e., an opinion distancing from learners and parents) are respected throughout the procedure (Koulouriotis, 2011).

3.2. Sampling

Sampling, as a key element to rendering research affordable involves (n= 267) students, who are both participants and evaluators. Their linguistic level in English after an initial *focus group interview* can be considered heterogeneous (Ferreira, 2011). The interview along with a consultation with their English language teachers led to a definition of fluctuating levels (A2Waystage - B1Threshold) (CEFR, 2001). Males outnumber females by around 80% being a tangible evidence of non emancipation in the upper secondary school. The gender ratio is

closely connected to age range and is an explicit source of information, as to the attitudes developed, once some researchers claim that males are less predisposed towards CLIL (Lasagabaster and Sierra, 2010).

4. CLIL in action

4.1. CLIL situated teaching model (CESL - CEIL continuum)

The CLIL course, apart from CLIL principles, is built upon the premise of case-based curriculum⁴ science lessons (i.e., geoscience and biology), as put forward by Goldsmith, consisting of two consecutive phases of a CLIL continuum: pre-CLIL and full CLIL (i.e. CESL-CEIL model) (2011). The observation is pivoted on the speaking and writing aspects in an almost three month period (November, 2011 - February, 2012) where learners are roughly exposed to CLIL for about 2- 4 hours per month.

CESL model

The CESL model is developed on the premise of getting a lucid picture of learners’ linguistic and content level, as well as gauging SM Teacher and learners’ disposition and expectations. The CLIL continuum purports to introduce English CLIL gradually without sticking to *content-obligatory language*, but oriented towards *content-compatible language* objectives, for the main aim is to support student communication and engagement in the content classroom (Pawan and Craig, 2011). This phase is considered vital for introducing CLIL considering learners’ level of English (cf. section 3.2) and as part of an inclusive and integrative education (Theoharis, 2009).

Content learning is approached via exploratory and Socratic methods shared between SM (Subject Matter) and EFL teacher. The SM teacher explains the main content points in Italian (L1), whereas the EFL teacher recapitulates the focal points and assesses the taught content in English (L2) through questioning strategies, which can elicit effective output in L2. The emerging teaching model can be considered as *Content- English Shared Learning* (CESL) model that precedes CLIL, or English CLIL in this case (CEIL). The CESL model fosters a simultaneous exposure to first and target language in a trajectory of *Input in L1, Process in L2, and Output in L2* as shown in Table 4.1.

<i>Procedure</i>	<i>Teacher</i>	<i>Language</i>	<i>Time</i>	<i>Activity</i>
Session 1	SM Teacher	L1	8- 10 min	Input
Session 2	EFL Teacher	L2 (Process)	8- 10 min	R- CQ ^(a) / Output
Session 3	SM Teacher	L1	8- 10 min	Input
Session 4	EFL Teacher	L2 (Process)	8- 10 min	R- CQ/ Output
Session 5	SM Teacher	L1	8- 10 min	Input
Session 6	EFL Teacher	L2 (Process)	8- 10 min	Round-off/ HW

(a) Recapitulation/ Comprehension Questions

Table 4.1 CESL Lesson Typology

The CESL pattern seems to be linear, but it is not always the case, as learners may intervene in L1 in any point of the lesson giving it novel nuances. A CESL phase is never *a priori* predictable, as there is always the element of unexpected that stems from code-switching between SM and EFL teachers and learners’ involvement. It is precisely this unpredictability

factor that renders the lesson interesting and embraced by learners as a CLIL premiere (i.e. pre- CLIL)

CEIL model

The English CLIL lessons, as opposed to pre- CLIL ones are more context oriented and built up by taking stock of the CLIL underpinning methodological principles, as well as modern pedagogies of the science field, as evident in many researches (Cook, 2011; Jee *et al*, 2010; Pang and Ross, 2010; Sarma, 2006). The selection of materials follows the hierarchal order of the CLIL pyramid, as proposed by Meyer (2010) taking into account all those parameters that point to a holistic process of learning procedure (e.g. topic selection, choice of media, task design etc). Language and content objectives are clear-cut and pervade diverse stages of the learning procedure relating learning to real- life situations by involving learners in natural ways (Table 4.2). They should explore and synthesize information about planets, perceive the subduction theory, process the phases of the Moon and then observe its phases for one month etc. They approach these natural phenomena through English by processing content and reality through an internal cognitive processing by dint of CALP English (Cummins, 1999; Goldsmith, 2011; Jee *et al*, 2010). Apart from content learning, the practitioner searches to introduce and boost lexis. Unlike pre-CLIL, full- CLIL is more oriented towards *content-obligatory language* and an etymological approach helps learners, who get confounded with esoteric language (e.g. *iso, gen, morphic, para, syn, pseudo, thermo* etc) (Sarma, 2006; Ferreira, 2011).

5. Unravelling research findings

5.1. Top down expository research approach

The scrutiny of the data starts from the periphery to the core, so that data processing can be gradual and penetrative. The top-down approach pertains to an interview held with one of the subject teachers, who prefers anonymity and is hence referred to, as Science teacher. She seems quite enthusiastic and believes that CLIL can help both in the assimilation of content and target language (e.g. *sia un vantaggio non solo per l'acquisizione dell' inglese, ma anche per la comprensione degli argomenti / it's an advantage not solely for acquiring English, but also for understanding the topics involved*)(Science Teacher, 2012). In general, she perceives CLIL as an opportunity to explore content in a new way, but insists upon exploring some science subjects first in Italian and then in English especially when there is a cognitive load. In addition, she considers pre- CLIL (i.e. CESL model) as a way to get to know how CLIL works (e.g. *e' servita a prendere confidenza con il nuovo progetto*), but does firmly support that the real phase of work is full-CLIL, that permits a better preparation for learners and a more efficacious assessment procedure (Science Teacher, 2012). The Science teacher considers that an abrupt compulsory CLIL integration in the fifth grade of upper secondary school, as put forward by the school reform, without an intensive preparatory phase could be a utopia.

<p>LESSON PLAN: TYPES OF ROCKS AND ROCK CYCLE</p> <p>Objectives</p> <p>Session 1:</p> <p>Define rock and describe what rocks are made of. Know how rocks are classified and described. Practise oral presentation skills Introduce context specific vocabulary</p> <p>Session 2:</p> <p>Explain how each of the three main rock types are formed. Describe the rock cycle Practise process reading skills Develop reviewing skills</p> <p>LESSON PLAN: PLATE TECTONICS (EARTH'S LAYERS)</p> <p>Objectives</p> <p>Session 1</p> <p>Compare and describe each of Earth's layers. Define lithosphere, oceanic and continental crust Compare and contrast the two parts of the core</p> <p>Session 2</p> <p>Define the concept of Pangea Explain Plate Tectonics Theory Assimilate the "subduction theory" Practise prepositions of place: near, next to, opposite to, far from etc</p> <p>LESSON PLAN: SOLAR SYSTEM</p> <p>Objectives</p> <p>Learn the planets and their position in the solar system: Practise structures relevant to expressing opinion Practise second conditional sentences</p> <p>LESSON PLAN: THE MOON'S PHASES</p> <p>Objectives:</p> <p>Introduce the phases of the Moon Practise listening skills Promote cognitive and metacognitive skills through experiential learning</p>
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Table 4.2 Full CLIL (CEIL) Science Lesson

On the other hand, the post-interview comments permitted a kind of *reciprocal communicative stance* (cf. section 3.1) (Koulouriotis, 2011). She reveals that learners seem motivated and their interest is increased even in L1 science lessons, but insinuates a kind of preoccupation for L1 curriculum implementation schedule with CLIL integration. Whenever CLIL therefore comes to substitute parts of L1 curriculum, it is seen as a "menace" for future assessment procedural goals.

5.2 Bottom-up expository research approach

5.2.1. Structural CLIL

The background CLIL penetration is a window to the consecutive pre- and full CLIL phase. Pre-CLIL concerns 157 learners, as not all courses are subsumed to this phase. Its ancillary role is prevalent as to first hearing the notions in L1 and then in L2 (34%) followed by the fact that they have time to think and elaborate the new notions (31%). The phase facilitates

learning according to 22% of the respondents, whereas the sense of security offered is limited to 14%. In addition, referring to preferences towards pre-CLIL phase the intermittent passage from Italian to English and *vice versa* seems to gather the top preferences of learners by 34,3% , followed by the coexistence of L1 and L2 by 33,7%. The subject assimilation follows by 19.6% and is rounded off by the presence of two teachers and methodologies (12, 2%).

Finally, as to the usefulness of pre-CLIL, learners deem it to be important to some extent by 48 %, whilst 27% do absolutely agree on its usefulness. Those that disagree reach the level of 25% manifesting a propensity towards full- CLIL procedure. The Science teacher sees pre-CLIL solely as a way to get to know CLIL, whilst learners consider it indispensable for deep thinking and intercultural understanding. Despite the heterogeneous level, they demonstrate a greater flexibility towards CLIL continuum as an innovation, whereas conversely, a small percentage of subject teachers seem sometimes sceptical and a kind of pseudocompliance⁵ is developed.

Observation shows that pre-CLIL cultivates extensively two aspects of 5Cs framework: *cognition* via interthinking and *culture* via code switching that are in a constant interplay. A round table discussion with those taking solely pre-CLIL classes brings to the fore that learners conceptualise pre-CLIL as a way to first develop their *phonological competence* through being exposed directly to new terminology and practise *prosody* (i.e the right pronunciation) on the spot. It helps them as well into building their *cognitive competence* through code switching, whilst one of the drawbacks pinpointed is the absence of circular learning, as the CEFR model has an ancillary role (CEFR, 2001; Seedhouse, 2010).

5.2.2. Deontic CLIL permeation

This phase elucidates basic and generic competences developed throughout the CLIL procedure that emerge as content, language, group and self oriented ones.

Development of content and language oriented competences

The first part of full- CLIL phase refers to areas that CLIL lessons affect. Learners speak more fluently by 60, 1 %, definitely more fluently by 21, 1 % and not so fluently by 18 %. Fluency is by and large extended in other domains and is typical of paratactic structures where meaning is delivered with some grammatical errors that are not penalised (Dalton-Puffer, 2011). Moreover, the majority does not read science related articles (60, 2 %), as opposed to the rest (31, 2%) and this is due to the fluctuating English level observed and to any potential degree of difficulty faced. As well, around 33, 5 % of students do not do an Internet research regarding CLIL lessons and solely 24, 9 % do so. Additionally, they do relatively understand better Science related notions through CLIL lessons by 49, 6 %, whereas 24, 8% fails to perceive Science terminology this way. It is evident that CLIL etymological approach helps into meaning perception and retention. CLIL seems to facilitate comprehension as well and creates a positive learning ambience, but there is still room for improving comprehension and lexical competence (CEFR, 2001; Eldridge *et al*, 2010; Science Teacher, 2012).

Finally, considering the CLIL science test, there is observed content and lexis assimilation (Eldridge *et al*, 2010). There is an evident *Morphology* and *Phonetic Transfer* (MT/ PT), as some words are written under a tacit L1 interference (Figure 5.1) implying a *grammatical* and *phonological competence* (CEFR, 2001; Seedhouse, 2010). Word 1 Giove is diverse from Jupiter, but learners elaborate the latter under the phonetic rules of Italian language where if a three syllable word is stressed on the first syllable, the following consonant is doubled i.e

Juppiter, which is a reflection of MT. They develop an idiosyncratic *grammatical competence* through L1 morphology transfer, once lexis is loaded with PT and MT.

Italian Word (L1)	English Word (L2)	CLIL Word (MT)
1. Giove	Jupiter	<i>Juppiter</i>
2. Sistema	System	<i>Sistem</i>
3. Telescopio	Telescope	<i>Telescopy</i>
4. Plutone	Pluto	<i>Pluton</i>

Figure 4.2 Science CLIL Morphological Transfer

Development of CLIL critical competences and learning beliefs

Furthermore, learners do by 32, 3 % definitely learn more about science with CLIL, whereas solely 17, 7 % support the opposite. CLIL science seems to enhance to a considerable extent *savoir-apprendre* (i.e ability to learn) (CEFR, 2001). It is evident even in the science test where there is observed a good performance, as to content learning and vocabulary assimilation. When comparing Science lessons to CLIL ones as to the comprehension degree, the majority consider that it is not particularly difficult refuting the Science Teacher’s opinion that CLIL lessons should be first tackled in L1, implying that the distinctiveness of CLIL subject and the corresponding curricular one can be clear cut.

In addition, during the evaluation procedure, it is noted that learners do absolutely agree that their *linguistic competence* has improved (30, 2%) followed by those that agree to some extent (63, 7%) and those that disagree (6, 6%) (Linares and Whittaker, 2007). The perception that learners develop about their performance moulds their attitude about it. Learners seem to feel quite confident about their English after the CLIL experience (Marsh, 2002; Lasagabaster and Sierra, 2010). They admit to understand and know more about science by absolutely agreeing by 32, 2%, agreeing to some extent by 47, 9% and those disagreeing by 20, 2%. Finally, CLIL seems to enhance *transversal competences* (i.e., content oriented research ones) where 55, 8 % and 25, 1 % do relatively and absolutely agree respectively (CEFR, 2001). This specific kind of competence is conceptualised as *supra content* competence, because learners extend their content and language knowledge into realistic contexts, so as to perceive and process natural phenomena through L2. (e.g., the observation and presentation of the Moon’s phases for a whole month—cf. section 4.1).

They eventually develop cognitive and metacognitive competences that comply with Science CDC model of learning through a purposeful linguistic use (cf. section 1.2.3). CLIL in this way transfers content knowledge and language use by conducting to a versatile meta-learning practice. However, a percentage of around 19, 4% think that they have not been benefited by CLIL in the science research procedure implying that these learners trust traditional L1 content research practices (Cook, 2011). The positive beliefs cultivated for the development of *linguistic, cognitive, metacognitive and transversal competences* seem to permeate Science CLIL by reinforcing CLIL *savoir apprendre* dynamics, which is crucial for learning productivity and success.

5.2.3. Epistemic CLIL elaboration

Epistemic CLIL on the other hand, sheds light on diverse affective factors developed in course of the CLIL experience such as: attitudes, beliefs, learning personality development, as well as ensuing parameters like: motivation, empathy, self confidence etc (Dellar, 2011).

Development of CLIL attitudes and collaborative competences

Learners demonstrate a positive attitude towards CLIL lessons, where 88, 4% denotes liking it *versus* 11, 6 %. This is due to the fact that CLIL is as an opportunity to practise both content and language (54%) and because they like English (23, 3%). Conversely, the main reason for CLIL aversion (11, 6 %) resides in the complexity of CLIL lessons (46, 6 %) and because of resistance to change (23, 3%). Another emerging reason related to the latter aspect derives from a questionnaire answer (e.g. *I think I won't learn science as good as with lessons in Italian*). It came out that some learners see CLIL as a subject about to substitute their regular Italian science lessons, for they perceive a rather stagnant L1 science curriculum implementation on the part of the Science Teacher, who being enthusiastic about CLIL, preferred lessons to be delivered mainly in L2. Their preoccupation is valid given that the maturity exams are in Italian and that the role of CLIL is by no way to substitute other disciplines, but to enrich them (Coyle, 2011; European Commission, 2012).

Moreover, as to the kind of collaborative competences developed, in the CLIL science context the Teacher/ Learner collaboration gathers the maximum of positive answers followed by group, project work and pair work. The self-confidence of a CLIL learner is cultivated via dual (i.e T/L) and group collaboration. The kind of relationship developed between T/L, L/Ls is part of *savoir etre competence*, as learning experience is processed as a group practice (CEFR, 2001). In general, learners seem to create solid expectations for CLIL lessons, as 91 % would like to continue them , as compared to the positive attitude towards CLIL (88,2%) implying a latent extrinsic motivation (i.e related to future occupational interests) (Dellar, 2011).

6. Data interpretation towards theory building

6.1. CLIL continuum as a mode to foster situated learning

Structural CLIL (CLIL continuum) is an attempt to launch and sustain the principal role of language and content learning. Its scope serves *inter alia* the need to perceive and extend endemic socio cultural traits into an authentic CLIL classroom practice, by adapting the versatility of Italian CLIL models to the profile of the specific context (Jamet, 2009). CLIL continuum develops gradually the school ethos towards cultural awareness by firstly establishing team teaching (*codocenza*) and gradually moving to independent learning (*monodocenza*) (Ludbrook, 2011). The CESL model through its ancillary and motivational role indicates that code switching (L1/L2) does not offer *per se* a sense of security, but is an implicit mode to step into processing the content exclusively in L2. Given the situation, the CESL model can acquire a tripartite identity in the classroom context (Figure 5.1). It can be used as a *dual learning model* in case of pseudocompliance, so as to strike a balance in partnership collaboration between EFL and SM teacher. It can further work as a *preparatory phase* (i.e pre-CLIL) that could lead gradually to the full- CLIL model, especially when the practitioner needs to get a full picture. Finally, it may function as a flexible *evaluative CLIL* model assessing contemporaneously the degree of content assimilation and L2 use.

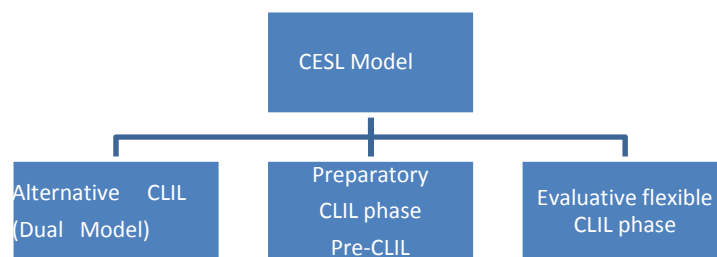


Figure 5.1 Utility of CESL model

Observation demonstrates that learners prefer CESL model in its second variation: i.e as a preparatory CLIL phase, as they are eager to move on to the full CLIL phase denoting that learners are open to educational formulas that approach holistically the content in the target language (Coyle, 2011; MIUR, 2011; Ting, 2011). CLIL should naturally take on elements by both target language and subject matter, but overenthusiasm with CLIL, or an “overdose” of it may sometimes be a deterrent to L1 school curriculum implementation and create resistance by learners that are in need of having a good command of science knowledge in L1, once it is part of the final maturity exams. The role of CLIL should be that of complementing the subject area and not substituting it, with the harmonious consent of all stakeholders without imposing choices, which are not easily digestible (European Commission, 2012).

6.2. Deontic CLIL as source for CLIL competences’ repertoire

Additionally, deontic CLIL is a source of information, as to what competences are developed in the CLIL continuum and boosts the transcendental character of CLIL praxis by implying correlations with the Common European framework of competences (CEFR, 2001). During pre- CLIL the preference over L1 and L2 coexistence supersedes that towards SM and EFL teachers demonstrating that Italian and English language symbiosis is not conceptualised as a way to assuage their fears, or inhibitions, but to reinforce their intercultural and cognitive thinking that leads respectively to the cultivation of intercultural and cognitive competence (Byram and Feng, 2004).

On the other hand, linguistic competences (i.e *grammatical, phonological, semantic*) and content ones are moderately developed in the full CLIL phase. It is noteworthy that the incrementing levels of comprehension observed, despite the relatively low L2 level of learners, as compared to the cognitive and vocabulary load that they cope with, indicate that CLIL may suit knowledge gradually to the ZPD of learners and help them to surpass language difficulties (Ball, 2012; Jamet, 2009). Science CLIL permits learners to go a step beyond classroom reality by transferring and synthesising prior knowledge and presenting new context related knowledge through the target language. The ensuing skills developed through approaching content via disparate modes pertain to the *savoir faire* competence, as learners enter into a process of *know how* to approach, deconstruct and synthesise CLIL input in a creative and experiential mode through building multiple competences, whereas the equivalence of CLIL competences to those outlined in CEFR could construct a more solid CLIL profile.

6.3. The development of epistemic CLIL variables

The variables of epistemic CLIL (e.g attitude/ stance, beliefs, motivation, collaboration, volition, self- confidence) entail a tacit cultivation of diverse competences that in turn lead to the development of critical learning personalities. One of the prevailing affective factors is that of stance towards CLIL practice. Research shows that CLIL succeeds in shaping positive attitudes towards learning debunking the myth that males are less predisposed towards CLIL. The positive learning stance is developed as to English language learning, content learning perception and assimilation, as well as exploratory skills pertinent to content discovery and language integration. In this way, learners develop a transversal knowledge that covers a lot of areas of knowledge and competences (e.g linguistic, content, and digital ones) (Vlachos, 2009).

Furthermore, *volition* as another momentous CLIL aspect is oriented towards the dual focused character of CLIL, as contrasted to the preferences of English and Science as single subjects (CEFR, 2001). Hence, both Science and English gain a special reputation via CLIL, whilst the intersection of both seems to be the culminating point of intrinsic motivation for them. CLIL as well shapes learners' self confidence in many ways and degrees regarding the three principal CLIL variables (i.e content learning, language learning, content language medium (i.e CLIL practitioner) (Figure 5.2).

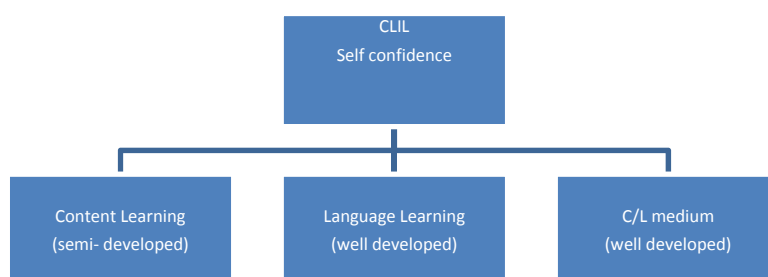


Figure 5.2. The influence of CLIL variables in building up self-confidence

Research once more has found that CLIL has a complementary role as to the development of self confidence regarding content learning and a principal one, as to language learning and content- language medium. Due to the short term CLIL exposure, it is natural that learners still consider L1 as a medium that can better enhance content learning and assimilation, whereas the observed teacher- dependent cultivation of self confidence demonstrates that CLIL as a novel practice can not be established automatically into learners' ZPD, but gradually through scaffolding and a negotiation of meaning (Lasagabaster and Sierra, 2010). In the same vein, the rather weak self confidence developed as to content learning implies that learners should reach a higher level of English that can relatively approach that of content because "Linguistic competence helps in the acquisition of content knowledge, and content knowledge can make input more comprehensible, which helps the development of linguistic proficiency" (Krashen, 2011: 7).

Finally, the beliefs developed by learners, as to the CLIL experience, along with the immediacy that CLIL allocates for program negotiation renders learning authentic and learners active decision makers along with the practitioner. This evinces that through CLIL

learners develop a new learning personality that is pluralistic and integral by cultivating not solely interthinking, but also free thinking, as to educational preferences. CLIL learners set the goals for a type of learning with future by developing personalities imbued with a life-long learning philosophy (Bologna Secretariat, 2006) conjuring up Rousseau's motto that the person's natural tendencies and abilities should dictate the pace of intellectual development, rather than a set of standards imposed by an institution (Krilic, 2011).

6.4. Extensive implications and perspectives

CLIL continuum approaches learning as a classroom and social experience rendering language proficiency and content knowledge perceivable and transferable as a coherent whole, albeit content transferability outweighs language transferability, due to their between chasm. The transferability cultivates and consolidates the *savoir apprendre* profile of CLIL, as well as harnesses competences and increases learners' self esteem, motivation and volition moulding new learning personalities saturated with expectations. The overall CLIL experience considers imperative a context oriented policy on a national and international level. CLIL implementation on an international level should evade a one size fits all approach, calling for the establishment of pluriCLILism, as an educational strategy, whilst CLIL methodology should exploit pedagogies that are inherent to both EFL terrain and subject matter area (e.g CDC model, etymological approach etc). On a national level though, CLIL should have an autonomous role within the Italian school curriculum, without touching its integrity and coherence, but complementing it as a stand alone school subject via independent learning formula that can contribute to school ethos and the needs of the globalised world (Crystal, 2012; European Commission 2012).

A further acute aspect is the gradual CLIL implementation implying *the earlier the better* principle, that is applicable in foreign language learning (Milton and Alexiou, 2006) implying that CLIL can not be considered a panacea, but it needs to be supported by the system in order to be programmatic and effective (Coonan, 2011). As the actual study is conducted under the auspices of EAP and concerns a Greek target audience as well, it implies that the actual research may constitute an impetus for a more drastic CLIL implementation in the Greek context, which is linguistically fecund and open to challenging practices like heteroglossic CLIL.

7. Conclusion

In sum, the implementation of CLIL continuum becomes feasible due to a permutation of pedagogic choices that draw on any congruent factors of CLIL innovation by entailing that CLIL, as a new policy, should not be elusive and imposed, but realistic without myopically conforming to a uniform, or monolithic approach. English CLIL (CEIL) praxis in an Italian upper secondary school is an overt propensity to put into practice the MT + 2 principle by thus promoting multilingualism and intercultural spirit rendering it a lingua franca used among people that share the same L1 (Lorenzo *et al*, 2009). The promotion of multilingualism through CLIL continuum grants learning novel nuances, not solely as part of mainstream curriculum, but also as part of a life-long learning process cultivating critical learning personalities "capable how to govern, rather than simply be governed" (Giroux, 2010: 10).

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Notes

1. Romero-Trillo (2008) uses this term to refer to the combination of two independent linguistic disciplines that benefits both as in Ecology (Llinares and Morton, 2010).
 2. "The researchers suggest that the effectiveness of active and metacognitive learning can be further evaluated using a novel model referred to as the Construction-Deconstruction-Connectionist process (CDC Model) built upon the premise that learning in the classroom is not only a cognitive event, but also a psycho-dynamic, social process" (Pang and Ross, 2010: 80).
 3. A reform agreed by 29 European states in the Italian city of Bologna in 1999 on creating a "European space for higher education" aiming to harmonize higher education qualifications across Europe. Today 45 states are part of the Bologna Process.
 4. A case-based curriculum is a teacher-originated curriculum that diverges from that of the textbook, in that it has a new order of issues to be tackled, that evolves in a narrative engagement and curiosity by rendering learners active participants of the learning process (Goldsmith, 2011).
 5. Pseudocompliance or passive resistance: Teachers would prefer to continue with the traditional pull-out program, so they do not embrace the philosophies, or practices of teacher collaboration
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